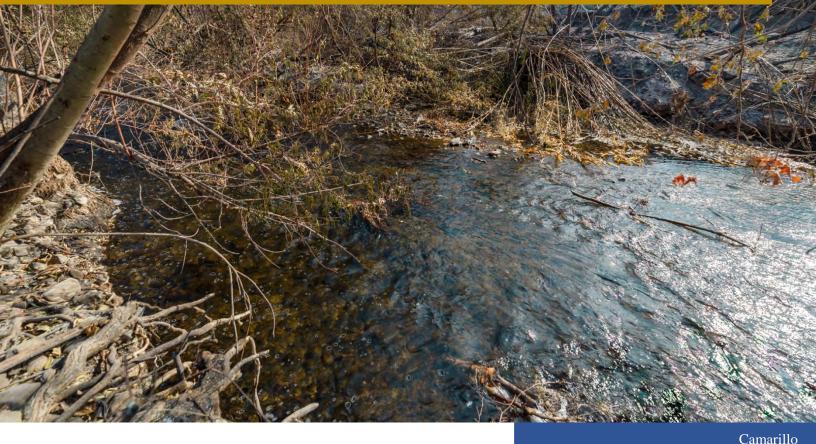


# 2018-2019 Permit Year

Ventura Countywide Stormwater Quality Management Program Annual Report

# Attachment E — TMDL Reports (3/3)



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

December 13, 2019



June 28, 2019

Jenny Newman, Assistant Executive Officer Los Angeles Regional Water Quality Control Board 320 W. 4th St., Suite 200 Los Angeles, CA 90013

# Subject: 2019 ANNUAL REPORT FOR THE VENTURA RIVER ALGAE TMDL (RESOLUTION NO. R12-011)

Dear Ms. Newman:

Enclosed for your review and consideration is the 2019 Annual Report prepared and submitted to document completion of monitoring activities required by the Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients Total Maximum Daily Load, Resolution No. R12-011 (Ventura Algae TMDL) and the Ventura Algae TMDL Comprehensive Monitoring Plan for Receiving Water approved by Los Angeles Regional Water Quality Control Board on October 20, 2014.

This document is being submitted on behalf of the County of Ventura, Ventura County Watershed Protection District, Ojai Valley Sanitary District, City of Ojai, City of Ventura, California Department of Transportation, and the Ventura County Agricultural Irrigated Lands Group (represented by the Farm Bureau of Ventura County).

If you have any comments or questions regarding the attached document, please contact me at (805) 645-1382 or <u>Ewelina.Mutkowska@ventura.org</u>.

Sincerely,

LOW

Ewelina Mutkowska County Stormwater Program Manager Ventura County Watershed Protection District

Ms. Jenny Newman, June 28, 2019 Page 2 of 2

 cc: Jun Zhu, Los Angeles Regional Water Quality Control Board Jeff Pratt, Ventura County Public Works Agency Glenn Shephard, Ventura County Watershed Protection District Arne Anselm, Ventura County Watershed Protection District Joe Yahner, City of Ventura Greg Grant, City of Ojai Jeff Palmer, Ojai Valley Sanitary District John Krist, Farm Bureau of Ventura County Shirley Pak, California Department of Transportation

# TOTAL MAXIMUM DAILY LOAD FOR ALGAE, EUTROPHIC CONDITIONS, AND NUTRIENTS IN VENTURA RIVER, INCLUDING THE ESTUARY, AND ITS TRIBUTARIES (VR ALGAE TMDL)

# **2019 ANNUAL REPORT**

Submitted to TMDL Responsible Parties Implementing Receiving Water Monitoring Requirements:

City of Ojai City of Ventura County of Ventura Ojai Valley Sanitary District California Department of Transportation Ventura County Agricultural Irrigated Lands Group Ventura County Watershed Protection District

Prepared by:

Ventura County Watershed Protection District June 28, 2019



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Appendix A:	Field Data Sheets (May 2018 – April 2019)
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### **EXECUTIVE SUMMARY**

On behalf of the Total Maximum Daily Load (TMDL) Responsible Parties, the Ventura County Watershed Protection District (District) began sampling in accordance with the Ventura River Algae TMDL Comprehensive Monitoring Plan for Receiving Waters (CMP) on January 14, 2015. As required by the TMDL and described in the CMP, monitoring is conducted at one site in the Ventura River Estuary (TMDL-Est), one site in each of the Ventura River reaches 1 – 4, and in two main tributaries, Cañada Larga and San Antonio Creek (TMDL-R1, TMDL-R2, TMDL-R3, TMDL-R4, TMDL-CL and TMDL-SA, respectively).

This monitoring report covers May 2018 – April 2019 and includes field measurements, continuous data logger results, laboratory results, and field observations for the prescribed monitoring parameters at each site, including monthly measurements of flow, nutrients, dissolved oxygen (DO), and pH; two-week continuous monitoring of DO and pH every quarter (temperature and conductivity are also recorded); observations of flow along the Ventura River mainstem; and monthly monitoring of algae during the dry season (May – September) for chlorophyll a and macroalgal percent cover.

The Ventura River Watershed has been subjected to increased environmental stresses in recent years. In addition to severe drought, the watershed was heavily impacted by the Thomas Fire, which started on December 4, 2017 and continued through January 9, 2018, becoming (at that time) the largest recorded wild fire in California history. The fire burned most of the open space and forest lands in the watershed, as well as orchards, homes, and other structures from Fillmore to Santa Barbara. Areas that did not burn (mainly the Ojai Valley), were still subject to heavy ash deposition.

Although Ventura County received average rainfall over the last two wet seasons (2017/18 and 2018/19), drought is still not over in the county. Rainfall in the 2017/18 wet season caused many creeks and streams in the Ventura River watershed to flow into the beginning of the 2018 dry season (May), however flow was observed to be discontinuous in the Ventura River above Casitas Vista Road and in San Antonio Creek by May and June 2018, respectively. Flow connectivity was restored by rainfall prior to the January 2019 monitoring event. TMDL-Est through TMDL-R3 are perennial and able to be sampled for nutrients and algae throughout the dry season, however TMDL-R4, TMDL-SA, and TMDL-CL were dry for most of the dry season. Flow variations observed between monitoring sites and events might be due to a combination of factors including geology, weather conditions, inputs, and extractions.

Quarterly two-week continuous monitoring was conducted using calibrated Hydrolab HL4 water quality sondes beginning May 1, 2018, September 12, 2018, December 11, 2018, and March 13, 2019. Sondes were not deployed at dry sites (TMDL-R4, TMDL-SA, and TMDL-CL in September and December). Heavy winter storms in early 2019 reshaped the estuary and removed camouflaging vegetation cover so the TMDL-Est sonde was not deployed in March 2019 because of the high risk of theft at this site (following the loss of a sonde in September 2017).

All sampled sites except for TMDL-R1, TMDL-R2, and TMDL-CL exceeded the seasonal average numeric target for macroalgal cover ( $\leq$ 15% for the estuary and  $\leq$ 30% for the riverine sites). All sites except TMDL-CL and TMDL-SA exceeded the seasonal average numeric target for algal biomass (estuarine phytoplankton seasonal average chlorophyll *a* target of  $\leq$ 20 µg/L, riverine seasonal average chlorophyll *a* target of  $\leq$ 150 mg/m<sup>2</sup>).

All measurements for pH were within the numeric target limits of 6.5-8.5 pH units except for TMDL-Est and TMDL-CL during May 2018 monthly and continuous monitoring as well as TMDL-Est December 2018 continuous monitoring. pH values were highest during the May 2018 sonde deployment (8.77 at TMDL-Est and 8.79 at TMDL-CL). DO levels below the numeric target of 7 mg/L were observed frequently at sites with low flow during monthly grab sample monitoring, particularly at TMDL-R4 and TMDL-SA, and during dry season sonde deployments at almost all sites. The general association between DO and low flow is possibly due to the ponding of water upstream and/or at the measurement location, as well as higher temperatures. The measured range for total nitrogen was from <0.20 mg/L to 4.1 mg/L and total phosphorus was between 0.0070 (DNQ) mg/L and 1.0 mg/L.

Sampling event data, including laboratory reports, chain of custody forms, and field data sheets, are provided as appendices to this report.

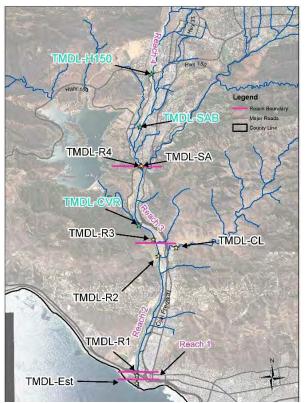
#### BACKGROUND

The Water Quality Control Plan for the Los Angeles Region was amended on December 6, 2012 to incorporate the Total Maximum Daily Load for Algae, Eutrophic Conditions, and Nutrients in the Ventura River, including the Estuary, and its Tributaries (VR Algae TMDL). The VR Algae TMDL became effective on June 28, 2013 and required the development and implementation of a comprehensive monitoring plan (CMP) for receiving water monitoring to assess numeric attainment and measure in-stream nutrient concentrations. The CMP submitted by the Responsible Parties (Ojai Valley Sanitary District, Ventura County Watershed Protection District, County of Ventura, City of Ojai, City of San Buenaventura (Ventura), California Department of Transportation, and the Ventura County Agricultural Irrigated Lands Group (represented by the Farm Bureau of Ventura County)) was approved by the Los Angeles Regional Water Quality Control Board (Regional Board) on October 20, 2014.

On November 18, 2014, the Ventura County Watershed Protection District (District) was retained by the Responsible Parties to conduct monitoring in accordance with the CMP for up to 5 years. The CMP required sampling to begin no later than 90 days after the Los Angeles Regional Water Quality Control Board approved the CMP, which equates to January 18, 2015. Monitoring began on January 14, 2015.

As required by the VR Algae TMDL, the CMP prescribes year-round monthly water quality monitoring for nutrients and other water quality parameters at one site in the Ventura River Estuary, one site in each of the Ventura River reaches 1 - 4, and in two main tributaries, Cañada Larga and San Antonio Creek. Continuous monitoring of dissolved oxygen (DO) and pH (both of which also require temperature monitoring), are required at each site every quarter. Conductivity is also measured during the continuous monitoring. The CMP also requires monthly monitoring of algae (chlorophyll *a* and percent macroalgal cover) during the dry season (May – September). This report is a summary of monthly dry season monitoring data from May – September 2018, monthly wet season monitoring data from October 2018 – April 2019, and quarterly continuous data logging conducted in May, September, and December 2018, and March 2019.





#### Ventura River Algae TMDL Annual Report

Note:

\* Yellow site markers (black labels) are sampling locations including TMDL-Est, TMDL-R1, TMDL-R2, TMDL-R3, TMDL-CL, TMDL-R4, and TMDL-SA.

\*\* Blue site markers (blue labels) are flow observation locations including TMDL-CVR, TMDL-SAB, and TMDL-H150.

### ACCESS PERMISSION

In 2015, in order to allow for continuity of monitoring site locations, five-year easements were sought from property owners where sampling sites are located for the fee of \$250 per term. The temporary easements expire five years from the date of approval (early 2020). Two property owners declined the five-year easement request but signed a revocable access permit instead. The sites affected by the permits are TMDL-R2 (which was moved upstream of the site listed in the CMP because the owner of that parcel denied the access request) and TMDL-SA directly above the confluence with the Ventura River. TMDL-R2 was sampled approximately 200 meters upstream of the Ojai Valley Sanitary District site (OVSD-R5) for monthly monitoring and approximately 300 meters upstream for continuous monitoring in order to be entirely on permitted property.

### MONTHLY MONITORING

Monitoring occurred monthly as required. Flow was observed to be discontinuous along the mainstem of the Ventura River upstream of Casitas Vista Road until the January 2019 monitoring event, as shown in Table 1. Sample dates and collecting agency are shown in Table 2 (sample sites that were dry are noted as such and shaded grey). Monthly field data (including flow) is summarized in Table 3 and nutrient data is summarized in Table 4. The District contracted with Aquatic Bioassay & Consulting Laboratories, Inc. (ABC) for assistance with the monthly monitoring of chlorophyll *a* and percent cover of algae during the 2018 Dry Season (Table 5, Table 6, and Table 7).

Date	Ventura River at Hwy 150	Ventura River at Santa Ana Blvd	Ventura River at Casitas Vista Road
5/16/2018	6 cfs	Water visible downstream but DRY at bridge	6 cfs
6/4/2018	DRY	DRY	Flowing east end ~ 2 cfs
7/10/2018	DRY	DRY	Flowing east end ~ 2 cfs
8/15/2018	DRY	DRY	Flowing east end ~ 2-3 cfs
9/4/2018	DRY	DRY	Ponded west end. Flowing east end ~ 2-3 cfs
10/10/2018	DRY	DRY	Ponded west end. Flowing east end ~ 2-3 cfs
11/19/2018	DRY	DRY	Ponded west end. Flowing east end ~ 3-4 cfs
12/10/2018	~3 cfs	DRY	Ponded west end. Flowing east end ~ 5 cfs
1/10/2019	~6 cfs	~2 cfs, flowing west channel only	~ 6 cfs, ~2cfs west side and 4-6 cfs east side.
2/12/2019	Est 30 cfs	Est 30 cfs. Main flow west channel, also flowing east channel.	Est 50 cfs. Main flow east bank, also flowing west bank.
3/13/2019	Est 60 cfs	Est 50 cfs	Est 80 cfs. Main flow east bank (~70 cfs), also flowing west bank (~10 cfs).
4/8/2019	Est 20 cfs	Est 20 cfs	Est 30 cfs

#### TABLE 1. MAY 2018 - APRIL 2019 OBSERVATION SITES

TABLE 2. MAY 2018 – APRIL 2019 WATER QUALITY SAMPLE COLLECTION DATE AGENCY

			Sample Date							
Sample Month	Season	Collecting Agency	TMDL- Est	TMDL- R1	TMDL- R2	TMDL- R3	TMDL- R4	TMDL- SA	TMDL-CL	
MAY 2018	Dry	District/ABC	5/16	5/16	5/16	5/15	5/15	5/15	5/15	
JUN 2018	Dry	District/ABC	6/7	6/7	6/6	6/6	6/6	Mostly Dry (6/6)	DRY (6/4)	
JUL 2018	Dry	District/ABC	7/10	7/10	7/9	7/9	7/9	Mostly Dry (7/9)	DRY (7/10)	
AUG 2018	Dry	District/ABC	8/15	8/15	8/14	8/14	DRY (8/14)	Mostly Dry (8/14)	DRY (8/14)	
SEP 2018	Dry	District/ABC	9/5	9/5	9/5	9/5	DRY (9/4)	DRY (9/4)	DRY (9/4)	
OCT 2018	Wet	District	10/10	10/10	10/10	10/10	DRY (10/10)	DRY (10/10)	DRY (10/10)	
NOV 2018	Wet	District	11/19	11/19	11/19	11/19	DRY (11/19)	DRY (11/19)	DRY (11/19)	
DEC 2018	Wet	District	12/10	12/10	12/10	12/10	DRY (12/10)	DRY (12/10)	DRY (12/10)	
JAN 2019	Wet	District	1/10	1/10	1/10	1/10	1/10	1/10	1/10	
FEB 2019	Wet	District	2/12	2/12	2/12	2/12	2/12	2/12	2/12	
MAR 2019	Wet	District	3/13	3/13	3/13	3/13	3/13	3/13	3/13	
APR 2019	Wet	District	4/8	4/8	4/8	4/8	4/8	4/8	4/8	

"Mostly Dry" indicates that water was present at the monitoring site but upstream flow was insufficient to meet algae sampling protocols so monthly monitoring parameters were sampled but algae monitoring/collection could not be conducted. "DRY" sites had insufficient water present for any sampling to take place. TMDL-SA and TMDL-CL were "Mostly Dry" or "DRY" for much of the reporting period and TMDL-R4 went dry for a shorter duration..

#### Monthly Field Data

#### TABLE 3. MAY 2018 - APRIL 2019 FIELD DATA

Site	Sample Date	Sample Time	Berm Status	Flow (cfs)	pH (pH Units)	DO (mg/L)	SC (μS/cm)	Salinity (ppt)	Water Temp (°C)
					Numeric Target 6.5 - 8.5	Numeric Target >7 mg/L			
TMDL-Est	5/16/2018	12:55	Open-west end	NA	8.68	12.02	39080	24.9	22.7
TMDL-Est	6/7/2018	9:45	Open-west end	NA	8.42	11.02	7670	4.2	22.1
TMDL-Est	7/10/2018	10:10	Closed	NA	8.06	8.34	4536	2.4	27.2
TMDL-Est	8/15/2018	10:20	Closed	NA	8.27	9.08	3314	1.7	26
TMDL-Est	9/5/2018	13:50	Closed	NA	8.15	7.47	2434	1.3	23.5
TMDL-Est	10/10/2018	11:25	Closed	NA	7.94	8.22	1940	1	21.3
TMDL-Est	11/19/2018	14:55	Closed	NA	8.22	13.78	1595	0.8	14.5

Site	Sample Date	Sample Time	Berm Status	Flow (cfs)	рН (pH Units)	DO (mg/L)	SC (μS/cm)	Salinity (ppt)	Water Temp (°C)
					Numeric Target 6.5 - 8.5	Numeric Target >7 mg/L			
TMDL-Est	12/10/2018	12:00	Open-west end	NA	7.96	11.09	25100	15.3	15.3
TMDL-Est	1/10/2018	12:00	Open-west end	NA	7.88	8.71	16320	9.6	13.1
TMDL-Est	2/12/2019	12:40	Open both ends	NA	7.41	6.35	29720	18.1	17.3
TMDL-Est	3/13/2019	13:20	Open both ends	NA	8.3	9.38	1190	0.6	14.6
TMDL-Est	4/8/2019	14:15	Open both ends	NA	8.33	11.11	1379	0.7	21.1
TMDL-R1	5/16/2018	11:00	NA	3.73	8.35	9.51	1719	0.9	18.5
TMDL-R1	6/7/2018	7:45	NA	2.69	8.37	9.22	1794	0.9	18.3
TMDL-R1	7/10/2018	7:45	NA	1.93	7.77	6.42	1742	0.9	23.3
TMDL-R1	8/15/2018	7:40	NA	1.3	8.03	7.46	1691	0.9	22.5
TMDL-R1	9/5/2018	11:50	NA	2.03	8.14	7.14	1645	0.8	21
TMDL-R1	10/10/2018	10:40	NA	1.51	7.9	7.62	1778	0.9	18.5
TMDL-R1	11/19/2018	13:45	NA	2.22	7.93	9.7	1557	0.8	13.4
TMDL-R1	12/10/2018	11:05	NA	5.3	8.03	9.93	1527	0.8	13.3
TMDL-R1	1/10/2019	11:10	NA	6.07	8.15	9.42	1716	0.9	12.9
TMDL-R1	2/12/2019	12:00	NA	50**	8.32	10.21	1191	0.6	10.6
TMDL-R1	3/13/2019	12:30	NA	80**	8.35	9.41	1170	0.6	13.5
TMDL-R1	4/8/2019	13:15	NA	53.27	8.41	10.85	1204	0.6	19.9
TMDL-R2	5/16/2018	8:20	NA	3.35	8.06	7.42	1255	0.6	18.4
TMDL-R2	6/6/2018	13:10	NA	3.26	8.22	9.15	1327	0.7	21.5
TMDL-R2	7/9/2018	13:00	NA	2.94	8.17	8.91	1305	0.7	26.1
TMDL-R2	8/14/2018	11:15	NA	2.11	8.2	6.66	1315	0.7	25.1
TMDL-R2	9/5/2018	9:45	NA	2.61	7.96	6.84	1269	0.6	22.7
TMDL-R2	10/10/2018	9:30	NA	1.72	7.78	7.31	1324	0.7	21.1
TMDL-R2	11/19/2018	12:00	NA	6.84	7.85	9.4	1232	0.6	16.5
TMDL-R2	12/10/2018	10:00	NA	4.89	7.93	9.14	1232	0.6	15.2
TMDL-R2	1/10/2019	10:10	NA	6.69	8.03	7.95	1185	0.6	14.6
TMDL-R2	2/12/2019	10:50	NA	55**	8.25	10.03	1054	0.5	9.8
TMDL-R2	3/13/2019	11:30	NA	80**	8.23	9.62	1030	0.5	13
TMDL-R2	4/8/2019	12:20	NA	30**	8.2	9.32	1083	0.5	19.1
TMDL-R3	5/15/2018	12:00	NA	0.92	8.28	12.94	1152	0.6	21.2
TMDL-R3	6/6/2018	11:05	NA	0.8	8.02	8.69	1176	0.6	20
TMDL-R3	7/9/2018	11:00	NA	1.46	8	9.63	1219	0.6	24.4
TMDL-R3	8/14/2018	9:00	NA	1	7.92	6.74	1219	0.6	22
TMDL-R3	9/5/2018	7:40	NA	1	7.74	6.91	1192	0.6	20.9
TMDL-R3	10/10/2018	8:25	NA	0.74	7.47	7.89	1229	0.6	18.1
TMDL-R3	11/19/2018	10:40	NA	2.31	7.85	10.3	1189	0.6	15.1
TMDL-R3	12/10/2018	9:00	NA	3.39	7.89	9.5	1083	0.6	14.5

Site	Sample Date	Sample Time	Berm Status	Flow (cfs)	pH (pH Units)	DO (mg/L)	SC (µS/cm)	Salinity (ppt)	Water Temp (°C)
					Numeric Target 6.5 - 8.5	Numeric Target >7 mg/L			
TMDL-R3	1/10/2019	9:10	NA	4.6	7.96	8.18	1159	0.6	15.4
TMDL-R3	2/12/2019	10:00	NA	50**	8.24	10.62	1040	0.5	8.9
TMDL-R3	3/13/2019	10:40	NA	80**	8.27	9.77	1000	0.5	12.1
TMDL-R3	4/8/2019	11:20	NA	30**	8.19	9.22	1056	0.5	18
TMDL-R4	5/15/2018	8:05	NA	0.69	7.66	8.36	1070	0.5	16.6
TMDL-R4	6/6/2018	8:00	NA	0.24	7.48	6.12	1060	0.5	17.7
TMDL-R4	7/9/2018	8:40	NA	0.02*	7.2	5.46	1092	0.5	19.4
TMDL-R4	8/14/2018	8:00	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	9/4/2018	10:00	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	10/10/2018	7:50	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	11/19/2018	9:30	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	12/10/2018	8:25	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	1/10/2019	8:25	NA	<0.1*	7.45	5.37	1147	0.6	12
TMDL-R4	2/12/2019	9:00	NA	40**	8.25	10.37	937	0.5	8.4
TMDL-R4	3/13/2019	9:15	NA	80.9	8.18	9.59	901	0.4	11.8
TMDL-R4	4/8/2019	9:20	NA	34.6	7.88	9	949	0.5	17.2
TMDL-SA	5/15/2018	10:25	NA	0.01*	7.25	4.54	1026	0.5	17.3
TMDL-SA	6/6/2018	10:20	NA	0.01*	7.2	3.38	1030	0.5	17.5
TMDL-SA	7/9/2018	10:00	NA	0.02*	7.11	4.79	1073	0.5	19.2
TMDL-SA	8/14/2018	8:20	NA	< 0.01*	7.07	5.84	997	0.5	18.3
TMDL-SA	9/4/2018	10:10	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	10/10/2018	8:00	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	11/19/2018	9:30	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	12/10/2018	8:35	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	1/10/2019	8:10	NA	<0.01*	7.68	5.79	1208	0.6	8.4
TMDL-SA	2/12/2019	8:25	NA	26.3	8.28	10.99	1188	0.6	7.2
TMDL-SA	3/13/2019	8:45	NA	58.6	8.26	10.12	1072	0.5	10.2
TMDL-SA	4/8/2019	9:00	NA	9:55	8.25	10.05	1271	0.6	16.7
TMDL-CL	5/15/2018	14:00	NA	0.035	8.73	10.58	3709	1.9	31.4
TMDL-CL	6/4/2018	13:30	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	7/10/2018	12:15	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	8/14/2018	13:30	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	9/4/2018	8:45	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	10/10/2018	10:15	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	11/19/2018	13:20	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	12/10/2018	7:50	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	1/10/2019	7:25	NA	0.04	8.2	11.78	4147	2.2	5.6
TMDL-CL	2/12/2019	7:30	NA	2.45	8.27	11.7	4003	2.1	5.5

Site	Sample Date	Sample Time	Berm Status	Flow (cfs)	pH (pH Units)	DO (mg/L)	SC (µS/cm)	Salinity (ppt)	Water Temp (°C)
					Numeric Target 6.5 - 8.5	Numeric Target >7 mg/L			
TMDL-CL	3/13/2019	7:30	NA	4.5	8.34	10.47	3583	1.9	8.9
TMDL-CL	4/8/2019	8:10	NA	1.27	8.22	11.03	3706	2	15.3

\* The flow during this event was below the threshold for accurate meter measurement. These results are estimated. \*\* Flow too high for safe wadeability at this site. Estimated visually and/or from nearby gauges/measurements. NA: Not applicable. Berm status only applies to the estuary site TMDL-Est.

At the start of the dry season, surface flow in the Ventura River began downstream of the Santa Ana Blvd Bridge, upstream of TMDL-R4, and continued to the estuary, including through the perennial reaches of TMDL-R3 and below. TMDL-R4 went dry mid-way through the dry season after which flow in the River began near the TMDL-CVR observation site until January 2019, when enough rain fell to create runoff at all sites and re-establish flow connectivity with the upper watershed.

Year-round surface flow in the River starts around Foster Park (near the Casitas Vista Rd Bridge observation point) and is typically perennial at TMDL-R3 and below. The flow at TMDL-R2 is a combination of Ventura River surface flow downstream of TMDL-R3 and the discharge from the Ojai Valley Sanitary District's wastewater treatment plant. Flow measurements taken during this reporting period were typically higher at TMDL-R2 than TMDL-R1 during ambient conditions but the reverse was true during the wettest periods (Feb - Apr 2019). Potential causes for changes in flow include surface/subsurface flow, groundwater interaction, geology and infiltration rates, antecedent moisture, agricultural and urban inputs and extractions, etc.

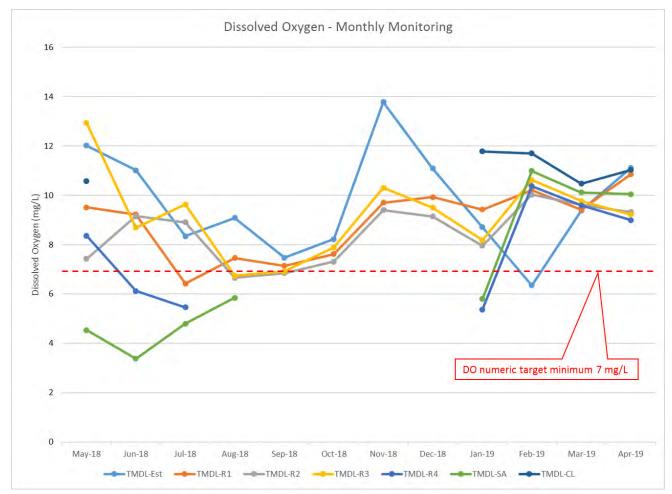


FIGURE 2. 2018 – 2019 MONTHLY MONITORING - FLOW

Absent data points indicate that the measurement could not be taken, i.e. the site was dry.

Low levels of DO tended to occur during periods of low flow, possibly due to the ponding (and potential stagnation) of water observed upstream and/or at the measurement location.

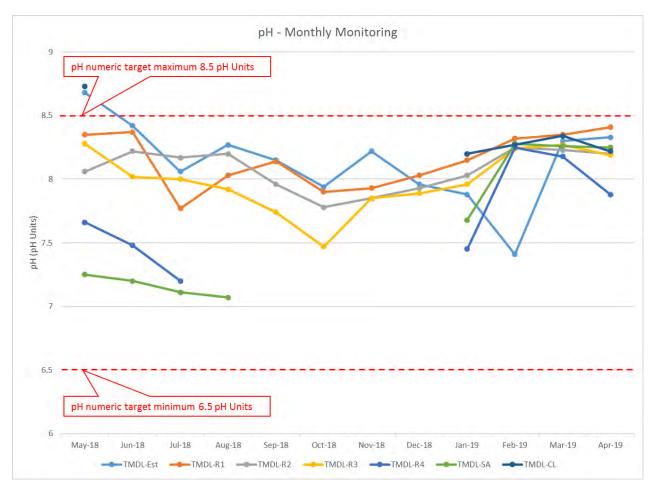




Absent data points indicate that the measurement could not be taken, i.e. the site was dry.

All monthly field measurements for pH were within the numeric target limits, except for TMDL-Est and TMDL-CL in May 2018.

FIGURE 4. 2018 – 2019 MONTHLY MONITORING - PH



Absent data points indicate that the measurement could not be taken, i.e. the site was dry.

#### MONTHLY NUTRIENT DATA

TABLE 4. MAY 2018 - APRIL 2019 NUTRIENT DATA

Site	Sample Date	Sample Time	P Total EPA 365.1 (mg/L)	P Diss EPA 365.1 (mg/L)	TKN Total EPA 351.2 (mg/L)	TKN Diss EPA 351.2 (mg/L)	N Total Calculated (mg/L)	N Diss Calculated (mg/L)	NO3+ NO2-N EPA 353.2 (mg/L)
TMDL-Est	5/16/2018	12:55	0.065	0.0084 (DNQ)	0.58	0.3	0.58	0.3	<0.083
TMDL-Est	6/7/2018	9:45	0.13	0.042	1.1	0.62	1.2	0.72	0.1 (DNQ)
TMDL-Est	7/10/2018	10:10	0.12	0.091	0.92	0.61	0.92	0.61	<0.083
TMDL-Est	8/15/2018	10:20	0.14	0.19	1.1	0.53	1.2	0.67	0.15 (DNQ)
TMDL-Est	9/5/2018	13:50	0.11	0.025	0.75	0.48	0.75	0.48	<0.083
TMDL-Est	10/10/2018	11:25	0.055	0.026	0.78	0.43	0.78	0.43	<0.083
TMDL-Est	11/19/2018	14:55	0.075	0.026	0.68	0.44	0.68	0.44	<0.083

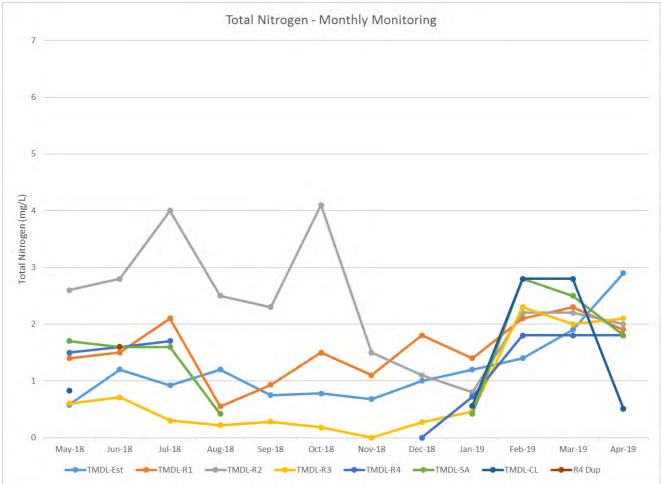
Site	Sample Date	Sample Time	P Total EPA 365.1 (mg/L)	P Diss EPA 365.1 (mg/L)	TKN Total EPA 351.2 (mg/L)	TKN Diss EPA 351.2 (mg/L)	N Total Calculated (mg/L)	N Diss Calculated (mg/L)	NO3+ NO2-N EPA 353.2 (mg/L)
TMDL-Est	12/10/2018	12:00	0.14	0.092	0.59	0.34	1	0.78	0.44
TMDL-Est	1/10/2018	12:00	0.12	0.077	0.8	0.52	1.2	0.92	0.4
TMDL-Est	2/12/2019	12:40	0.13	0.013	1.4	1.2	1.4	1.2	<0.083
TMDL-Est	3/13/2019	13:20	0.15	0.041	0.13	<0.050	1.9	1.8	1.8
TMDL-Est	4/8/2019	14:15	0.17	0.013	1.3	0.059 (DNQ)	2.9	1.6	1.6
TMDL-R1	5/16/2018	11:00	0.044	0.022	0.59	0.49	1.4	1.3	0.84
TMDL-R1	6/7/2018	7:45	0.097	0.08	0.7	0.58	1.5	1.4	0.81
TMDL-R1	7/10/2018	7:45	0.18	0.16	0.64	0.68	2.1	2.2	1.5
TMDL-R1	8/15/2018	7:40	0.12	0.088	0.55	0.47	0.55	0.47	<0.083
TMDL-R1	9/5/2018	11:50	0.1	0.09	0.52	0.53	0.93	0.94	0.41
TMDL-R1	10/10/2018	10:40	0.13	0.12	0.57	0.47	1.5	1.4	0.89
TMDL-R1	11/19/2018	13:45	0.18	0.17	0.37	0.27	1.1	1	0.74
TMDL-R1	12/10/2018	11:05	0.16	0.17	0.64	0.44	1.8	1.6	1.2
TMDL-R1	1/10/2019	11:10	0.14	0.067	0.46	0.35	1.4	1.3	0.91
TMDL-R1	2/12/2019	12:00	0.19	0.044	0.11	0.2	2.1	2.2	2
TMDL-R1	3/13/2019	12:30	0.16	0.042	0.29	0.18	2.3	2.2	2
TMDL-R1	4/8/2019	13:15	0.03	0.011	0.28	0.26	1.9	1.9	1.6
TMDL-R2	5/16/2018	8:20	0.16	0.14	0.52	0.38	2.6	2.4	2
TMDL-R2	6/6/2018	13:10	0.36	0.27	0.75	0.28	2.8	2.3	2
TMDL-R2	7/9/2018	13:00	0.52	0.26	0.72	0.48	4	3.8	3.3
TMDL-R2	8/14/2018	11:15	0.26	0.24	0.63	0.57	2.5	2.5	1.9
TMDL-R2	9/5/2018	9:45	0.19	0.17	0.58	0.58	2.3	2.4	1.8
TMDL-R2	10/10/2018	9:30	1	0.57	0.85	0.66	4.1	4	3.3
TMDL-R2	11/19/2018	12:00	0.31	0.28	0.39	0.37	1.5	1.5	1.1
TMDL-R2	12/10/2018	10:00	0.14	0.14	0.29	0.31	1.1	1.1	0.77
TMDL-R2	1/10/2019	10:10	0.038	0.034	0.23	0.2	0.8	0.77	0.57
TMDL-R2	2/12/2019	10:50	0.16	0.042	0.13	<0.050	2.2	2.1	2.1
TMDL-R2	3/13/2019	11:30	0.14	0.036	0.13	<0.050	2.2	2	2
TMDL-R2	4/8/2019	12:20	0.037	0.027	<0.050	<0.050	2	2	2
TMDL-R3	5/15/2018	12:00	0.01	0.0072 (DNQ)	0.078 (DNQ)	0.068 (DNQ)	0.6	0.59	0.52
TMDL-R3	6/6/2018	11:05	0.069	0.031	0.39	0.16	0.71	0.49	0.33
TMDL-R3	7/9/2018	11:00	0.092	0.046	0.13	0.11	0.3	0.28	0.17 (DNQ)
TMDL-R3	8/14/2018	9:00	0.024	0.016	0.22	0.11	0.22	0.11	<0.083
TMDL-R3	9/5/2018	7:40	0.0081 (DNQ)	0.01	0.17	0.1	0.28	0.21 (DNQ)	0.11 (DNQ)
TMDL-R3	10/10/2018	8:25	0.021	0.018	0.063 (DNQ)	<0.050	0.18 (DNQ)	0.12 (DNQ)	0.12 (DNQ)
TMDL-R3	11/19/2018	10:40	0.014	0.01	0.083 (DNQ)	<0.050	<0.20	<0.20	<0.083

Site	Sample Date	Sample Time	P Total EPA 365.1 (mg/L)	P Diss EPA 365.1 (mg/L)	TKN Total EPA 351.2 (mg/L)	TKN Diss EPA 351.2 (mg/L)	N Total Calculated (mg/L)	N Diss Calculated (mg/L)	NO3+ NO2-N EPA 353.2 (mg/L)
TMDL-R3	12/10/2018	9:00	0.038	0.026	0.071 (DNQ)	0.073 (DNQ)	0.27	0.27	0.2
TMDL-R3	1/10/2019	9:10	0.04	0.018	0.15	<0.050	0.46	0.31	0.31
TMDL-R3	2/12/2019	10:00	0.17	0.035	0.2	<0.050	2.3	2.1	2.1
TMDL-R3	3/13/2019	10:40	0.12	0.031	<0.050	<0.050	2	2	2
TMDL-R3	4/8/2019	11:20	0.01	0.0068 (DNQ)	0.33	0.36	2.1	2.2	1.8
TMDL-R4	5/15/2018	8:05	0.0070 (DNQ)	0.0064 (DNQ)	<0.050	<0.050	1.5	1.5	1.5
TMDL-R4	6/6/2018	8:00	0.022	0.021	<0.050	<0.050	1.6	1.6	1.6
TMDL-R4	7/9/2018	8:40	0.055	0.049	0.15	<0.050	1.7	1.5	1.5
TMDL-R4	8/14/2018	8:00	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	9/4/2018	10:00	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	10/10/2018	7:50	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	11/19/2018	9:30	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	12/10/2018	8:25	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	1/10/2019	8:25	0.036	0.025	0.27	0.094 (DNQ)	0.72	0.54	0.45
TMDL-R4	2/12/2019	9:00	0.22	0.03	<0.050	<0.050	1.8	1.8	1.8
TMDL-R4	3/13/2019	9:15	0.028	0.012	0.12	<0.050	1.8	1.7	1.7
TMDL-R4	4/8/2019	9:20	0.013	0.0052 (DNQ)	<0.050	<0.050	1.8	1.8	1.8
TMDL-SA	5/15/2018	10:25	0.024	0.012	<0.050	<0.050	1.7	1.7	1.7
TMDL-SA	6/6/2018	10:20	0.032	0.028	<0.050	<0.050	1.6	1.6	1.6
TMDL-SA	7/9/2018	10:00	0.042	0.036	<0.050	<0.050	1.6	1.6	1.6
TMDL-SA	8/14/2018	8:20	0.029	0.017	0.076 (DNQ)	0.055 (DNQ)	0.42	0.39	0.34
TMDL-SA	9/4/2018	10:10	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	10/10/2018	8:00	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	11/19/2018	9:30	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	12/10/2018	8:35	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	1/10/2019	8:10	0.078	0.062	0.21	0.064 (DNQ)	0.42	0.27	0.21
TMDL-SA	2/12/2019	8:25	0.47	0.056	0.31	0.11	2.8	2.6	2.5
TMDL-SA	3/13/2019	8:45	0.13	0.04	0.32	<0.050	2.5	2.2	2.2
TMDL-SA	4/8/2019	9:55	0.019	0.0097 (DNQ)	0.19	<0.050	1.8	1.6	1.6
TMDL-CL	5/15/2018	14:00	0.024	0.032	0.83	0.65	0.83	0.65	<0.083
TMDL-CL	6/4/2018	13:30	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	7/10/2018	12:15	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	8/14/2018	13:30	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	9/4/2018	8:45	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	10/10/2018	10:15	DRY	DRY	DRY	DRY	DRY	DRY	DRY

Site	Sample Date	Sample Time	P Total EPA 365.1 (mg/L)	P Diss EPA 365.1 (mg/L)	TKN Total EPA 351.2 (mg/L)	TKN Diss EPA 351.2 (mg/L)	N Total Calculated (mg/L)	N Diss Calculated (mg/L)	NO3+ NO2-N EPA 353.2 (mg/L)
TMDL-CL	11/19/2018	13:20	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	12/10/2018	7:50	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	1/10/2019	7:25	0.078	0.017	0.56	0.48	0.56	0.48	<0.083
TMDL-CL	2/12/2019	7:30	0.72	0.095	1.3	0.9	2.8	2.4	1.5
TMDL-CL	3/13/2019	7:30	1	0.1	1.3	0.76	2.8	2.3	1.5
TMDL-CL	4/8/2019	8:10	0.022	0.0084 (DNQ)	0.51	0.44	0.51	0.44	<0.083

Nutrient levels show variation between sites, seasons, and years. Charts of results for total nitrogen and total phosphorus from the previous two years are included below for comparison.

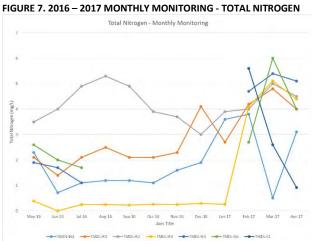






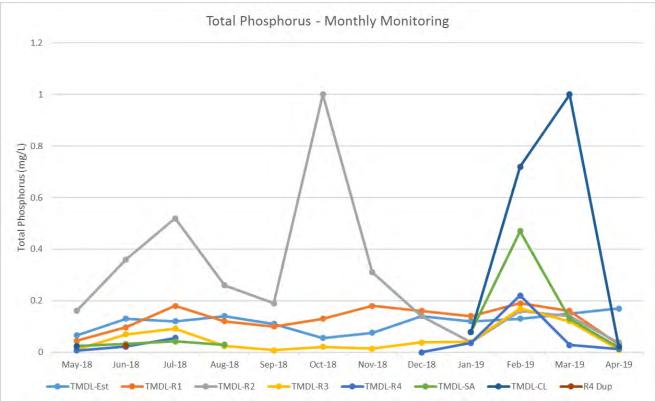
 Total Nitrogen - Monthly Monitoring

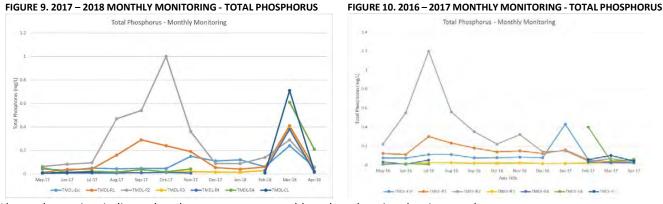
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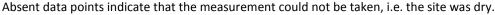


Absent data points indicate that the measurement could not be taken, i.e. the site was dry.









#### DRY SEASON MONTHLY ALGAE DATA

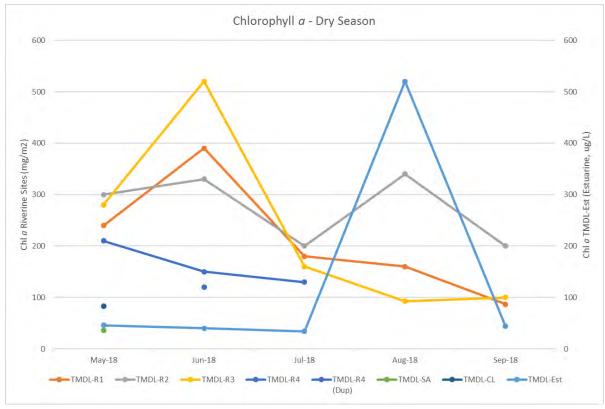
SWAMP protocol for riverine sites (specified by the TMDL) includes both suspended (floating) and attached (land-based) macroalgae for chlorophyll *a*, and only considers alive algae when determining percent cover. Riverine results are shown in Table 5 and Table 6. TMDL-SA and TMDL-CL met the riverine seasonal average numeric target for chlorophyll *a*. TMDL-R1, TMDL-R2 and TMDL-CL met the seasonal average numeric target for macroalgal cover. The other riverine sites did not meet the seasonal average numeric targets.

Bight '08 (estuarine) protocol (specified by the TMDL) measures algal cover on the shoreline as well as floating algae at a<br/>depth of 0.3 meters, and includes dead, desiccated, fresh, and intermediate algae in the protocol. The estuarine chlorophyll<br/>a sample is collected from the water column. The estuarine results are in Table 7. Site TMDL-Est exceeded the seasonal<br/>average numeric target for percent cover and phytoplankton biomass (chlorophyll a) in 2018.<br/>Ventura River Algae TMDLPage 13 of 27June 2019Annual ReportPage 13 of 27June 2019

Site	Date	Field Replicate	Number of Transects Collected	Chlorophyll <i>a</i>	Chlorophyll <i>a</i> units	Percent Presence Macroalgae (%)
TMDL-R1	5/16/2018	1	11	240	mg/m2	20.95
TMDL-R1	6/7/2018	1	11	390	mg/m2	8.57
TMDL-R1	7/10/2018	1	11	180	mg/m2	35.92
TMDL-R1	8/15/2018	1	11	160	mg/m2	14.29
TMDL-R1	9/5/2018	1	11	87	mg/m2	13.46
TMDL-R2	5/16/2018	1	11	300	mg/m2	61.22
TMDL-R2	6/6/2018	1	11	330	mg/m2	39.42
TMDL-R2	7/9/2018	1	11	200	mg/m2	14.85
TMDL-R2	8/14/2018	1	11	340	mg/m2	17.48
TMDL-R2	9/5/2018	1	11	200	mg/m2	16.67
TMDL-R3	5/15/2018	1	11	280	mg/m2	71.43
TMDL-R3	6/6/2018	1	11	520	mg/m2	64.08
TMDL-R3	7/9/2018	1	11	160	mg/m2	44.76
TMDL-R3	8/14/2018	1	11	93	mg/m2	50.48
TMDL-R3	9/5/2018	1	11	100	mg/m2	36.54
TMDL-R4	5/15/2018	1	11	210	mg/m2	55.24
TMDL-R4	6/6/2018	1	11	150	mg/m2	70.00
TMDL-R4	6/6/2018	2	11	120	mg/m2	NA
TMDL-R4	7/9/2018	1	9	130	mg/m2	75.56
TMDL-R4	8/14/2018	1	DRY	DRY	mg/m2	DRY
TMDL-R4	9/4/2018	1	DRY	DRY	mg/m2	DRY
TMDL-SA	5/15/2018	1	9	36	mg/m2	42.16
TMDL-SA	6/6/2018	1	DRY	DRY	mg/m2	DRY
TMDL-SA	7/9/2018	1	DRY	DRY	mg/m2	DRY
TMDL-SA	8/14/2018	1	DRY	DRY	mg/m2	DRY
TMDL-SA	9/4/2018	1	DRY	DRY	mg/m2	DRY
TMDL-CL	5/15/2018	1	11	83	mg/m2	15.38
TMDL-CL	6/4/2018	1	DRY	DRY	mg/m2	DRY
TMDL-CL	7/10/2018	1	DRY	DRY	mg/m2	DRY
TMDL-CL	8/14/2018	1	DRY	DRY	mg/m2	DRY
TMDL-CL	9/4/2018	1	DRY	DRY	mg/m2	DRY

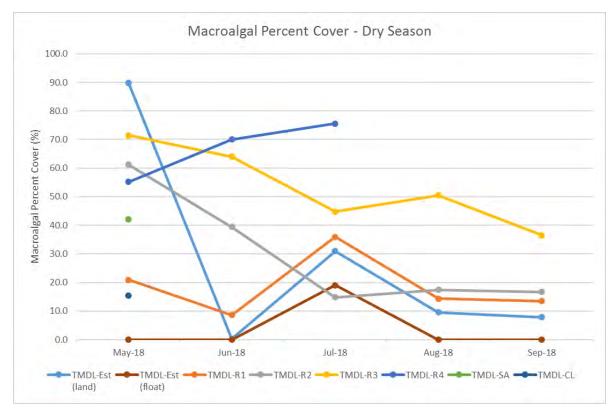
TABLE 5. 2018 DRY SEASON RIVERINE MONTHLY ALGAL BIOMASS (CHLOROPHYLL A) AND PERCENT MACROALGAL COVER

#### FIGURE 11. 2018 DRY SEASON - Chlorophyll a



Absent data points indicate that the measurement could not be taken, i.e. the site was dry.

FIGURE 12. 2018 DRY SEASON - MACROALGAL PERCENT COVER



Absent data points indicate that the measurement could not be taken, i.e. the site was dry.Ventura River Algae TMDLPage 15 of 27Annual Report

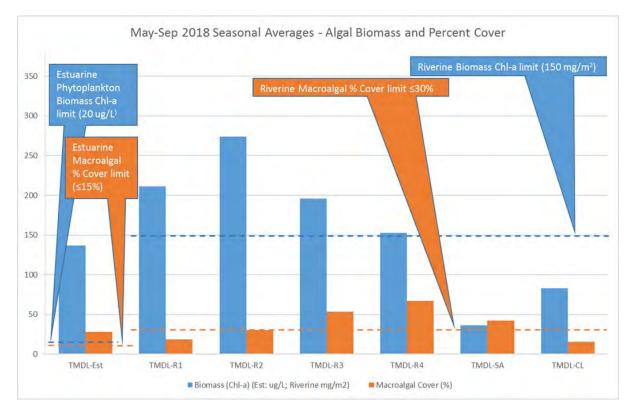
#### TABLE 6. 2018 DRY SEASON RIVERINE SEASONAL AVERAGES - MACROALGAL BIOMASS AND COVER

Site	Seasonal Average Biomass (Chlorophyll a)	Seasonal Average Macroalgal Cover						
	Numeric Target Seasonal Average 150 mg/m <sup>2</sup> (mg/m <sup>2</sup> )	Numeric Target Seasonal Average ≤ 30% (%)						
TMDL-R1	211	18.64						
TMDL-R2	274	29.93						
TMDL-R3	196	53.46						
TMDL-R4	153	66.93						
TMDL-SA	36	42.16						
TMDL-CL	83	15.38						

TABLE 7. 2018 DRY SEASON ESTUARINE MONTHLY ALGAL BIOMASS (PHYTOPLANKTON CHLOROPHYLL A) AND PERCENT MACROALGAL COVER

Site	Date	Field Replicate	Phytoplankton Biomass Chlorophyll <i>a</i> (µg/L)	Land-Based Macroalgal Cover (%)	Floating Macroalgal Cover (%)
Seasonal Ave	erage Numeric Target		20 μg/L	≤ 1	15%
TMDL-Est	5/16/2018	1	46	89.80	0.00
TMDL-Est	6/7/2018	1	40	0.27	0.00
TMDL-Est	7/10/2018	1	34	30.95	19.05
TMDL-Est	8/15/2018	1	520	9.59	0.00
TMDL-Est	9/5/2018	1	44	7.89	0.00
TMDL-Est	Seasonal Average		137	27.70	3.81

#### FIGURE 13. 2018 DRY SEASON SEASONAL AVERAGES - CHLOROPHYLL A AND MACROALGAL COVER



### FIELD OBSERVATIONS

TMDL-EST: Water level in the estuary fluctuates with the tides; it was very low in May and very high in July, probably related to tide height and sand berm status. Dogs are frequently seen in the water and birds (especially gulls) are always present. A red duckweed-type plant was growing in the estuary water in September. Dog feces and bird carcasses are occasionally seen in or near the water, including September 2018. Heavy flow from stormwater runoff in early 2019 breached the berms at the east and west ends of the estuary. From February 2019 – April 2019 the connectivity between the river and the east side of the estuary gradually decreased until the previously dominant channel through the east end of the estuary remained connected to the ocean but was no longer connected to the river flow. The river flowed only through the west end of the estuary and connected directly to the ocean. This resulted in a significantly different shape for the estuary for March and April 2019 compared to all previous CMP monitoring events (since January 2015).

TMDL-R1: The water level was too high to sample at the typical transect "A" location from July to September so the transects were moved about 25 meters upstream to shallower water. The lower section of this reach is frequently littered with washing materials and containers (e.g. soap, shampoo, laundry detergent, clothing, towels, etc.) and is commonly known as the "laundry site" due to its frequent use for that purpose by the homeless in the area. The Ventura Land Trust removes the items when it sees them and posts signs, as well as speaking with people directly about the hazards and illegal nature of washing in the stream, however most of the activity occurs when no one is around. The use is heavier in the summer months. The Ventura Land Trust plans to remove some of the vegetation in the area outside of nesting season and investigate funding and partnerships for starting an alternative laundry program for homeless people in the area. During the September event, a man was present in the area with a large sheathed knife strapped to his hip, but he left slowly after he saw the sampling team arrive. A similar man wearing a knife was in the area during the February event and he yelled/proselytized to the crew from across a ditch as they returned to their vehicle. In April, a self-described homeless man (with suspected recent methamphetamine use) approached the crew to request water testing of the river at his home in the riverbed upstream and became agitated when the crew explained they could not do that. Graffiti is common on the pylons under the Main Street bridge and a person was actively engaged in graffiti as the sampling crew passed by during the September event.

TMDL-R2: Several homeless camps are present on the private property in this area. Two camps are on the east bank among the Arundo. Evidence of washing (e.g. soap, shampoo bottles, etc.) are sometimes seen near the water. Some rocks have been moved to create some deeper sections for the camps. A small garden was observed in a cleared space on the river bank at one of the camps in August and in September the garden was fenced with small gauge chicken wire. There appeared to be an improvised toilet on the banks in August.

TMDL-R3: This site was moved approximately 100 meters downstream for February – April 2019 sampling since stormflow debris and high flows eliminated access to the previously sampleable section.

TMDL-R4: Another data collection sonde (short sonde inside PVC tubing) is frequently seen installed (by an unknown party) in the water near the monthly monitoring location/transect "A". The sonde monitoring appears to be ongoing. The site was moved approximately 200 meters downstream beginning in February 2019 after heavy storms redirected flow in the river bottom and prevented access to the previous location.

TMDL-SA: A natural spring tends to keep the area directly above the confluence with the Ventura River wet for most of the year, however upstream/influent flow dried out by June, and the area was too dry for sampling at all by September. Flow resumed in January following winter storms.

TMDL-CL: The sonde was loosely covered with camouflaging rocks when it was installed in May, however when the crew was onsite to perform the monthly monitoring approximately two weeks later, the rocks were gone and the sonde installation was visible but the sonde itself was embedded in sediment. Flow in the creek was minimal so the velocity could not have moved the rocks. The crew tried to remove the sediment, but it was quickly replaced. The data logging period ended several hours later and the sonde was collected the following day, as scheduled. Human interference with the sonde is suspected but

the timing of the presumed interference cannot be inferred from the data due to lack of support by all parameters. Fouling of the sonde tends to recur at this site due to the shallow nature of this stream. The sonde needs to be installed near the streambed to keep it submerged during deployment however the fine-grained substrate tends to bury the sensors. In April, a dead calf was present under the bridge (downstream of the sampling location) and a flock of turkey vultures were in a tree nearby (but out of the streambed).

### CONTINUOUS DATA LOGGING

Seven Hydrolab HL4 water quality data sondes (Figure 14) are used for this program. The HL4 has the ability to accurately measure and log DO, conductivity, pH and temperature within a self-contained package that is 1.75" in diameter and just over two feet in length, which allows it to fit inside a short length of protective housing of 2" diameter schedule 40 pipe. The data sonde installations are vulnerable to potential vandalism and theft and so need to be as inconspicuous as possible (i.e. below the water surface among rocks and tree roots). Each sonde is assigned to a particular TMDL site and is labeled with the site name for additional consistency between events. Pre and post calibrations and/or calibration checks are performed for each deployed sonde for each event.

#### FIGURE 14. HYDROLAB HL4 SONDE



Sondes were installed for continuous monitoring for pH, specific conductivity, temperature, and DO for a two-week period at all wet sites in May, September, and December 2018, and March 2019<sup>1</sup>. The sondes were programmed to begin logging data soon after deployment and continue logging for a little over two weeks to allow field staff to get concurrent field meter measurements during sonde retrieval to compare to the sonde data. After the first deployment in March 2015 when the estuary breached and left the estuary sonde exposed to potential vandalism or theft, the placement was redesigned to prevent exposure in the event of future breaches. However, the Estuary sonde is still subject to high flows during winter storms, which could cause the loss of the sonde and its data, therefore the Estuary sonde is removed when storms are forecast that have the potential to generate high flows. The estuary sonde went missing during the September 2017 deployment and is presumed stolen (flow remained steady/low during the deployment period). The estuary sonde deployed inside a housing designed to float at an approximately 45-degree angle and secured to a 20-foot, 3/8 inch diameter chain connected to a cinder block that is dropped on the estuary floor to prevent the sonde from migrating too far with any currents. This deployment strategy has been used as standard since 2017-Q4, however there was nowhere hidden to deploy the sonde in 2019-Q1, when the River was flowing directly to the ocean and not acting as an estuary, so the risk of theft was deemed too high to safely deploy the sonde this quarter. Sonde data for this reporting period are shown in Figure 15,

<sup>1</sup> The TMDL requires quarterly monitoring, including the months of May and September. Therefore, Quarter 2 (Q2) monitoring is conducted in May and Quarter 3 (Q3) monitoring is conducted in September. Quarter 1 (Q1) includes one event during January – March and Quarter 4 (Q4) includes one event during October – December.

Figure 16, Figure 17, and Figure 18.

2018-Q2 (May 2018): Seven Hydrolab HL4 water quality data sondes were installed and began logging data on May 1, 2018 at 19:00. The TMDL-R4 conductivity readings were in error for the first half of the deployment, however conductivity is not a required measurement at this site and the conductivity at this site (known from past measurements and as measured by the field meter check at retrieval) is low enough (~1,000  $\mu$ S) to not affect the other collected data<sup>2</sup>, so redeployment was unnecessary. The TMDL-CL conductivity sensor became fouled a third of the way through deployment and the DO sensor became fouled two thirds of the way through deployment, so readings are in error for those periods. There was insufficient flow for re-deployment at TMDL-CL. The affected data is not included in the charts. It is likely that stream flow decreased at TMDL-SA during deployment resulting in lower DO and conductivity levels as the composition of the water became more dominated by the natural spring at the site.

2018-Q3 (September 2018): Sondes were installed at four TMDL monitoring sites for continuous data logging (TMDL-R4, TMDL-SA, and TMD-CL were dry). The sondes were installed before the logging program began on September 12, 2018 and removed after two weeks of logging. The TMDL-R1 DO sensor became fouled partway through its deployment so the erroneous data is excluded from this report. Graphical representations of the continuous monitoring data are presented below.

2018-Q4 (December 2018): Sondes were installed at the TMDL-Est, TMDL-R1, TMDL-R2, and TMDL-R3 sites. The sondes were programmed to log from December 11, 2018 at 18:00 through December 26, 2018 at 18:00. TMDL-R4, TMDL-SA, and TMDL-CL were dry so sondes were not installed at these locations.

2019-Q1 (March 2019): Sondes were able to be deployed at all sites during this event except TMDL-Est, which was not deployed due to a very high risk of vandalism/theft resulting from heavy winter storms flushing out the camouflaging vegetation cover and reshaping the estuary to resemble a river mouth, eliminating all discreet locations for sonde deployment. Since this area gets a lot of pedestrian traffic, particularly from the homeless, and since the sonde already went missing once from this location (2017-Q3) it was decided to skip the deployment for this guarter. The deployed sondes logged data from March 13 at 19:00 to March 27 at 19:00. The TMDL-R2 pH readings drifted out of quality control specifications by the end of deployment due to sensor fouling. The TMDL-R3 pH readings were in error for full deployment due to a poor connection of a circuit board within the sonde resulting in data failure. The TMDL-R3 conductivity readings drifted out of specification by the end of deployment likely due to fouling. (Field meter at retrieval 1045 uS and sonde reading 610 uS.) Drift appears to begin at the start of deployment, but exact timing cannot be determined. TMDL-R4 conductivity readings may be too low. TMDL-SA conductivity readings are in error. The TMDL-CL conductivity and DO readings are in error for this deployment due to sensor fouling. The DO failure is suspected to have begun mid-deployment. The conductivity readings for TMDL-CL were high for this deployment in comparison to the field meter measurement taken during sonde retrieval, so are not included in the chart. Conductivity is not a required parameter at riverine sites so the sondes were not redeployed.

<sup>&</sup>lt;sup>2</sup> The conductivity measurement is used by the sonde when calculating DO, however the influence of conductivity on DO measurements for the conductivity levels seen at the TMDL riverine stations is negligible. Ventura River Algae TMDL Page 19 of 27

#### TABLE 8. MAY 2018 - APRIL 2019 SONDE DEPLOYMENT DATES

Site	2018 Quarter 2 (May*)	2018 Quarter 3 (September*)	2018 Quarter 4	
TMDL-Est	5/1 – 5/15	9/12 - 9/26	12/11 – 12/25	NA <sup>a</sup>
TMDL-R1	5/1 – 5/15	9/12 – 9/26 <sup>c</sup>	12/11 – 12/25	3/13 – 3/27
TMDL-R2	5/1 – 5/15	9/12 - 9/26	12/11 – 12/25	3/13 – 3/27
TMDL-R3	5/1 – 5/15	9/12 - 9/26	12/11 – 12/25	3/13 – 3/27 <sup>b,d</sup>
TMDL-R4	5/1 – 5/15 <sup>d</sup>	DRY	DRY	3/13 – 3/27 <sup>d</sup>
TMDL-SA	5/1 – 5/15	DRY	DRY	3/13 – 3/27 <sup>d</sup>
TMDL-CL	5/1 – 5/15 <sup>c,d</sup>	DRY	DRY	3/13 – 3/27 <sup>c,d</sup>

\* Month required by TMDL

<sup>a</sup> Sonde not deployed due to high risk of theft in current estuary (open river) condition.

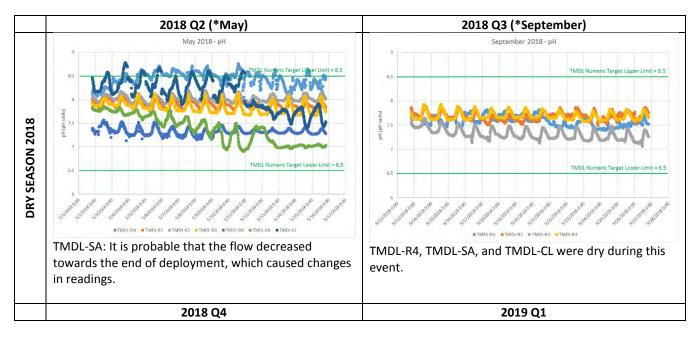
<sup>b</sup> pH readings in error because of a loose circuit board.

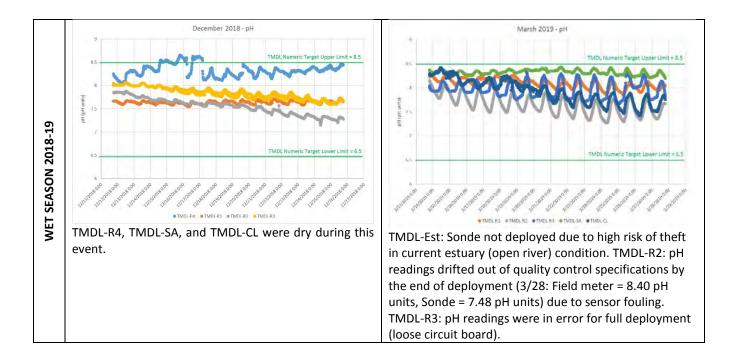
<sup>c</sup> DO sensor became fouled partway through deployment.

<sup>d</sup> Conductivity readings in error and/or sensor fouled partway through deployment.

Graphical representations of the continuous monitoring data are presented below.

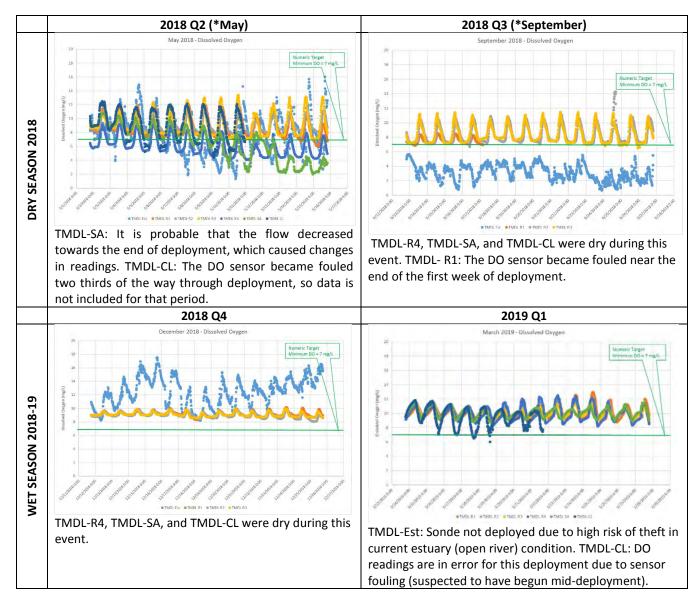
#### FIGURE 15. CONTINUOUS DEPLOYMENT SONDE DATA - PH





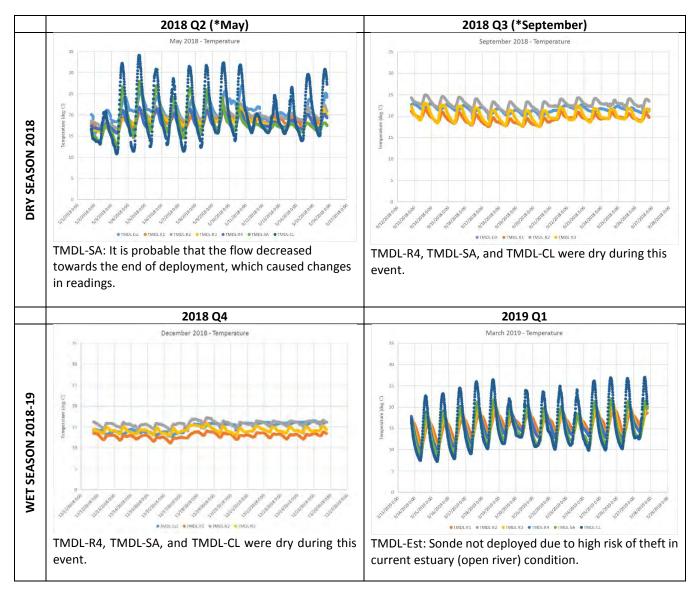
All continuous pH monitoring data for this reporting period was within the numeric target limits except for TMDL-Est and TMDL-CL in May 2018 and TMDL-Est in December 2018.

#### FIGURE 16. CONTINUOUS DEPLOYMENT SONDE DATA - DISSOLVED OXYGEN

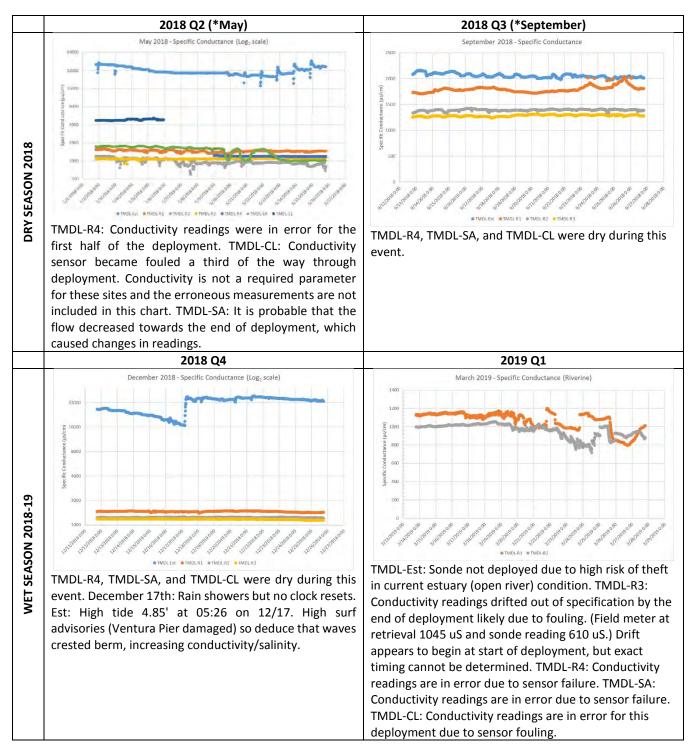


Low levels of DO (below the numeric target of 7 mg/L) were observed at most sites during the dry season deployments (May and September 2018), particularly at the low points of the diurnal variation. TMDL-CL also dipped below 7 mg/L during the low points of the diurnal variation in March 2019. All monitored sites were above the target in December 2018. Low DO appears to be generally associated with low flow, possibly due to the ponding of water upstream and/or at the measurement location. All sites exhibited diurnal variation in levels.

#### FIGURE 17. CONTINUOUS DEPLOYMENT SONDE DATA - TEMPERATURE



#### FIGURE 18. CONTINUOUS DEPLOYMENT SONDE DATA - SPECIFIC CONDUCTANCE



#### **OBSERVATIONS AND LESSONS LEARNED**

Southern California has been experiencing extreme drought conditions since before this monitoring program began (January 2015). During the drought, the Ventura River and its tributaries have been particularly dry, resulting in lost hydrological connectivity between the upper and lower watershed. While the drought is not yet over for Ventura County, the county received about average rainfall over the last two wet seasons (2017/18 and 2018/19) which helped reestablish flow in many creeks and streams that had been dry. However, as has been typical, there was no flow in the mainstem Ventura River downstream of the Santa Ana Bridge for the 2018 dry season monitoring (May – September 2018) and flow ceased in San Antonio Creek at TMDL-SA in June, resulting in a loss of connectivity with the upper watershed, as occurred during the dry season in 2015-2017. TMDL-SA would have been dry June-September if not for a small spring at the site. Connectivity between the upper and lower watershed was reestablished in January 2019, after a large storm passed through the area. The higher flows resulted in very turbid water in January, February, and March 2019, and unsafe conditions for flow measurement from February – April 2019. Flow is typically perennial downstream of Foster Park and the Casitas Vista Bridge observation point.

Flow variations between monitoring sites and events are likely due to a combination of factors, including geology, temperature, inputs, and extractions. Ponded locations, and those with shallow and/or slow-moving water appear to experience greater variation in measured levels of DO and so ponds are avoided where possible but may not be avoidable in all cases.

Siltation can be an issue in slow moving water and sondes are installed higher in the water column in areas where it is likely to occur, when possible. All sondes were checked and/or calibrated by monitoring staff before and after deployment, regardless of history, and field meter readings were taken in the vicinity of the sondes immediately prior to sonde removal to check/confirm that the sondes were still reading accurately in situ at the end of the deployment. Following the disappearance of the TMDL-Est sonde in September 2017, the method and location for deploying this sonde was modified to try to further reduce the potential for vandalism/theft.

Heavy storms in early 2019 postponed sonde deployment for all sites until March due to heavy flow. The storms also reshaped the estuary, separating the east end of the estuary from the river (Photo 1) but maintaining its connection to the ocean (Photo 2), eliminating the vegetation cover and drying out the location where the sonde had been able to be discreetly deployed during previous monitoring events (Photo 3), and causing the west end of the estuary to exhibit riverine and exposed characteristics. High pedestrian/homeless traffic in the area and the shape of the wet portion of the estuary combined to create a high risk of theft/vandalism of the sonde (Photo 4 and Photo 5), so the estuary sonde was not deployed in 2019-Q1 (March 2019).



Photo 1. East end of estuary looking inland towards the





Ventura River Algae TMDL Annual Report Photo 3. Former site of sonde deployment exposed and dry in 2019-Q1.



Photo 4. West end of estuary looking inland. Railroad bridge in foreground receives heavy pedestrian/homeless traffic.



Photo 5. West end of estuary looking to the ocean. Berm was fully breached in 2019-Q1 and estuary resembled a river mouth.



All monthly grab measurements for pH during this reporting period were within the numeric target limits of 6.5-8.5 pH units, except for TMDL-Est and TMDL-CL in May 2018. Similarly, all continuous data logger pH results were within limits except for TMDL-Est and TMDL-CL in May 2018, and TMDL-Est in December 2018, which experienced multiple excursions over 8.5, with the maximum value occurring during the May sonde deployment, of 8.77 for TMDL-Est and 8.79 for TMDL-CL.

Low levels of DO (below the numeric target of 7 mg/L) were observed frequently at sites with low flow for the monthly grab monitoring, particularly at TMDL-R4 and TMDL-SA, and during the dry season sonde deployments at almost all sites. The general association with low flow is possibly due to the ponding of water upstream and/or at the measurement location, as well as higher temperatures. Similar to 2017, DO levels below the numeric target were observed during the continuous monitoring at most sites during the May deployment, and again at the September deployment. All sites exhibited diurnal variation in levels. The lower levels during the diurnal cycles resulted in a few dips below the numeric threshold for TMDL-CL in March. All sites were above the DO threshold in December.

Specific conductance remained relatively stable at the riverine sites for the deployments during this reporting period. By comparison, TMDL-Est experiences much greater variability in conductivity both within and between deployments, likely due

to the interactions with the ocean through tides, diffusion, and berm breaches, however since it is infeasible to monitor the berm status for the entire duration of the sonde deployment, it is unknown when all breaches occur.

#### TABLE 9. EXCEEDANCES BY SITE AND MONTH

Sample Month	TMDL-Est	TMDL-R1	TMDL-R2	TMDL-R3	TMDL-R4	TMDL-SA	TMDL-CL
MAY 2018	DO (c) >pH (c) >pH (m)	DO (c)			DO (c) *	DO (c) * DO (m)	DO (c) * >pH (c) >pH (m)
JUN 2018					DO (m) *	DO (m) *	DRY
JUL 2018		DO (m)			DO (m) *	DO (m) *	DRY
AUG 2018			DO (m)	DO (m)	DRY	DO (m) *	DRY
SEP 2018	DO (c)	DO (c)	DO (c) DO (m)	DO (c) DO (m)	DRY	DRY	DRY
OCT 2018					DRY	DRY	DRY
NOV 2018					DRY	DRY	DRY
DEC 2018	>pH (c)				DRY	DRY	DRY
JAN 2019					DO (m) *	DO (m) *	
FEB 2019	DO (m)						
MAR 2019							DO (c)
APR 2019							
Seasonal Average	Chl <i>a</i> Macro cover	Chl a	Chl a	Chl <i>a</i> Macro cover	Chl <i>a</i> Macro cover	Macro cover	

Notes:

(m) is the monthly grab sample measurement

(c) is the continuously monitored sonde measurement

\* low flow conditions may have contributed to exceedance

Chl *a* is chlorophyll *a*, a measurement of algal biomass

Macro cover is macroalgal cover, a measurement of algal presence

### APPENDICES TO ANNUAL REPORT

The field data sheets, chain of custodies, and laboratory reports are provided as appendices to this report.

# TOTAL MAXIMUM DAILY LOAD FOR ALGAE, EUTROPHIC CONDITIONS, AND NUTRIENTS IN VENTURA RIVER, INCLUDING THE ESTUARY, AND ITS TRIBUTARIES (VR ALGAE TMDL)

# **2019 ANNUAL REPORT**

# APPENDIX A: FIELD DATA SHEETS (MAY 2018 - APRIL 2019)

Submitted to TMDL Responsible Parties Implementing Receiving Water Monitoring Requirements:

City of Ojai City of Ventura County of Ventura Ojai Valley Sanitary District California Department of Transportation Ventura County Agricultural Irrigated Lands Group Ventura County Watershed Protection District

Prepared by:

Ventura County Watershed Protection District June 1, 2019



# Ventura River Algae TMDL Event Details

vent ID (Month Year): 10/2018	Date: 5/15+5/16/18
rew Members: K.HAHS L. MEEKER J.	MANN
Veather (circle): (Clear) / Partly Cloudy / Overcast / Showers / I	
vent Type (check):	
□ Wet (days with $\ge 0.1$ " rain and the the lotes :	three days following)
Bedoner 410 # 110341139	

#### **OBSERVATION SITES (RIVER FLOW)**

Upstream / Downstream
V 1
Upstream / Downstream
Upstream / Downstream
Upstream / Downstream

# UNSAMPLED TMDL SITES

Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Reason not sampled (if flowing the second s	Flowing (Estimated Flow: cfs)	
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded /	Flowing (Estimated Flow: cfs)	
Reason not sampled (if flowing	ng):	
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
	Flowing (Estimated Flow: cfs)	
Reason not sampled (if flowin	ng):	
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
	Flowing (Estimated Flow: cfs)	
	g):	

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 2

# Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est							1	×								
Event ID (Month Year):	A7 20	810	-		-	Date:	5/16	18		125	5					
Crew Members: KH, LM, JN	0					_						-				
Weather (circle one): Cleary Partly Clou	dy / Over	cast / Rai	ny / Fogg	v	Ocean	Inlet (circ	le one):	Open	estricted	/ Closed	openw	restenct				
Direction of Tide: Ebb / Flood / Slack /										gh Tide:						
Wind Strength: Calm / Slight Breeze / M		Breeze /	Strong Br	eeze / W	/indv / St	rong Win	d		1 m		wingFrom	VTo W	1			
Notes (e.g. homeless, wildlife, dogs, swin	nming/rec	reation):	very					HS AN	on M	anitarity	plan w	eve no	+ record	ed		
TRANSECT 1		87 2	9-50	10-1	0	1										
In Situ Measurements (Measure at Float	ing Macro	algae Ou	adrat 1.	Transect	1)	-	-	Water	Samples	Collector	(check bo	av)	-	_		
Monthly (lan-Dec):								and the second second	and the second second		oalgae Qua		ansact 1]	100		
pH: 8.65 pH units 8.69 EC:	37.31 A	S/cm	Water 1	Temp: Z	2.7 .	c	1					uiut 1, II	ansect 1			
DO: 1202 mg/L SC: 3	9.08	S/cm						Monthly Water (Jan—Dec): Nitrogen, total and dissolved:								
DO: 160.6 % Salinity: 2	4-9 p	ot								tal and dis		7 94		·		
/ /			_	-		_				as Nitrog		2				
Photos: Oceanward Landward	d.	Start Tin	ne: 13	10	End Time	: 13:	09				, on ,	~				
Start Latitude: 34 · 27483		Start Lor	ngitude:			19.		1.000		ae (May–						
End Latitude: 34 - 27483		End Lon	gitude:	-119.	3073	5	-	Volume filtered per sample: 250m								
PVC Latitude:		PVC Lon	gitude:						une nite	leu per sa	inpie: 20		1			
				MAC	ROALGAE	-LAND B	ASED				FL	LOATING N	ACROALG	AE		
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4		
Distance (m)	1.64	4.46	8.87	10-40	14.74	19.84	23.21	25.71	27.40	29.50		-	-			
Water Depth (must be ≤ 0.3 m)	-				1	-	-				0.3			2		
Condition	Frsh	Frsh	Frsh	Frsh	Frsh	Frsh	Frsh	Ersh	Frsb	Frsh	Frsh	Frsh	Frsh	Frsh		
[Frsh=Fresh, Int=Intermediate,	Unt Des	(Int) Des	(nt) Des	Int	Int	Int	Int	Ersh	(Int)	Int	Int	Int	Int	Int		
Des=Dessicated, Dd=Dead]	Dd	Dd	Des	Des Dd	Des	Des	Des Dd	Des Dd	Des Dd	Des Dd	Des Dd	Des Dd	Des Dd	Des Dd		
No. Crosshairs with Macroalgae Present	21	24	28	42	38	45	45	49	47	47	0	0	0	0		
No. Crosshairs with Macroalgae Absent	28	25	21	7	11	ч	4	0	2	2	49	49	49	49		
Crosshair Total (must equal 49)	49	49	49	49	49	49	49	49	49	49	49	49	49	49		

## Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 2 of 2

Ventura River Algae TMDL- Estuary Transect Measurements Date: 5/16/18 Crew: KH LM JM

## TRANSECT 2

Photos: Oceanward Dandy	vard				St	art Time:	132	-0	2	End	Time: \	3:27		
Start Latitude: 34 - 27481					St	art Longi	tude: -	119.3	0740	ic.				
End Latitude: 34 · 27484			~		Er	nd Longit	ude:	-119 .	3076	2				
PVC Latitude:					P	VC Longit	ude:					1		
				MAC	ROALGAE	-LAND B	ASED				FI	OATING N	MACROAL	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	1.69	4.46	8.87	10.40	14-74	19.84	23.21	25-71	27.40	29.50	-			-
Water Depth (must be ≤ 0.3 m)	-		1	-							0.3		-	>
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Crsh Int Des Dd	Frsh Int Des Dd	Frsh Des Dd	Frsh Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Ersh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	49	47	40	49	49	46	46	48	40	42	0	0	0	0
No. Crosshairs with Macroalgae Absent	0	2	9	0	0	3	3	1	9	7	49	49	49	49
Crosshair Total (must equal 49)	49	49	49	49	49	49	49	49	49	49	49	49	49	49

## TRANSECT 3

Photos: Oceanward Aandw	vard				St	art Time:	1330	2		End	Time:	1336		
Start Latitude: 34.27487					St	art Longi	ude: _	119-3	0765					
End Latitude: 34:257 2751	3				Er	nd Longitu	ude: -	-119 -	3077	8				
PVC Latitude:					P	/C Longitu	ude:							
			- 5	MAC	ROALGAE	-LAND B	ASED	der ei			FL	OATING N	ACROAL	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	1.64	4.46	8.87	10-40	14.74	19.84	23-21	25-71	27.40	29.50	03		-	
Water Depth (must be ≤ 0.3 m)	-				-	1	-		-		0.3	-		-
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Ersh Int Des Dd	Ersh Int Des Dd	Ersh Int Des Dd	Frsh Int Des Dd	Ersh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	49	46	48	પલ	45	48	49	49	46	49	0	0	0	0
No. Crosshairs with Macroalgae Absent	0	3	1	0	4	Ţ	0	0	3	0	49	49	49	49
Crosshair Total (must equal 49)	49	49	49	49	49	49	49	49	49	49	49	49	49	49

Event ID (Month Year): MAY 2018
Site ID: R)
Date/Time: 51618 1100
Crew Members: KIL LM JM
AN I I
Latitude/Longitude: 34 .280 24 -119.30832
Flow (circle one): Flowing/ Ponded / Dry
Wind Strength:
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check): Upstream Downstream Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.) :
1
January—December Monthly In Situ Measurements
January-December Monthly In Situ Measurements: pH: \$35 pH units EC: 1506 uS/cm
pH: 8.35 pH units EC: 1506 µS/cm
pH: <u>\$.35</u> pH units EC: <u>150/a</u> μS/cm DO: <u>9.51</u> mg/L SC: <u>1719</u> μS/cm
pH: <u>\$.35</u> pH units EC: <u>1506</u> μS/cm DO: <u>9.51</u> mg/L SC: <u>1719</u> μS/cm DO: <u>102.0</u> % Salinity: <u><b>2.90</b> ppt</u>
pH: $5.35$ pH units EC: $1506$ µS/cm DO: $9.51$ mg/L SC: $779$ µS/cm DO: $102.9$ % Salinity: $2.90$ ppt Water Temp: $15.5$ °C
pH: $5.35$ pH units EC: $1506$ µS/cm DO: $9.51$ mg/L SC: $779$ µS/cm DO: $102.9$ % Salinity: $2.90$ ppt Water Temp: $15.5$ °C
pH: <u>\$.35</u> pH units EC: <u>1506</u> μS/cm DO: <u>9.51</u> mg/L SC: <u>1719</u> μS/cm DO: <u>102.9</u> % Salinity: <u><b>3.90</b> ppt</u> Water Temp: <u>/</u> <u>8.5</u> °C
pH: <u>\$.35</u> pH units EC: <u>1506</u> µS/cm DO: <u>9.51</u> mg/L SC: <u>7.99</u> µS/cm DO: <u>102.0</u> % Salinity: <u>0.90</u> ppt Water Temp: <u>/</u> <u>8.5</u> °C Flow (from discharge measurement): <u>3.73</u> cfs <u>Samples Collected (check box)</u> January-December Monthly Water:
pH: <u>\$.35</u> pH units EC: <u>1506</u> µS/cm DO: <u>9.51</u> mg/L SC: <u>719</u> µS/cm DO: <u>102.0</u> % Salinity: <u><b>3.90</b> ppt</u> Water Temp: <u>75.5</u> °C Flow (from discharge measurement): <u>3.73</u> cfs <u>Samples Collected (check box)</u> January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
pH: <u>S.35</u> pH units EC: <u>/506</u> µS/cm DO: <u>9.51</u> mg/L SC: <u>719</u> µS/cm DO: <u>102.0</u> % Salinity: <u>3.90</u> ppt Water Temp: <u>/S.5</u> °C Flow (from discharge measurement): <u>3.73</u> cfs <u>Samples Collected (check box)</u> January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):
pH: <u>\$.35</u> pH units EC: <u>1506</u> µS/cm DO: <u>9.51</u> mg/L SC: <u>719</u> µS/cm DO: <u>102.0</u> % Salinity: <u>0.90</u> ppt Water Temp: <u>75.5</u> °C Flow (from discharge measurement): <u>3.73</u> cfs <u>Samples Collected (check box)</u> January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
pH: <u>S.35</u> pH units EC: <u>/506</u> µS/cm DO: <u>9.51</u> mg/L SC: <u>719</u> µS/cm DO: <u>102.0</u> % Salinity: <u>3.90</u> ppt Water Temp: <u>/8.5</u> °C Flow (from discharge measurement): <u>3.73</u> cfs <u>Samples Collected (check box)</u> January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): <u>7</u> Dissolved Phosphorus and Nitrogen (field filtered): <u>7</u>
pH: <u>\$.35</u> pH units EC: <u>1506</u> µS/cm DO: <u>9.51</u> mg/L SC: <u>7.19</u> µS/cm DO: <u>102.0</u> % Salinity: <u>0.90</u> ppt Water Temp: <u>78.5</u> °C Flow (from discharge measurement): <u>3.73</u> cfs <u>Samples Collected (check box)</u> January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):

No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	8,30	0.50	0.11
2	10.00	0.75	0.23
3	11.50	08.0	0.33
4	13.00	0.85	0.53
5	14.50	0.80	0.42
6	16.00	0.60	0,53
7	17.50	0.70	0,54
8	19.00	0.50	0137
9	20.50	0-75	0.32
10	22,00	0,90	0.10
11	23.00	1.00	0.04
12	24.00	0.00	0.00
13			
14		4	
15	1		
16			
17	-		21
18			S
19			
20			

	Float 1	Float 2	Float 3
Distance (ft)	-		1
Float Time (sec)			1
Float R	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower
Width	-		
Depth 1	-		
Depth 2			
Depth 3			-
Depth 4		-	
Depth 5			

	X **
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm <sup>2</sup> )	4
PVC Delimiter (Area=12.6cm <sup>2</sup> )	7
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Ø
Other (Area= )	1
Number of Transects Sampled (0-11)	И.
Composite Volume (mL)	330
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Ventura River Algae TMDL Transect Measurements (for percent cover, May-September) Site: RI

Date: 5/16/18 Crew: HILM JM

		Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depth	n (mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	5	DA	50 A	TOA	45A	1014	t	0	1	0	$\checkmark$
AB	4.8	OA	52A	60A	31A	OA					
В	3.9	30A	30A	36A	SOA	OP	0	0		0	
BC	3.0	10 A	(200)	(BP)	(15P)	OA					
С	2.0	(OP)	SOP	SID	(9P)	(TOP)	6	0	5	2	
CD	2-15	OA	(19)	(25P)	(21P)	GA					
D	2.2	(00)	(25P)	24A	32A	OA	14	2	13	11	
DE	3.1	(OP)	150	26A	17A	12A					
E	4.9	OA	42A	19A	47A	10A	17	17	17	17	
EF	4.05	OA	SIA	55A	GOA	OA					
F	3.4	OA	6A	63A	53A	OA	9	7	3	1	$\checkmark$
FG	3.6	GA	45A	39A	32A	OA					
G	3.5	OA	48A	34A	35A	OA	17	17	17	17	
GH	4-4	OA	35A	37A	34A	OA					
Н	5.0	OP	(5P)	(200)	(210)	AO	7	2	10	5	
HI	5.0	OA	12A	49A	38A	OA			_		
1	2.5	OA	(BP)	GP	25A	OA	12	14	8	2	
IJ	2.5	OA	35A	36A	14A	OA					
1	3.0	OA	40A	47A	32A	OA	6	10	7	2	
JK	2-4	OA	45A	54A	50A	OA					-
K	.2.3	OA	ISA	(15P)	8A	OA	14	8	17	17	$\checkmark$

229 NOO

22/105

**Discharge Measurement** 

Event ID (Month Year): MAY 2018	
Site ID: R2	
Date/Time: 5/16/18 0820	
Crew Members: KH, LM, JM	
Latitude/Longitude: 34 . 33 930, -119, 29731	
Flow (circle one): Flowing/ Ponded / Dry Wind Strength:	
Calm) Light Breeze / Moderate Breeze / Strong Breeze / Windy	
Wind Direction: Blowing (circle one) From / To	
Photos (check): Upstream Downstream	
Notes (e.g. homeless, wildlife, horses, swimming/recreation	۱,
discharge comments, etc.) :	
	•
	•
	•
January-December Monthly In Situ Measurements:	
pH: 8.06 pH units EC: 1099 μS/cm	
DO: 7.42 mg/L SC: 1255 µS/cm	
DO: <u>79.2</u> % Salinity: <u>0.60</u> ppt	
Water Temp: 18.4 °C	
Flow (from discharge measurement): 3.35 cfs	
	_
Samples Collected (check box)	
January—December Monthly Water:	3
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	
Nitrogen (unfiltered):	
Nitrogen (unfiltered):	
Nitrogen (unfiltered):	

Buoy (Use only if velo	erred)	ethod (prefe	locity Area M	Ve
Distance (ft)	Velocity (ft/sec)	Depth (ft)	Distance from Left Bank (ft)	No.
Float Time (sec)	0.0.0	0,00	2.30	1
Float Re	0.01	0,50	4.00	2
	0.02	1.30	4.00	3
Width	80.0	1.20	8.00	4
Depth 1	0:05	1.50	10,00	5
Depth 2	0.07	1.30	12.00	6
Depth 3	0.62	1.05	14.00	7
Depth 4	1.02	0,50	16,00	8
Depth 5	0.33	0.60	18.00	9
May—September: A Reach Length (150 r	-0.10		21.00	10
f wetted width > 10	0 10	0.60	23,00	11
Collectio				12
(sum # transe				13
Rubber Delimiter (A				14
VC Delimiter (Area	1		1.0	15
Syringe Scrubber (A				16
Other (Area=				17
Number of Transect		_		18
Composite Volume		P 1	(	19
Chlorophyll <i>a</i> Volum use GF/F filter, 25 n			1.20	20

	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float Re	each Cross	Section (ft)	1
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			-
Depth 3			-
Depth 4			Pr.
Depth 5			-

May—September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): \_\_\_\_\_

Collection Device	Quantity
(sum # transects per Device) Rubber Delimiter (Area=12.6cm <sup>2</sup> )	3
PVC Delimiter (Area=12.6cm <sup>2</sup> )	8
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	ø
Other (Area= )	
Number of Transects Sampled (0-11)	4
Composite Volume (mL)	316
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
 R2
 Date:
 5/16/18
 Crew:
 KH, L

GOP

5

KH, LM, JM

		Macroalgae	Presence/Abs	sence (P/A) a	nd Water Depth	n (mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	6.2	OP	22A	(29P)	(200)	OA	1	8	15	9	$\checkmark$
AB	5.8	OA	(5P)	26A	2A	OA					
В	6.3	GP	DRY	(RIP)	(55P)	OA	7	õ	3	0	
BC	6.0	Inacci	55 (hunder	(25P)	(33P)	OP					
с	6.2	OA	OA	(16P)	(36P)	(OP)	15	6	3	0	
CD	5.6	OA	(18P)	(14P)	(GP)	OP	<u>.</u>				
D	5.3	00	GP	(PP)	(5P)	(15P)	17	14	2	11	
DE	6-7	OA	(29P)	(12P)	DRY	(OP)					
E	5.6	OA	(25P)	(17P)	DRY	OP	16	8	0	9	
EF	6.6	20A	(ISP)	(39P)	(40P)	OA					
F	6-4	OP	(SP)	(25P)	(30P)	OA	15	2	4	6	/
FG	6.3	OP	TTP	20P)	GP	(OP)					
G	6.2	OA	(42e)	(29P)	(28P)	(OP)	17	3	0	2	
GH	5.9	(OP)	(SP)	(4P)	200	OP					
н	8.2	OA	20A	DRY	(P)	OA	8	0	3	2	
HI	44	OA	(2P)	(14P)	19A	OA					
1	7.0	OA	(22P)	(HP)	SP	OA	11	2	0	3	
IJ	9.7	OA	DRY	(IOP)	5A	69					
ı	6.2	GA	392	37A	24A	15A	Marija	7	9	10	
JK	7.5	OA	45A	39 A	43A	OP	13				
К	6.4	OR	27A 7 dylin	(36P)	(26P)	20A	15	5	9	5	$\checkmark$

60/98

homeless comp

Discharge Measurement 1st Measurement = left bank (looking downstream)

Event ID (Month Year): MAY 2018
Site ID: P3 /
Date/Time: 5/15/18 / 1200
Date/Time: 5/15/18 / 1200 Crew Members: KH, JTM, DL
Latitude/Longitude: 34.34586, -119.29993
Flow (circle one): Flowing / Ponded / Dry
Wind Strength:
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From To
Photos (check): Dupstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.) :
January—December Monthly In Situ Measurements:
pH: 8128 pH units EC: 1069 ()cm
pH: 8.28 pH units EC: 1069 (µS)cm DO: 12-94 mg/L SC: 1152 (µS)cm
pH: 8-28 pH units EC: 1069 µS)cm DO: 12-94 mg/L SC: 1152 µS)cm DO: 144-8 % Salinity: 0-6 ppt
pH: 8.28 pH units EC: 1069 µS/cm DO: 12-94 mg/L SC: 1152 µS/cm DO: 144-8 % Salinity: 0-6 ppt Water Temp: 21.2 °C
pH: 8-28 pH units EC: 1069 µS/cm DO: 12-94 mg/L SC: 1152 µS/cm DO: 144-8 % Salinity: 0-6 ppt
pH: 8.28 pH units EC: 1069 µS/cm DO: 12-94 mg/L SC: 1152 µS/cm DO: 144-8 % Salinity: 0-6 ppt Water Temp: 21.2 °C
pH: 8.28 pH units EC: 1069 µS/cm DO: 12-94 mg/L SC: 1152 µS/cm DO: 144-8 % Salinity: 0-6 ppt Water Temp: 21.2 °C
pH: 8.28 pH units EC: 1069 µS/cm DO: 12-94 mg/L SC: 1152 µS/cm DO: 144-8 % Salinity: 0-6 ppt Water Temp: 21.2 °C
pH: $8.28$ pH units EC: 1069 $\mu$ s/cm DO: 12.94 mg/L SC: 1152 $\mu$ s/cm DO: 144-8 % Salinity: 0-6 ppt Water Temp: 21.2 °C Flow (from discharge measurement): 0.92 cfs
pH: 8.28 pH units EC: 1069 µS/cm DO: 12.94 mg/L SC: 11.52 µS/cm DO: 144-8 % Salinity: 0-6 ppt Water Temp: 21.2 °C Flow (from discharge measurement): 0.92 cfs
pH: 8.28 pH units EC: 1069 µS/cm DO: 12.94 mg/L SC: 1152 µS/cm DO: 144-8 % Salinity: 0-6 ppt Water Temp: 21.2 °C Flow (from discharge measurement): 0.92 cfs Samples Collected (check box) January-December Monthly Water:
pH: 8.28 pH units EC: 1069 µS/cm DO: 12.94 mg/L SC: 11.52 µS/cm DO: 144-8 % Salinity: 0-6 ppt Water Temp: 21.2 °C Flow (from discharge measurement): 0.92 cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
pH: 8.28 pH units EC: 1069 µS/cm DO: 12.94 mg/L SC: 1152 µS/cm DO: 144-8 % Salinity: 0-6 ppt Water Temp: 21.2 °C Flow (from discharge measurement): 0.92 cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): 7 Dissolved Phosphorus and Nitrogen (field filtered): 7
pH: 8.28 pH units EC: 1069 µS/cm DO: 12.94 mg/L SC: 1152 µS/cm DO: 144-8 % Salinity: 0-6 ppt Water Temp: 21.2 °C Flow (from discharge measurement): 0.92 cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):

Ve	elocity Area M	ethod (pref	erred)	
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)	
1	7.10	0.00	0.00	
2	8.00	0.50	-0,20	
3	9.00	0,60	-0,13	
4	10,00	0.75	0.02	
5	11.00	0.90	0,24	
6	12,00	0,40	0,30	
7	13.00	0,85	-0,04	
8	14,00	0,65	0,15	
9	15.00	0,90	0,23	
10	16.00	0.95	0.38	
11	17.00	1.00	0.28	
12	18,00	1.10	-0.04	
13	19.00	1.10	-0.09	
14	20,00	0.50	-0.09	
15	21.00	0.30	0,02	
16	22.00	0.60	0.02	
17	22.70	0.00	0.00	
18				
19				
20			1	

**Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float 2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5 May-September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): \_\_\_\_\_\_50 \_ Collection Device Quantity (sum # transects per Device) 0 Rubber Delimiter (Area=12.6cm<sup>2</sup>) PVC Delimiter (Area=12.6cm<sup>2</sup>) Ø Syringe Scrubber (Area=5.3cm<sup>2</sup>) Other (Area= ) Number of Transects Sampled (0-11) 11

Composite Volume (mL)

(use GF/F filter, 25 mL preferred volume)

Chlorophyll a Volume

390

25

Ventura River Algae TMD	Transect Measurements (for percent cover, May-September	er)

Site: K3 Date: 5/15/18 Crew: KH, DL, JM

eft Bank OP GA GP	(IP)	Center	Right Center	Right Bank		Conton		1	Photo (✓ when Taken)	
SA GP		(LP)			Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream	
60	(00)	JOL	(OP)	OA	0	2	2	0	R.	
	(98)	(15P)	ON 21P	OA						
AC	) 5P	6P)	210	OA	2	2	2	1		
UN	(37P)	(BP)	(4P)	OP						
OP	(18P)	OA	600	OA	5	16	12	6		
DA		(36P)	(54P)	OP						
OA	(5P)	(492)	STD	(OP)	3	0	9	0		
OP	) (30P)	(29P)	(430)	OA						
90	(1P)	(29°P)	320	GP	0	0	6			
18P)	) (38P)	(509)	(41P)	OA						
00)	(109)	TIP	(5P)	DA	17	17	17	17	~	
OP	20	(250)	P	(OP)						
OA	OP	DAR TP	(21P)	OA	5	8	12	5		
OA	0,0109	(18P)	90	OR						
OA	(30P)	60	4A	OA	0	6	12	2		
OP	(P) (P)	3A	OA	OA						
00	OP	2A	OA	OA	17	17	17	17		
OP	(19P)	262	16 A	OA						
00	OP.	(340)	(48P)	OA	5	1	5	5		
OP	(219)	(30P)	45A	OA						
90	(5P)	(19P)	(18P)	(OP)	3	3	8	2	$\checkmark$	
00	DD	P 21P P 5P	P 21P 30P P 5P 19P	P 21P 30P 45A P 5P 19P (18P)	P 21P 30P 45A OA P 5P 19P (18P OP)	P (21P) (30P) 45A OA P (5P) (19P) (18P) (OP) 3	P (21P) (30P) 45A OA P (5P) (19P) (18P) (0P) 3 3	P (21P) (30P) 45A OA P (5P) (19P) (18P) (OP) 3 3 8	P 21P 30P 45A 0A P 5P 19P (18P OP 3 3 8 2	

Discharge Measurement

-

1st Measurement = left bank (looking downstream)

Event ID (Month Year): MAY 2018	
Site ID: RY	
Date/Time: 5/15/18 0805	
Crew Members: KH, DL, SM	-
Latitude/Longitude: 34-38187, -119- 30916	2
Flow (circle one): (flowing) / Ponded / Dry Wind Strength:	
Calm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	
Photos (check): Dupstream Downstream	
Notes (e.g. homeless, wildlife, horses, swimming/recreati	on,
discharge comments, etc.) :	1
	-1
January—December Monthly In Situ Measurements: pH: 7.66 pH units EC: 898 µS/cm	
DO: 8-36 mg/L SC: 1070 µS/cm	
DO: <u>85-7</u> % Salinity: <u>0.5</u> ppt	
Water Temp: 16.6 °C	
Flow (from discharge measurement): 0.69 cfs	1
	-
Samples Collected (check box)	
January—December Monthly Water:	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	
Nitrogen (unfiltered):	
Dissolved Phosphorus and Nitrogen (field filtered): 🧏	
May—September Dry Season Monthly Algae:	

eli

No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)		
1	4.65	0.00	0.00		
2	5.00	\$1,50	0.23		
3	5.500	2,50	1.07		
4	4.00	03,00	1.03		
5	6.50	03.50	1,45		
6	7,00	03,00	0,72		
7	7.50	0,25	0.20		
8	8.00	0.00	0.60		
9					
10					
11			1		
12					
13	1	-	- 14		
14		-			
15		1			
16					
17					
18					
19					
20		-			

(Use only if velo		Method	1
	Float 1	Float 2	Float 3
Distance (ft)		/	
Float Time (sec)		/	
Float Re	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width	/		
Depth 1	/		
Depth 2	/		
Depth 3		1	
Depth 4			
Depth 5			
May-September:			
Reach Length (150 if wetted width > 10 Collecti	m if wetted 0 m): <u> </u> on Device	d width ≤ 10 50	
Reach Length (150 if wetted width > 10 Collecti (sum # transe	m if wetted 0 m): on Device ects per De	l width ≤ 10 50 vice)	) m; 250 m
Reach Length (150 if wetted width > 10 Collecti	m if wetted 0 m): on Device ects per De	l width ≤ 10 50 vice)	) m; 250 m
Reach Length (150 if wetted width > 10 Collecti (sum # transe	m if wetted 0 m): <u>\</u> on Device ects per De Area=12.6cr	l width ≤ 10 50 vice)	) m; 250 m
Reach Length (150 if wetted width > 10 Collecti (sum # transe Rubber Delimiter (A	m if wetted 0 m): <u>\</u> on Device ects per Device Area=12.6cm <sup>2</sup> )	l width ≤ 10 50 vice) n <sup>2</sup> )	) m; 250 m
Reach Length (150 if wetted width > 10 Collecti (sum # transe Rubber Delimiter (A PVC Delimiter (Area	m if wetted 0 m): <u>\</u> on Device ects per Device Area=12.6cm <sup>2</sup> )	l width ≤ 10 50 vice) n <sup>2</sup> )	) m; 250 m
Reach Length (150 if wetted width > 10 Collecti (sum # transe Rubber Delimiter (A PVC Delimiter (Area Syringe Scrubber (A	m if wetted 0 m): <u>\</u> on Device ects per Device area=12.6cm <sup>2</sup> ) area=5.3cm <sup>2</sup>	d width ≤ 10 50 vice) n <sup>2</sup> ) 2) )	) m; 250 m
Reach Length (150 if wetted width > 10 Collecti (sum # transe Rubber Delimiter (A PVC Delimiter (Area Syringe Scrubber (A Other (Area=	m if wetted 0 m): <u>\</u> on Device ects per Device area=12.6cm <sup>2</sup> ) area=5.3cm <sup>2</sup> ts Sampled	d width ≤ 10 50 vice) n <sup>2</sup> ) 2) )	) m; 250 m

Ventura River Algae TMDL Transect Measurement	s (for	percent cover	, May-September)	
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Sité: <u>R4</u> Date: <u>S/15/18</u> Crew: <u>KH, DL, JM</u>

	m	Macroalgae	Presence/Abs	sence (P/A) a	nd Water Depti	h (mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	5.6	QD	16A	39A	29A	OA	2	0	0	0	$\checkmark$
AB	6.1	GP	19A	(370)	(13 P)	60					
В	5.0	OP	-23A	Gal	35 A	OA	0	1	6	0	
BC	4.8	OA	IIA	(24P)	HEA21F	DOA					
С	5.05	GP	9P	(BP)	(SP)	OA	0	2	1	0	
CD	7.00	OA	GIP	(32P)	20 A	AO					
D	4.6	OP	(139)	33 A	ZQA	OA	17	17	17	17	
DE	2-4	OA	2A	2A	5P	OA					
E	3.0	OA	5A	-15A	(IZP)	OA	17	17	17	17	
EF	5.0	OP	9P.	OP)	OA	AO			-		
F	8.4	OP	JOD	(OP)	(BP)	OA	0	0	-0	0	$\checkmark$
FG	8.0	OA	(16P)	(6P)	(219)	OA					
G	7.0	OA	(22P)	310	(18P)	OA	0	Q	0	0	
GH	5.0	(OP)	(33P)	(43P)	28A	OA.					
н	5.0	OA	(29P)	(29 P)	(36p)	(OP)	0	0	0	0	
HI	4.25	OA	(32P)	(35P)	(34P)	OA					
1	3.8	OA	(SP)	(SP)	(ISP)	OA	0	1	0	2	
IJ	2.55	OA	(16P)	600	(26P)	OP					
1	5-0	OA	IA	(IP)	(13P)	B	0	D	0	0	
JK	5-0	OA	IA	(5P)	SP	GP)					
K	6.0	OA	IOA	(184)	(13P)	69	14	5	4	9	$\langle \rangle$
~	Ŧ	58	P		58/105						

**Discharge Measurement** 

avent in (month I	ear): MAY 2018
Site ID:	SA
Date/Time: 5/1	5/18 1025
Crew Members:	
Latitude/Longitude: _	34-38075, -119-30735
Flow (circle one): Flo	owing / Ponded / Dry
Wind Strength:	
	derate Breeze / Strong Breeze / Windy
Wind Direction: Blowi	ng (circle one) From / To
	pstream 🗆 Downstream
	wildlife, horses, swimming/recreation,
discharge comments,	etc.): Ponded (dry upstram
	91
11	
pH: <u>7-25</u> pH unit DO: <u>4-54</u> mg/L <sup>4-1</sup> DO: <u>47-2</u> % 4 <sup>7-5</sup> Water Temp: <u>17-3</u>	alinity: 0-5 ppt
pH: <u>7-25</u> pH units DO: <u>4-54</u> mg/L DO: <u>47-2</u> % 47.8 Water Temp: <u>17-3</u> Flow (from discharge r	SC: <u>875</u> SC: <u>1026</u> alinity: <u>0-5</u> ppt _°C measurement): <u>0-0</u> cfs
pH: 7-25 pH units DO: 4-54 mg/L DO: 47-2 % 47 S Water Temp: 17-3 Flow (from discharge r	EC: 875 05/cm SC: 1024 05 cm alinity: 0-5 ppt _°C measurement): cfs
pH: 7-25 pH units DO: 4-54 mg/L DO: 47-2 % 47 S Water Temp: 17-3 Flow (from discharge r Samples Collected (ch January-December N	EC: 875 S/cm SC: 1024 JS/cm alinity: 0.5 ppt _°C measurement): cfs eck box) Monthly Water:
pH: 7-25 pH units DO: 4-54 mg/L DO: 47-2 % 47 S Water Temp: 17-3 Flow (from discharge r Samples Collected (ch January—December M Total Phosphorus , Tot	EC: 875 05/cm SC: 1024 05 cm alinity: 0-5 ppt _°C measurement): cfs
pH: 7-25 pH units DO: 4-54 mg/L DO: 47-2 % 47 S Water Temp: 17-3 Flow (from discharge r Samples Collected (ch January-December M Total Phosphorus , Tot Nitrogen (unfiltered):	EC: 875 S/cm SC: 102 B/cm alinity: 0-5 ppt _°C measurement): cfs eck box) Monthly Water: tal Nitrogen, and Nitrate + Nitrite as
pH: 7-25 pH units DO: 4-54 mg/L DO: 47-2 % 47 S Water Temp: 17-3 Flow (from discharge r Samples Collected (ch January-December M Total Phosphorus , Tot Nitrogen (unfiltered):	EC: 875 S/cm SC: 1024 JS/cm alinity: 0.5 ppt _°C measurement): cfs eck box) Monthly Water:
pH: 7-25 pH units DO: 4-54 mg/L DO: 47-2 % 47 S Water Temp: 17-3 Flow (from discharge r Samples Collected (ch January-December M Total Phosphorus , Tot Nitrogen (unfiltered): Dissolved Phosphorus	EC: 875 S/cm SC: 102 B/cm alinity: 0-5 ppt _°C measurement): cfs eck box) Monthly Water: tal Nitrogen, and Nitrate + Nitrite as

Ve	locity Area N	lethod (prefe	erred)	Buoy (Use only if vel	ant Object		4
No.	Distance from Left	Depth (ft)	Velocity (ft/sec)	Distance (ft)	Float 1	Float 2	
_	Bank (ft)		(10/300)	Float Time (sec)	-	/	+
1	4.6	0	0		1.0/	V	L
2	5.2	0.2	-0-67	Float R	-	Section (ft)	) Г
3	5-6	0.2	0.10	1	Upper Section	Middle Section	
4	6.0	0.2	0.06	Width	/		
5	6.3	0.2	0.01	Depth 1		1	
6	6.4	0	0	Depth 2			
7				Depth/3			
8				Depth 4			
9	-	-	-	Depth 5			
10				May—September: Reach Length (150 if wetted width > 1	m if wette		
12	5.			Collect	ion Device		1
13				(sum # trans	ects per De	evice)	
14				Rubber Delimiter (/	Area=12.6c	m²)	
15	1 -1			PVC Delimiter (Area	a=12.6cm <sup>2</sup> )		
16				Syringe Scrubber (A	Area=5.3cm	2)	1
17				Other (Area=		)	
18				Number of Transec	ts Sampled	(0-11)	
19				Composite Volume	(mL)		
20		1-10		Chlorophyll <i>a</i> Volur (use GF/F filter, 25		ed volume)	

#### 1st Measurement = left bank (looking downstream) **Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float/2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5 May-September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): \_\_\_\_\_150 **Collection Device** Quantity (sum # transects per Device) 5 Rubber Delimiter (Area=12.6cm<sup>2</sup>) 4 PVC Delimiter (Area=12.6cm<sup>2</sup>) Syringe Scrubber (Area=5.3cm<sup>2</sup>) Ø Other (Area= } 9 Number of Transects Sampled (0-11) 288 Composite Volume (mL) Chlorophyll a Volume 25

Ventura	<b>River</b> Alg	ae TMDL Transect Measur	rement	s (for	percent cover, May-	September)
Site:	SA	Date:	5/15	18	Crew:	1KH .0

SA	Date: 51	15/18	Crew:	KH OL	JM

		Macroalgae	Presence/Abs	sence (P/A) ar	nd Water Depti	h (mm/ft/in)			eter (0-17) overed dots	· · · · ·	Photo (✓ when Taken)	
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream	
Α	3.7	OA	(12P)	TP	5A	OP	15	12	7	9		1 1
AB	3.0	(00)	7A	12A	13 A	(OP)						1 wet
В	2.15	(OP)	OA	IA	OP	OA	17	17	17	17		1
BC	1.25	(OP)	400	(12P)	SA	OP						water 1
с	0.8	60	OD	(OP)	62	(OP)	17	16	17	17		danp
CD	1.40	(0e)	DRY	OP.	DRY	OA		-				dead almost
D	<0.5	(OP)	OBRY	(00)	COD	00	10	- 11	6	7)		algoe loge
DE	1-0	(OP)	OP	OP	OP	0P						dampgreund
E	5.0	OA	OA	OA	OA	GP)	2	0	4	4		
EF	9.0	69)	DRY	OA	AO	OA						X
F	1.25	OA	OP	1A	QD	OA	0	4	9	3		wett
FG	0.9	OA	2P	(P)	(0P).	OP)						
G	2-1	(90)	6A	(2P)	(2P)	(OP)	0	0	3	0		
GH	2.1	OA	25 A	12A	4A	OA			-			
н	1.0	OP	8A	AOI	7A	OP	4	0	3	3		
н	4.5	OA	OA	OA	TA	AO						
I	1.3	OA	6A	13A	24 A	OA	13	15	17	17		
IJ	1.5	AO	1A	6A	14A	OA						
J	1.6	OA	4A	50	4A	oA	8	15	17	17		
JK	2.5	AO	IA	ZA.	IA	OA						
к	1-25	OA	IA	OA	OA	OA	12	17	16	16	$\checkmark$	N/

303 43 P

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Discharge Measurement 1st Measurement = left bank (looking downstream)

Event ID (Month Year): MAY 2013
Site ID: CL
Date/Time: 5/15/18 1400
Crew Members: KH DL, JM
Latitude/Longitude: 34.34204 -119.28646
Flow (circle one): Flowing / Ponded / Dry Wind Strength:
Calmy Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check): Upstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.): Soude installation usible
and embedded in sediment. they that
been covered w/ wets when first
installed. Remarcil scheduled for tomorran
Timed preneaver it but sediment and in Yourd
January-December Monthly In Situ Measurements: gund
pH: 8-73 pH units EC: 4169 uS/cm it
DO: 10-58 mg/L SC: 3709 µS/cm
DO: 144-6 % Salinity: \9 ppt
Water Temp: <u>31-4</u> °C
Flow (from discharge measurement): 0.035 cfs
Samples Collected (check box)
January—December Monthly Water:
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
Nitrogen (unfiltered):
Dissolved Phosphorus and Nitrogen (field filtered):
May-September Dry Season Monthly Algae:
Chlorophyll a (filters—algae):

No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1			/
2	1	/	
3	1	/	
4		/	-
5	1	/	
6		/	
7		/	
8			-
9	/		
10	1		
11	E		
12	/		
13	/		
14			
15/			
16			
17			
18			
19			

**Buoyant Object Method** (Use only if velocity area method not possible) Float 1 cm Float 2 Float 3 100 100 Distance (ft) 100 26 24 Float Time (sec) 27 Float Reach Cross Section (ft) Upper Middle Lower cm Section Section Section 90 85 Width an 100 BB 3-9 0 0 Depth 1 0 2 3 3 Depth 2 2 4 5 Depth 3 5 5 6 Depth 4 0 0 0 Depth 5 May-September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m):

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm <sup>2</sup> )	4
PVC Delimiter (Area=12.6cm <sup>2</sup> )	7
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Ø
Other (Area= )	
Number of Transects Sampled (0-11)	1/
Composite Volume (mL)	340
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	26

 
 Ventura River Algae TMDL Transect Measurements (for percent cover, May-September)

 Site:
 CL
 Date:
 5
 15
 18
 Crew:
 ICH
 D
 JW

		Macroalgae	Presence/Abs	sence (P/A) a	nd Water Dept	n (mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	05	OA	0.05A	2A	(P)	OA	2	0	11	2.2.1	/
AB	1.05	OA	GA	DRY	ZA	OA					
В	0.75	GA	OA	TP	OA	ÔA	0	0	0	0	
BC	0.5	OA	20	(P)	(1P)	00)					
с	0.6	OA	OP	2P)	IA	AO	0	0	0	0	
CD	0.9	60	0.05A	2A	(0.05P	60					
D	1-7	OA	3A	GA	IA	OP	1	0	0	0	
DE	1-4	OA	OA	IA	OA	OA					
E	1-25	OA	3A	5A	64	DA	3	3	0	0	
EF	0.6	GA	6A	5A	SA	QA					
F	0.85	IA	2A	IA	OA	OA	ч	3	0	0	~
FG	6.33	OA	OA	OA	OA	OA					
G	5.9	OA	60	OA	20A	OA	2	0	σ	0	
GH	3.3	OA	2A	OA	IA	OA					
Н	1.5	OA	6A	GA	4A	OA	0	0	1	0	
HI	2-2	GA	2A	OA	OA	OAA					
.1	1.5	OA	2A	2A	2A	ØA	0	0	0	0	
IJ	0.95	0A	5A	OA	69	OA					
1	1.00	OA	3A	4A	4A	OA	14	5	0	7	-
JK	0.6	GP	TP	(3P)	IA	OA					
К	1-25	OA	30 1A	GA	3A	OA	14	5	0	5	

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## Ventura River Algae TMDL Event Details

EVENT DETAILS	Data: 6/6/18+1/7/18
vent ID (Month Year): JUNE 2018 vrew Members: K. HAHS, D. LAAK, B. JONB (6)	Lale TAALAL (CITIE
Veather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / O	ther
vent Type (check):	
$\Box$ Wet (days with $\geq 0.1"$ rain and the three day	
lotes: A Field Dups at RH	ys following)
VSI 85 # 03D0379	
Becking 240 # 2554	
255	
DESERVATION SITES (RIVER FLOW) WB CAREY 6/4/18	5
/entura River at Highway 150 (Baldwin Road)	
low Status ( Dry) Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Notes:	
/entura River at Santa Ana Blvd	1 /
low Status : Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
lotes:	
/entura River at Casitas Vista Road	
low Status : Dry / Ponded / Flowing (Estimated Flow: <u>2</u> cfs)	Photos Taken: Upstream / Downstream
lotes: Flawing east side	
dditional Observation Site:	
low Status : Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
lotes:	
NSAMPLED TMDL SITES WB CAREY 6/4/18	
	Photos Takon Unstand / David
te ID: Time:3:30 ow Status : Dry Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
eason not sampled (if flowing):	
otes:	
	Concernent and the state of the second se
te ID: Time:	Photos Taken: Upstream / Downstream
ow Status : Dry / Ponded / Flowing (Estimated Flow: cfs)	
ason not sampled (if flowing):	

Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
	ded / Flowing (Estimated Flow: cfs	
Reason not sampled (if	flowing):	
Site ID:	Time:	Photos Taken: Upstream / Downstream
	ded / Flowing (Estimated Flow: cfs	
Reason not sampled (if	flowing):	
Notes:		

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 2

## Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est		
Event ID (Month Year): JUNE2018	Date: 6/7/18	0945
Crew Members: KH, DL, JM		
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle one): Open (Restricted) Close	d
Direction of Tide: Ebb / Flood / Slack / N/A	Time of Low Tide: 1115 Time of High Tide	
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze /	Vindy / Strong Wind Wind Direction: 1	
Notes (e.g. homeless, wildlife, dogs, swimming/recreation):		

## TRANSECT 1

In Situ Measurements (Measure at Floating M           Monthly (Jan—Dec):           pH:         8-42         pH units         EC:         7180           DO:         11-02         mg/L         SC:         7670           DO:         128-6         %         Salinity:         4-2	_ μS/cm Water Temp: <u>22-1</u> °C _ μS/cm	Water Samples Collected (check box)         [Collect at Floating Macroalgae Quadrat 1, Transect 1]         Monthly Water (Jan—Dec):         Nitrogen, total and dissolved:         Phosphorus, total and dissolved:         Nitrate + Nitrite as Nitrogen:
Photos: Moceanward Randward	Start Time: 0940 End Time: 0945	
Start Latitude: 34-27471	Start Longitude: -119-30699	Dry Season Algae (May—Sep):
End Latitude: 34-27474	End Longitude: -119- 30730	Chlorophyll a (phytoplankton): 54 Volume filtered per sample: 250
PVC Latitude:	PVC Longitude:	volume intereu per sample:

	-			MAC	ROALGAE	-LAND B	ASED				F	LOATING N	DATING MACROALGAE			
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4		
Distance (m)	0.6	3.9	5.6	6.1	9.6	11.7	13.0	22.1	23.7	299	-					
Water Depth (must be ≤ 0.3 m)	-			-					-		0.3	-				
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Des Dd															
No. Crosshairs with Macroalgae Present	2	0	0	0	0	0	0	0	0	0	D	0	0	0		
No. Crosshairs with Macroalgae Absent	47	49	49	49	49	49	49	49	49	49	49	49	49	49		
Crosshair Total (must equal 49)	49	49	49	49	49	49	49	49	49	49	49	49	49	45		

## Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 2 of 2

Ventura River Algae TMDL- Estuary Transect Measurements Date: 6/7/18 Crew: KH, JM

12.

### TRANSECT 2

Photos: Soceanward Schandy	5	start Time:	00	150		End	d Time: 0955							
Start Latitude: 34-27470						Start Longitude: -119-30737								
End Latitude: 34-27475						End Longitude: -119-30763								
PVC Latitude:					F	VC Longitu								
				MAG	ROALGA	E-LAND B	ASED				F	LOATING	ACROALG	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	0.6	3.9	5.6	61	9.6	11.7	13.0	22-1	23.7	29.9				-
Water Depth (must be ≤ 0.3 m)	-	-				-					0.3			
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int. Des Dd	-Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	0	1	0	0	0	D	1	0	0	0	0	0	0	0
No. Crosshairs with Macroalgae Absent	49	48	49	49	49	49	48	49	49	49	49	49	49	49
Crosshair Total (must equal 49)	49	49	49	49	49	49	49	49	49	49	49	49	49	49

## TRANSECT 3

Photos: De Oceanward	ward				St	Start Time: 0957 End Time: 1000									
Start Latitude: 34-27492	/				St	Start Longitude: -119. 30766									
End Latitude: 34-27506						End Longitude: -119 - 30777									
PVC Latitude:					P	VC Longitu	ude:								
				MAG	CROALGAE	-LAND B	ASED	-			F	LOATING N	MACROALGAE		
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4	
Distance (m)	0.6	3.9	5.6	6.1	9.6	117	130	22.1	23-7	29.9	-	-		-	
Water Depth (must be ≤ 0.3 m)		-				-		-	-		0.3			_	
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	
No. Crosshairs with Macroalgae Present	0	0	0	0	0	0	0	0	0	0	D	0	0	0	
No. Crosshairs with Macroalgae Absent	49	-	-		1					9	49	49	49	49	
Crosshair Total (must equal 49)	49	-						-		>	49	949	49	49	

Event ID (Month Year):UNE 2018
Site ID: R1
Date/Time: 6/7/18 0745
Crew Members: KH, DL, JM
Latitude/Longitude: 34-28016 -119-30836
Flow (circle one): Flowing/ Ponded / Dry Wind Strength:
Calm) Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check): Dystream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.) :
January-December Monthly In Situ Measurements:
pH: 8-37 pH units EC: 1056.5µS/cm
DO: <u>9,22</u> mg/L SC: <u>1794</u> µS/cm
DO: <u>/09.0</u> % Salinity: <u>0.90</u> ppt
Water Temp: <u>18,3</u> °C
Flow (from discharge measurement): 2-69 cfs
Samples Collected (check box)
January—December Monthly Water:
Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as
Nitrogen (unfiltered):
Dissolved Phosphorus and Nitrogen (field filtered): 🧏
and the second se
May—September Dry Season Monthly Algae:
May—September Dry Season Monthly Algae: Chlorophyll <i>a</i> (filters—algae):

Ve	elocity Area M	lethod (pref	erred)	
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)	
1	8.0	0.00	0.00	
2	8.5	0.50	6.12	
3	9.5	0.50	0.18	
4	10.5	0.75	80.0	
5	11,5	0.70	0.29	
6	12.5	0.60	0.48	
7	13,5	0.80	0.44	
8	14.5	0.80	0.49	
9	15.5	0.70	0.32	
10	16.5	0.60	0.31	
11	17,5	0.60	0,34	
12	18.5	0.60	0.28	
13	19.5	0.40	0.27	
14	20.5	0.70	0.30	
15	21.5	0.80	0.11	
16	22.5	0.90	0.07	
17	23.5	0.80	0,00	
18	24.0	0.00	0.00	
19				
20				

Discharge Measurement 1st Measurement = left bank (looking downstream)

Buoy (Use only if velo	ocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)	_		
Float Time (sec)			
Float R	each Cross	Section (ft)	)
2	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2	-		
Depth 3			
Depth 4			
Depth 5	19-13		× (*

May—September: Algae Collection for Chlorophyll *a* Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): 150 m

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm <sup>2</sup> )	8
PVC Delimiter (Area=12.6cm <sup>2</sup> )	3
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Ø
Other (Area= )	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	500
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	25

#### Ventura River Algae TMDL Transect Measurements (for percent cover, May-September)

		Macroalgae	6/7	ence (P/A) a	nd Water Dept	(mm/ft/in)		Densiom	eter (0-17)		Photo
_		macroalgac		ence (F/A) a		(nany icy in)		Count co	vered dots		(✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	4.7	OA	50 A	89 A	55A	GA	10	6	9	0	$\checkmark$
AB	4.5	OA	48A	54A	39A	5A					
В	3.15	OA	4A	37A	41A	19A	0	0	3	1	
BC	1-7	OA	20A	20A	22A	13A					
С	1.6	10A	13 A	22A	2.7 A	19A	8	6	9	1	
CD	1.5	OA	25A	7A	24A	2A					
D	2=0	OA	15A	15 A	35A	6A	15	14	13	8	
DE	4.5	OA	33A	32 A	45A	10A					
E	4.5	OA	60A	65A	45A	5A	17	15	3	13	
EF	3.6	AO	49A	67A	46A	SA				-	
F	3-4	OA	25A	HOA	HIA	5A	17	17	17	17	$\checkmark$
FG	4-5	(OP)	30A	36A	17A	P					
G	6.5	(OP)	IOA	NA	13A -	(2P)	9	3	8	9	
GH	3.45	(OP)	16A	37A	24A	2A					
• <b>H</b> • *	2.65	OA (	20P	37A	35A	(P)	12	4 :	8	7	
HI	4.0	(OP)	HOA	55A	46 A	3A	1				
1	3.75	OA	348A	46A	8Å	2A	17	16	16	8	
IJ	3.8	64	27A	31A	37A	FA					
J	2.05	OA	30A	47A	NA	IA	17	16	15	14	
JK	2.4	OA	25 A	33A	29A	3A		-			
к	3-3	OP.	30A	41A	45A	3A	17	14	13	17	

9/105

Event ID (Month Year):
Site ID: R2
Date/Time: 6/6/18 1310
Crew Members: KH, DL, BJ
Latitude/Longitude: <u>34.33945</u> -119.29723 Flow (circle one): Flowing/ Ponded / Dry Wind Strength: Calm Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To Photos (check): Upstream Downstream Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :
$\begin{array}{c} \hline \hline \textbf{January-December Monthly in Situ Measurements:} \\ pH: \underline{8.22}  pH units  EC: \underline{1238}  \mu S/cm \\ DO: \underline{9.15}  mg/L  SC: \underline{1327}  \mu S/cm \\ DO: \underline{101.5}  \%  Salinity: \underline{0.7}  ppt \\ Water Temp: \underline{21.5}  ^{\circ}C \\ Flow (from discharge measurement): \underline{3.26}  cfs \\ \hline \end{array}$
Samples Collected (check box)
January—December Monthly Water:
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen (field filtered):
May—September Dry Season Monthly Algae:
Chlorophyll a (filters—algae):

Ve	elocity Area M	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	3	0	0
2 /	6	1.20	-0.05
3	7.5	1.40	0.01
4	9.0	1.00	-0.02
5	10.5	1.45	0.03
6	12.0	1.50	0.24
7	13.5	1.15	0.48
8	15.0	1.00	0.81
9	16.5	0.45	0.85
10	18.0	0.55	0.20
11	19.5	0.75	-0.06
12	21.5	0.25	-0.07
13	23.6	0	4
14			
15			
16			
17			
18	2		
19			
20	-	3 I	

Discharge Measurement 1st Measurement = left bank (looking downstream) Buoyant Object I

	Float 1	Float 2	Float 3
Distance (ft)			0.1
Float Time (sec)			
Float R	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1	• .	1	
Depth 2			
Depth 3			
Depth 4			
Depth 5	1000		

Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): \_\_\_\_\_

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm <sup>2</sup> )	0
PVC Delimiter (Area=12.6cm <sup>2</sup> )	4
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	7
Other (Area= )	
Number of Transects Sampled (0-11)	11
Composite Volume (mL)	520
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	25

 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
 R2
 Date:
 6/6/18
 Crew:
 KH, DL

		Macroalgae	acroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in) Densiometer (0-17) Count covered dots			Photo (✓ when Taken)					
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	5.5	OP	(J4P)	25A	(16P)	(2.9)	4	2	15	9	1
AB	5.0	(OP)	GP	(26P)	DRY	OA	2		_		
В	4.0	OA	25A	28A	35A	GP	6	5	9		
BC	3.5	(OP)	(98)	GP	(19P)	(OP)					
с	6-5	OA	(17P)	OP	(8P)	OP	17	17	3	4	
CD	6-5	OA	(20P)	IA	24A	OA					
D	8.0	ØA	240	15A	(OP)	OA	17	15	4	15	
DE	8.0	OA	47A	34A	(12P)	OA					
E	8-0 (	(30P)	36A	30A	37A	8A	178	8	0	8	
EF	6.5	OA	(25P)	30A	35A	OA					
F	5.5	OA	46A	(30P)	40A	OA	17	13	7	4	/
FG	7.5	OA	34A	(IIP)	600	OA				_	
G	6.0	OA	SP	(22P)	(DP)	60	.9	17	0	1	
GH	6.0	OA	(25P)	(20P)	(20P)	OA					
н	6.0	00)	(SP)	(IOP)	24A	(OP)	7	2	5	1	
HI	8-0	OA	(2P)	AP	(POP)	2A					,
1	7.0	-OA	39A	24A	27A	3A	17	12	11	15	
IJ	6.2	OA	7A	(24P)	48A	ÓA					
1.4	6.0	OA	(ISP)	31A	18 A	OA	15	6	6	5	
JK	6.0	OA	40A	47A	35A	OA					
к	4.2	OA	55A	58A	35A	3A	17	17	15	17	$\checkmark$

comp

41 104

2

Event ID (Month Year): JUNE2018
Site ID: B3
Date/Time: 6/6/18 1105
Crew Members: KH BT DL
Latitude/Longitude: <u>34.34580</u> -119.29984 Flow (circle one): Flowing / Ponded / Dry Wind Strength: Calim / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To Photos (check): Upstream Downstream Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :
January—December Monthly In Situ Measurements:         pH:       § 00       pH units       EC:       1063       μS/cm         DO:       § 109       mg/L       SC:       1176       μS/cm         DO:       95.0       %       Salinity:       0.10       ppt         Water Temp:       20.0       °C         Flow (from discharge measurement):       0.80       cfs
Samples Collected (check box)
January—December Monthly Water:
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
Nitrogen (unfiltered):
Dissolved Phosphorus and Nitrogen (field filtered):
May—September Dry Season Monthly Algae:
Chlorophyll a (filters—algae):

Ve	Velocity Area Method (preferred)									
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)							
1	6.3	000	0							
2	6.5	0.2	0.07							
3	6.8	0.2	-0.05							
4	7.0	Ð	Ð							
5	8.3	Ð	0							
6	8.5	0.2	0.4							
7	9.0	0.2	-0,15							
8	10.D	0.7	-0.01							
9	11.0	0.7	0.19							
10	12.0	0.4	0.21							
11	13.0	0.35	0.04							
12	14.0	1.0	-0.23							
13	15.0	0.9	0.44							
14	16.0	1.0	0.12							
15	17.0	0.95	0.14							
16	18.0	1.0	0.07							
17	19.0	0.5	0.15							
18	20.0	0.35	10.01							
19	21.0	0.7	0							
20	21.6	0.5	0.01							

**Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float 2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width . Depth 1 Depth 2 Depth 3 Depth 4 Depth 5

 May—September: Algae Collection for Chlorophyll a

 Reach Length (150 m if wetted width ≤ 10 m; 250 m

 if wetted width > 10 m):

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm <sup>2</sup> )	θ
PVC Delimiter (Area=12.6cm <sup>2</sup> )	2
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	9
Other (Area= )	
Number of Transects Sampled (0-11)	-11
Composite Volume (mL)	402
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

Discharge Measurement 1st Measurement = left bank (looking downstream)

 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
 R3
 Date:
 6/6/18
 Crew:
 KH, DL

-

cie d		Macroalgae	Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)					Densiometer (0-17) Count covered dots			
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	7.0	(OP)	P	60	3P	(2P)	2	1	6	2	1
AB	7.0	(OP)	(9P)	(6P)	(15P)	OA					
В	10.0	OA	(9P)	(IOP)	(DP)	IA	4	4	7	0	
BC	10-8	OA	(230)	5P	20A	(20)					
с	10.0	OA	15A	IOA	(36P)	(P)	17	16	17	16	
CD	7.5	GA	(8P)	(270)	(30P)	(P)					
D	4.5	GP	34 A	(36P		(15P)	6	3	14	2	
DE	6.5	OP	(140)	(OP)	(28P)	20P)					
E	5-0	OA	(28P)	(41P)	(HIP)	GA	8	4	13	[	
EF	5-5	(OP)	4A	14A	EIP	IA					
F	4.5	OP	(3P)	20A	(IP)	2A	6	3	11	2	~
FG	3.8	OA	20	16A	(24P)	IA					
G	3.8	OA	GP	(80)	(ISP)	2A	8	10	17	8	
GH	3.0	OA	DRY	(9P)	8A	2A					
н	4-3	OP	(190)	(16P)	(15P)	NACCE	16	16	16	13	
HI	80	P	00	(14P)	IIA	2A					
1	6.0	GP	OP	28A	30A	Im 2A	17	17	17	12	
IJ	6.5	OP	(30P)	(33P)	(59P)	2A					
1	5-0	OP	TIP	(29P)	ZIA	(3P)	9	1	15	2	
JK	5.5	(OP)	15A	(PP)	(OP)	5A					
K	6.7	(90)	15A	(24 P)	ITA	3A	2	15	17	9	

66,

Discharge Measurement 1st Measurement = left bank (looking downstream)

Event ID (Month Year): JUNE 2018	_
Site ID: R4	12
Date/Time: 6/6/18 0800	-
Crew Members: KH, DL, 35	No
Latitude/Longitude: 34-38176 -119.30914	1
Flow (circle one): Flowing) Ponded / Dry	-
Wind Strength:	2
Calm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	3
Photos (check): QUpstream Downstream	4
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	
discharge comments, etc.): Field dups taken.	5
	6
	7
	8
January-December Monthly In Situ Measurements:	9
pH: 7.48 pH units EC: 912 µS/cm	10
DO: <u>6.12</u> mg/L SC: <u>1060</u> µS/cm	11
DO: <u>644</u> % Salinity: <u>0.5</u> ppt Water Temp: <u>17.7</u> ℃	-
Flow (from discharge measurement): 0.24 cfs	12
now (nom discharge measurement).	13
	14
Samples Collected (check box)	15
January—December Monthly Water:	-
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16
Nitrogen (unfiltered):	17
Dissolved Phosphorus and Nitrogen (field filtered):	18
May-September Dry Season Monthly Algae:	19
Chlorophyll a (filters-algae): $\not = ( \overrightarrow{+} \overrightarrow{+} \overrightarrow{+} \overrightarrow{+} \overrightarrow{+} \overrightarrow{+} \overrightarrow{+} \overrightarrow{+}$	20

4

No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	5.6	0	0
2	6.3	0.2.12	0.12
3	6.6	0.25	0.60
4	6.9	0.3	0.46
5	7.2	0.3	0.51
6	7.5	0.35	0.46
7	7-9	0.3	0.42
8	8.3	0.3	-0.01
9	8.8	0.2	-0.10
10	9.1	0	0
11			
12			
13	1 - 7		
14			
15	-5	4	
16		4.	
17			
18			
19	-		
20	1	-	

**Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float 2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth 2 . Depth 3 Depth 4 Depth 5

May-September: Algae C	collection for Chlorophyll a
Reach Length (150 m if we	etted width ≤ 10 m; 250 m
if wetted width > 10 m):	150

Collection Device (sum # transects per Device)	Quantity	a
Rubber Delimiter (Area=12.6cm <sup>2</sup> )	1	2
PVC Delimiter (Area=12.6cm <sup>2</sup> )	10	8
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Ð	1
Other (Area= )		
Number of Transects Sampled (0-11)	11	11
Composite Volume (mL)	404	26
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25	25

)

		Macroalgae	Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)					Densiometer (0-17) Count covered dots				
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream	
Α	7.3	(OA)	(20A)	46 P	DRY	Inacc	0	0	2	0	1	
AB	5-3	(OA)	(14A)	33P	26P	59						
В	5.5	(AD)	24P	378	25P	IP	A	0	0	0		
BC	4.8	OP	270	32P	30P	31P						
с	4-9	(00)	IOP	219	308	(5A)	0	Ó	8	0		
CD	5.0	OP	ILP	69	78	(IOA)						
D	6.0	COA	209	278	148	(JA)	0	15	0	1		
DE	5-7	(OA)	GID	(24A)	(YA)	(Inacc)						
E	2.15	(OA)	DRY	(5A)	(7A)	(OA)	17	17	17	15		
EF	3.7	(OA)	GA	(4A)	(AP)	(OA)						
F	4.75	OP	OP	SP	GA	(OA)	13	17	14	6	$\checkmark$	
FG	8.7	OP	110	OP	104	(OA)						
G	8.0	OP	228	18P	19 P	OP	0	0	0	0		
GH	7.5	OP	30P	218	218	GA						
Н	7.0	GA	28 P	289	248	(2A)	0	0	0	0		
HI	5.5	(OA)	100	35P	34P	(GA)						
1	4.0	OP	HIP	308	SIP	(3A)	0	0	0	0		
IJ	4.2	GA)	(OA)	DRY	219	(OA)						
1 4	3.0	OP	169	24 P	238	TP	0	0	3	0		
JK	3.0	OP	198	1P	13 P	OP						
к	3.5	OP	13 P	110	9P	2p	0	0	0	0	V	

105=35=70

70 100

Ve	locity Area M	lethod (prefe	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	4.0	0	0
2	4-3	0.25	-0.07
3	4.6	0.25	0.06
4	5.0	0.25	0.14
5	5.4	0	0
6			
7	. 10	100	1 ET
8	1	and the	
9	1		2
10		a constant	
11	in	1.000	12
12	No.		
13			
14			
15			
16		110	
17			
18			
19	0.0000		7
20			

Buoy (Use only if velo	ant Object		ossible)
	Float 1	Float 2	Float 3
Distance (ft)		/	
Float Time (sec)		/	
Float Re	each Cross	Section (ft)	)
-	Upper Section	Middle Section	Lower Section
Width	1		
Depth 1	-		
Depth 2			
Depth 3			
Depth 4			
Depth 5			
	m if wetter ) m): on Device	d width ≤ 1	
(sum # transe			1
Rubber Delimiter (A		/	
VC Delimiter (Area	=12.6cm <sup>2</sup> )	1-	-
Syringe Scrubber (A	rea=5.3cm	2	
Other (Area=	/	)	

Number of Transects Sampled (0-11)

(use GF/F filter, 25 mL preferred volume)

Composite Volume (mL)

Chlorophyll a Volume

### Discharge Measurement

1st Measurement = left bank (looking downstream)

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 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
 SP

 Date:
 Crew:

		Macroalgae	Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)					Densiometer (0-17) Count covered dots			
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α					/				/		
AB				/							
В				/		-					
BC					1						
с				A		/ /				1.	
CD		/		R	0	/	1				
D		/	V	A							
DE	/		R	00	/	5.					
E	/	2t	X	Y I	/				1.00		
EF	/	Dr	35	/	1	7					
F /	mo		0	/							
FG	N	A	/								
G	68	1									
GH	5										
н		/								1.0	
HI		/									
1	4										
IJ											
J.	1										
JK											
К							1				

## Ventura River Algae TMDL Event Details

EVENT DETAILS Event ID (Month Year):	JULY 2018	Date: 7/9/18 + 7/10/8
Crew Members:	HAHS, L. MEEKER, J.MANN,	B. JONES
	/ Partly Cloudy / Overcast / Showers / Rain / Ot	
Event Type (check):	✓Dry (<0.1" rain per day for the preceding th □ Wet (days with ≥0.1" rain and the three day	
Notes : YSI 85 #	t 05E1126	
Beckman	410 # 130240875	

a dilata conti a con
Photos Taken: Upstream / Downstream
Photos Taken: Upstream / Downstream
- 64:
Photos Taken: Upstream / Downstream
Photos Taken: Upstream / Downstream

UNSAMPLED TMDL SITES	< 10 C (1)	
Site ID:	Time: 7/10/18 / 1215	Photos Taken: Upstream / Downstream
Flow Status : Dry Ponded / Flowing	g (Estimated Flow: cfs)	
Reason not sampled (if flowing):	and the second	
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Site ID: Flow Status : Dry / Ponded / Flowing	g (Estimated Flow: cfs)	
Reason not sampled (if flowing):		
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing	g (Estimated Flow: cfs)	instruction (between the second second second
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing	(Estimated Flow: cfs)	
Reason not sampled (if flowing):		
Notes:		
		· · · · · · · · · · · · · · · · · · ·

## Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 2

#### Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est				
Event ID (Month Year): 2018	Date:	7/10/18	010	
Crew Members: KH LM , BJ				
Weather (circle one): Clear / Partly Cloudy Overcast/ Rainy / Foggy	Ocean Inlet (circle	one): Open / Restricted	Closed	
Direction of Tide: Ebb / Flood / Slack (N/A)		13 36 Time of H		
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / V			ction: Blowing From) To	J
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): 2 St. Bence				~?)
	. 00	9	J	/

## TRANSECT 1

Situ Measurements (Measure at Floating M           Monthly (Jan—Dec):           bH:         8.06 pH units         EC: 472.0           co:         8.34 mg/L         SC: 453.0           co:         106.9 %         Salinity: 2.44	e_μS/cm Water Temp: 27-2_°C	Water Samples Collected (check box)         [Collect at Floating Macroalgae Quadrat 1, Transect 1]         Monthly Water (Jan—Dec):         Nitrogen, total and dissolved:         Phosphorus, total and dissolved:         Nitrote 1 Nitrote 2 Nitro
Photos: Cceanward Dandward	Start Time: 1008 End Time: 1017	Nitrate + Nitrite as Nitrogen: 🛩
Start Latitude: 34, 27451	Start Longitude: -119.30698	Dry Season Algae (May—Sep):
End Latitude: 34.27447	End Longitude: -119:30726	Chlorophyll a (phytoplankton): Y Volume filtered per sample: 250
PVC Latitude:	PVC Longitude:	volume intereu per sample. 200

	11 -	MACROALGAE—LAND BASED							FLOATING MACROALGAE						
Quadrat	1	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	4.7	8.4	9.8	14.7	16.2	17.6	26.0	27.7	28.7	29.8		1			
Water Depth (must be $\leq 0.3$ m)				-			-				0.3		-	-	
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Des Dd	Ersh Int Des Dd	Ersh Int Des Dd	Frsh Int Des Dd	Ersh Int Des Dd	Ersh Int Des Dd	Ersh Int Des Dd	Ersh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	
No. Crosshairs with Macroalgae Present	38	17	2	2	4	4	0	0	1	1	49	49	6	8	
No. Crosshairs with Macroalgae Absent		1	1.5.5		1.00			1			0	0	43	41	
Crosshair Total (must equal 49)	49 -	-								-7	49	49	49	49	

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## Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 2 of 2

Ventura River Algae TMDL- Estuary Transect Measurements Date: 710/18 Crew: KH, BJ

## TRANSECT 2

Photos: Cceanward Alandward							Start Time: 1020 End Time: 1029									
Start Latitude: 34-27451					1.1	Start Long	itude:	-119.	.307	37				1.11		
End Latitude: 34-27462						End Longit	tude:	-119:	3076	7						
PVC Latitude:						PVC Longi										
	· · · · ·			MAG	CROALO	GAE-LAND	BASED				FL	OATING N	ACROALG	AE		
• Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4		
Distance (m)	47	8.4	9.8	14.7	116	2 17.6	26:0	27.7	28.7	29.8						
Water Depth (must be ≤ 0.3 m)				-	-	-		-			0.3		-	$\rightarrow$		
<b>Condition</b> [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Ersh Int Des Dd	Ersh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Erst Int Des Dd	Int	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd		
No. Crosshairs with Macroalgae Present		8	4	2	2	8	25	14	27	21	0	0	0	0		
No. Crosshairs with Macroalgae Absent							12				49			3		
Crosshair Total (must equal 49)	49	49			-						49					
TRANSECT 3 Photos: Cceanward Cland	ward				-	Start Time	: 103	2		Enc	Time:	1041				
Start Latitude: 34.27470						Start Long		-119-	3070	20		1 - 11		1.1		
End Latitude: 34-2749	7					End Longit			307							
PVC Latitude:						PVC Longi	tude:	1.1								
	1		-	MAG	CROALG	AE-LAND	BASED				FL	OATING N	ACROALG	AE		
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4		
Distance (m)	4.7	8.4	9-8	14-7	16:3	2 17.6	26.0	27.7	28-7	29.8						
Water Depth (must be ≤ 0.3 m)					-	-					0.3		-	7		
<b>Condition</b> [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Int Des	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd		
No. Crosshairs with Macroalgae Present	48	16	15	33	34	26	35	15	25	27	0	0	0	0		
No. Crosshairs with Macroalgae Absent	1						111				49 -			$\rightarrow$		
Crosshair Total (must equal 49)	49-	-			-				-	>	49					

Event ID (Month Year): JULY 2018
Site ID: R1
Date/Time: 7/10/18 0745
Crew Members: KH, LM BT
1 1
Latitude/Longitude: 34.28041 -119-30846
Flow (circle one): Flowing Ponded / Dry
Wind Strength:
Calm Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check): @ Upstream @ Downstream Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.): Lord @ A V.hi ah had h
more upstreen, totay is bededutabore
freeway (High trac 8:42 Am, Invide 13:36)
January - December Monthly In Sity Measurements
January-December Monthly In Situ Measurements:
pH: 7,77 pH units EC: 1092 µS/cm
pH: <u>7.77</u> pH units EC: <u>169.3</u> μS/cm DO: <u>6.42</u> mg/L SC: <u>1742</u> μS/cm
pH: $7.77$ pH units EC: $169.2 \mu$ S/cm DO: $6.42 mg/L$ SC: $1742 \mu$ S/cm DO: $76.1 \%$ Salinity: $0.9 \mu$ pt Water Temp: $23.3 \%$
pH: $7.77$ pH units EC: $169.2 \mu$ S/cm DO: $6.42 mg/L$ SC: $1742 \mu$ S/cm DO: $76.1 \%$ Salinity: $0.9 \mu$ pt Water Temp: $23.3 \%$
pH: $7.77$ pH units EC: $169.2 \mu$ S/cm DO: $6.42 mg/L$ SC: $1742 \mu$ S/cm DO: $76.1 \%$ Salinity: $0.9 \mu$ pt
pH: $7.77$ pH units EC: $169.2 \mu$ S/cm DO: $6.42 mg/L$ SC: $1742 \mu$ S/cm DO: $76.1 \%$ Salinity: $0.9 \mu$ pt Water Temp: $23.3 \%$
pH: $7.77$ pH units EC: $169.2 \mu$ S/cm DO: $6.42 mg/L$ SC: $1742 \mu$ S/cm DO: $76.1 \%$ Salinity: $0.9 \mu$ pt Water Temp: $23.3 \%$
pH: $7.77$ pH units EC: $169.2 \mu$ S/cm DO: $6.42 mg/L$ SC: $1742 \mu$ S/cm DO: $76.1 \%$ Salinity: $0.9 \mu$ pt Water Temp: $23.3 \degree$ C Flow (from discharge measurement): $1.93 \ cfs$
pH: $7.77$ pH units EC: $169.2 \mu$ S/cm DO: $6.42 mg/L$ SC: $1742 \mu$ S/cm DO: $76.1 \%$ Salinity: $0.9 ppt$ Water Temp: $23.3 °C$ Flow (from discharge measurement): $1.93 cfs$ Samples Collected (check box)
pH: 7.77 pH units EC: 169.2 µS/cm DO: 6.42 mg/L SC: 1742 µS/cm DO: 716.1 % Salinity: 0.9 ppt Water Temp: 23.3 °C Flow (from discharge measurement): 1.93 cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):
pH: 7.77 pH units EC: 169.2 µS/cm DO: 6.42 mg/L SC: 1742 µS/cm DO: 710.1 % Salinity: 0.9 ppt Water Temp: 23.3 °C Flow (from discharge measurement): 1.93 cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
pH: 7.77 pH units EC: 169.2 µS/cm DO: 6.42 mg/L SC: 1742 µS/cm DO: 710.1 % Salinity: 0.9 ppt Water Temp: 23.3 °C Flow (from discharge measurement): 1.93 cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): 2 Dissolved Phosphorus and Nitrogen (field filtered): 2 Dissolved Phosphorus and Nitrogen (field filtered): 2
pH: 7.77 pH units EC: 169.2 µS/cm DO: 6.42 mg/L SC: 1742 µS/cm DO: 716.1 % Salinity: 0.9 ppt Water Temp: 23.3 °C Flow (from discharge measurement): 1.93 cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):

	Distance		
No.	from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	6.6	0.2	0.03
2	8.0	0.5	0.11
3	9.0	0.55	0.06
4	10.0	0.6	0.03
5	11.0	0.8	0.40
6	12.0	0.6	0.43
7	13.0	0.7	0.37
8	14.0	0.10	0.33
9	15.0	0,55	0.37
10	16.0	0.45	0.33
11	17.0	0.4	0.23
12	18.0	0.5	0.22
13	19.0	0.65	0.24
14	20.0	0.8	0.06
15	21.0	0.9	0.02
16	23.0	0	0
17			
18			
19			
20			-

Discharge Measurement 1st Measurement = left bank (looking downstream)

	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)	-	-	
Float R	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1			
Depth 2			
Depth 3		-	
Depth 4	-		
Depth 5			

Quantity
10
.3
В
-
11
430
25

 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
 R)
 Date:
 7/10/18
 Crew:
 KH, LM

32	-	Macroalgae	Presence/Abs	sence (P/A) a	nd Water Dept	n (mm/ft/in)		Densiometer (0-17) Count covered dots			
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	2.1	OA	ISA	20A	(25P)	( e	13	16	17	7	V
AB	2.0	OA	21A	27 A	36A	OA			1 miles		
В	2.25	σA	5A	32A	(24P)	oA	17	17	17	17	
BC	3.65	OP	24A	(IGP)	(BP)	OA					
C	4.7	OA	34A	30A	44A	OA	T	17	17	17	
CD	4.2	AO	55A .	66A	52A	24A					
D	3-1	OP	DRY	52A	51A	27A	714	10	降17	7	
DE	4.5	AO	INACCESS	65A	4IA	11A					
E	3.8	AO	38A	35A	25A	IIA	17	17	17	17	
EF	4.4	OA	27A	(27P)	(270)	OA					
F	4.0	60	24A	24A	25A	OP	13	7	11	11	/
FG	4-2	OP	(IP)	45A	37A	OP					
G	4.15	OA	28A	(30P)	(25P)	.oA	17	13	11	6	
GH	2.55	(OP)	GP	31A	(30P)	GP	L				
Н	2.6	OP	9A	(32P)	400	OP	16	13	17	9	
HI	3.0	OA	35 A	(25P)	(5P)	Q					
1	3.3	OA	22A	37A	43A	ZOA	17	17	17	16	
n	1.7	OA	15A	(30P)	30A	GP				-	
J	2.65	GA	IDA	37A	GID	6P	17	17	17	. 17	
JK	2.65	OP	3A	(50)	OA	OA					
K	Z-35	(GP)	(22P)	(13P)	200	OA	17	17	17	17	)

110

37/103

Frank ID /AA HIN Y IN ILII Y /19
Event ID (Month Year): 121-7 18
Site ID:
Date/Time: 07.9.18 1300
Crew Members: KHLMJM
Latitude/Longitude: <u>34.32947 ~119.29731</u> Flow (circle one): Flowing/ Ponded / Dry Wind Strength: Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) from / To Photos (check): Upstream Downstream Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :
January—December Monthly In Situ Measurements: pH: 8.17 pH units EC: 1334 μS/cm DO: 8.91 mg/L SC: 1305 μS/cm DO: 110.4 % Salinity: 0.7 ppt Water Temp: 26-1 °C Flow (from discharge measurement): 2-94 cfs
Samples Collected (check box)
January—December Monthly Water:
Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):
Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):

Velocity Area Method (preferred)							
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)				
1	3.00	0.00	0.00				
2	7.00	1.50	-0.04				
3	8,50	1.35	-0.02				
4	10.00	1.15	-0.01				
5	11.50	1.40	0.15				
6	13.00	1.20	0.28				
7	15,00	1.05	0.56				
8	16.00	0.65	0.87				
9	17.50	0.65	0,55				
10	19.00	0,60	0,19				
11	20.50	0.00	0.00				
12	22.00	0.20	= 0,12				
13	23.80	000	0.00				
14	1						
15							
16	100						
17							
18							
19			100				
20		-					

**Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float 2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5

May—September: Algae Collection for Chlorophyll *a* Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): \_\_\_\_\_

	-
Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm <sup>2</sup> )	10
PVC Delimiter (Area=12.6cm <sup>2</sup> )	1
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Ø
Other (Area= )	A
Number of Transects Sampled (0-11)	17
Composite Volume (mL)	H.12
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

#### Discharge Measurement 1st Measurement = left bank (looking downstream)

KH.LM

Trancost		Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)				Densiometer (0-17) Count covered dots				Photo (✓ when Taken)	
	Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream
Α	6.0	OA	(SP)	27A	OP	OA	8	7	12	13	1
AB	5.5	GP	DRY	19A	9A	ЗA					
В	5.2	OA	DRYT	22.A	40 A	9A	17	17	17	17	
BC	4.0	OA	14A	4A	TORT	OA					
C	5.5	17A	12A	16A	14A	IIA	217	14	X3	10	
CD	5.5	OA	(19P)	DRY	27A	(JSP)					
D	6.0	GP	25A	(4P)	(JSP)	ΦA	7	13	5	12	
DE	6.0	OA	19A	27A	7A	oA					
E	8.0	GA	25A	37A	37A	OA-	17	10	4	11	
EF	6.3	OA	45A	37A	31A	HIA					
F	6.5	20A	20A	24A	ITA	OA	10	9	8	2	$\checkmark$
FG	5.5	oA	HA	50A	22A	TOP					
G	6.0	OA	OP	270	22A	OP	15	3	184	5	
GH	7.0	ÔA	35A	(50)	14A	OA					
н	5.2	6A	18A	19A	25A	OA	13	13	16	4	
HL	5-5	OP	(JP)	14A	IOA)	OA	2				
-1	6.0	OA	25A	9 Maria	7A!	6A	17	17	17	16	
IJ	7-25	OA	26A	37A	29A	OA					
J	6.5	DA	42A	HOA	37A.	OA	16	7	15	7	
JK	6.0	OA	4SA	SOA	46A	AO					
К	7-0	DA	28A	15A	20A	OA	16	5	12	9	1

15/101

Event ID (Month Year):	9 18
Site ID:	
Date/Time: 7.9.18 110	0
Crew Members: KH LM-	M
Latitude/Longitude: 34.34587,-	119-29983
Flow (circle one): Flowing/ Ponded / Dry	1
Wind Strength:	
Calm / Light Breeze / Moderate Breeze / Strong	
Wind Direction: Blowing (circle one) From	
Photos (check): Upstream	
Notes (e.g. homeless, wildlife, horses, swin	mming/recreation
discharge comments, etc.) :	
	-
January—December Monthly In Situ Meas	surements:
pH: 8.0 pH units EC: 1205 μS	/cm
DO: 9-63 mg/L SC: 1219 µS	/cm
DO: 115-6 % Salinity: 0 % ppt	
Water Temp: 24.4 °C	
Flow (from discharge measurement):	16 cfs
Samples Collected (check box)	- 1-
January—December Monthly Water:	
Total Phosphorus, Total Nitrogen, and Nitr	ate + Nitrite as
Nitrogen (unfiltered):	×
Dissolved Phosphorus and Nitrogen (field fi	iltered): 🕵
May—September Dry Season Monthly Alg	ae:
Chlorophyll a (filters-algae):	×

No.	Distance from Left	Depth (ft)	Velocity		
NO.	Bank (ft)	Depth (it)	(ft/sec)		
1	6.8	0.00	0.00		
2	8.0	0.50	0.00		
3	9.0	0.50	0.01		
4	10.0	0,50	0.20		
5	11.0	0.60	0.18		
6	12.0	0-80	-0.02		
7	13-0	0.50	0-14		
8	14.0	1.05	0.23		
9	15.0	1.00	0.24		
10	14.0	0.55	0.39		
11	17.0	1.00	0.30		
12	18.0	0.95	0.09		
13	19.0	0.50	0.12		
14	20.0	0.30	0.01		
15	21.0	0.65	0.07		
16	21.6	0.45	0.07		
17					
18					
19					
20	1	-	-		

Discharge Measurement 1st Measurement = left bank (looking downstream)

	ocity area m	ethod not po	ossible)
	Float 1	Float 2	Float 3
Distance (ft)			
Float Time (sec)			
Float R	each Cross	Section (ft)	
	Upper Section	Middle Section	Lower Section
Width			
Depth 1	1		
Depth 2	1		
Depth 3			-
Depth 4			
Depth 5	3		
Reach Length (150			hlorophyll
if wetted width > 10	m if wetted ) m): on Device	d width ≤ 1	
if wetted width > 10 Collecti (sum # transe	m if wetted 0 m): on Device ects per De	d width ≤ 1 vice)	0 m; 250 m
if wetted width > 10 Collecti (sum # transe Rubber Delimiter (A	m if wetter ) m): on Device ects per De area=12.6cm	d width ≤ 1 vice)	0 m; 250 m
if wetted width > 10 Collecti (sum # transe Rubber Delimiter (A PVC Delimiter (Area	m if wetted o m): on Device ects per De wrea=12.6cm =12.6cm <sup>2</sup> )	d width ≤ 1 vice) m <sup>2</sup> )	0 m; 250 m
	m if wetted o m): on Device ects per De wrea=12.6cm =12.6cm <sup>2</sup> )	d width ≤ 1 vice) m <sup>2</sup> )	0 m; 250 m
if wetted width > 10 Collecti (sum # transe Rubber Delimiter (A PVC Delimiter (Area Syringe Scrubber (A	m if wetter on Device ects per De urea=12.6cm <sup>2</sup> ) rea=5.3cm	d width ≤ 1 vice) m <sup>2</sup> ) )	0 m; 250 m
if wetted width > 10 Collecti (sum # transe Rubber Delimiter (A PVC Delimiter (Area Syringe Scrubber (A Other (Area=	m if wetter on Device ects per De area=12.6cm <sup>2</sup> ) rea=5.3cm ts Sampled	d width ≤ 1 vice) m <sup>2</sup> ) )	0 m; 250 m

 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
 R3
 Date:
 7/9/18
 Crew:
 KH, LM

	/	Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)					Densiometer (0-17) Count covered dots				Photo (✓ when Taken)	
Trancort	Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
A	5.3	00	IIA	260	25A	20A	/	8	16	10		
AB	7.5	(0P)	(88)	(170)	VTA	GD						
В	9-5	(OP)	(P)	(2P)	17A	OA	13	5	12	5		
BC	8.5	AD	20A	5A	14A	(IOP)						
с	8.8	AO	21 A	(4P)	16A	OP	8	2	13	0		
CD	9.0	OA	OA	TOP	19A	OA						
D	8.5	OA	IOA	85P	GOP	GP	2	4	13	2		
DE	7-5	00	27A	35 A	35A	(33P)						
E	5.5	OP	24A	(27P)	40A	OA	8	5	17	15		
EF	5.5	OP	БA	27A	(309)	OP						
F	4.0	(OP)	24A	37A	33A	OP	10	6	16	5	/	
FG	4.0	(OP)	CIP	18 A	12A	OA						
G	.3.4	OP	20	15A	5A	OA	12	11	16	4		
GH	3.8	OP	60	(130)	19A	6A						
н	3.75	60	(30)	TP	15A	OA	13	11	17	13		
HI	2.7	OA	(14P)	OP	(4P)	(OP)						
1	3.0	OA	(4P)	8A	(10P)	OA	17	17	14	16		
IJ	3.7	OA	(110)	18A	IOA	OA						
J	5-0	OP	(TOP)	16A	19A	OA	17	15	16	15		
JK	6-35	60	19A	37A	41A	OA						
К	5.5	OP	120	34A	54A	55A	13	6	16	12		

Discharge Measurement 1st Measurement = left bank (looking downstream)

Event ID (Month Year): JULY 2018
Site ID: R4
Date/Time: 47/5/18 0840
Crew Members: KH, JM, LM
Latitude/Longitude: 34,38182 -119,30923
Flow (circle one): Flowing/ Ponded / Dry Wind Strength:
Calm) Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check): Upstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.) :
1
January—December Monthly In Situ Measurements:
pH: 7.2 pH units EC: 974 μS/cm
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46$ mg/L SC: $1092 \mu$ S/cm
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46$ mg/L SC: $1092 \mu$ S/cm DO: $50-7$ % Salinity: $0-5$ ppt
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46 \text{ mg/L}$ SC: $1092 \mu$ S/cm DO: $50.7 \%$ Salinity: $0.5 \text{ ppt}$ Water Temp: $19.4 \degree$ C
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46$ mg/L SC: $1092 \mu$ S/cm DO: $50-7$ % Salinity: $0-5$ ppt
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46 \text{ mg/L}$ SC: $1092 \mu$ S/cm DO: $50.7 \%$ Salinity: $0.5 \text{ ppt}$ Water Temp: $19.4 \degree$ C
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46 \text{ mg/L}$ SC: $1092 \mu$ S/cm DO: $50.7 \%$ Salinity: $0.5 \text{ ppt}$ Water Temp: $19.4 \degree$ c Flow (from discharge measurement): $0.02 \text{ cfs}$
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46 \text{ mg/L}$ SC: $1092 \mu$ S/cm DO: $50.7 \%$ Salinity: $0.5 \text{ ppt}$ Water Temp: $19.4 \degree$ c Flow (from discharge measurement): $0.02 \text{ cfs}$ Samples Collected (check box)
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46 \text{ mg/L}$ SC: $1092 \mu$ S/cm DO: $50.7 \%$ Salinity: $0.5 \text{ ppt}$ Water Temp: $19.4 \degree$ C Flow (from discharge measurement): $0.02 \text{ cfs}$ Samples Collected (check box) January-December Monthly Water:
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46 mg/L$ SC: $1092 \mu$ S/cm DO: $50.7 \%$ Salinity: $0.5$ ppt Water Temp: $19.4 \circ$ c Flow (from discharge measurement): $0.02$ cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46 mg/L$ SC: $1092 \mu$ S/cm DO: $50.7 \%$ Salinity: $0.5$ ppt Water Temp: $19.4 \circ$ C Flow (from discharge measurement): $0.02$ cfs <b>Samples Collected (check box)</b> <b>January–December Monthly Water:</b> Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46 mg/L$ SC: $1092 \mu$ S/cm DO: $50.7 \%$ Salinity: $0.5$ ppt Water Temp: $19.4 \circ$ c Flow (from discharge measurement): $0.02$ cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46 mg/L$ SC: $1092 \mu$ S/cm DO: $50.7 \%$ Salinity: $0.5$ ppt Water Temp: $19.4 \circ$ c Flow (from discharge measurement): $0.02$ cfs <b>Samples Collected (check box)</b> <b>January–December Monthly Water:</b> Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): $\mu$ Dissolved Phosphorus and Nitrogen (field filtered): $\mu$
pH: $7.2$ pH units EC: $974 \mu$ S/cm DO: $5.46 mg/L$ SC: $1092 \mu$ S/cm DO: $50.7 \%$ Salinity: $0.5$ ppt Water Temp: $19.4 \circ$ C Flow (from discharge measurement): $0.02$ cfs <b>Samples Collected (check box)</b> <b>January–December Monthly Water:</b> Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):

Ve	locity Area M	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	4.9	0.0	0.0
2	5,0	0.15	0.03
3	5.3	0,20	0.21
4	5.6	0.20	0,02
5	6.1	0.00	0.00
6	-		
7			
8		1000	-
9			*
10			
11			
12		-	
13			
14			
15			
16	1		
17	-		
18			
19			
20			

**Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float 2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5 May-September: Algae Collection for Chlorophyll a

May—September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): \_\_\_\_\_

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12.6cm <sup>2</sup> )	2
PVC Delimiter (Area=12.6cm <sup>2</sup> )	7
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Ø
Other (Area= )	
Number of Transects Sampled (0-11)	9
Composite Volume (mL)	348
Chlorophyll <i>a</i> Volume (use GF/F filter, 25 mL preferred volume)	25

 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
 RH
 Date:
 7/9/18
 Crew:
 KH
 L

KH LM

		Macroalgae	Presence/Abs	sence (P/A) a	nd Water Depth	n (mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	4.5	OP	109	28P	29P	OP	8	1	0	4	/
AB	5.0	OP	239	310	370	90					
В	5.5	OP	210	331	379	GA	1	2	5	0	
BC	3.5	OP	90	12P	240	OP					
с	6.1	OP	150	(IIA)	(2A)	GAD	6	10	6	12	
CD	7.0	GAD	(22A)	29 258	(20A)	(A)					
D	5.5	(OÂ)	(16A)	(25A)	(HOA)	(OA)	17	17	17	17	
DE	1.05	90	(IA)	3p	(AP)	(OA)					
E	2-1	(OA)	GAD	TOA	(TA)	(OA)	17	17	17	17-	
EF			ORY								-
F			ORY								$\checkmark$
FG			DRY								
G	2.6	OP	OP	OP	OP	OP	0	0	0	0	7.
GH	4.0	OAP	OP	6P	00	OP					
H	3-3	OP	OP	OP	18	OP	0	0	0	0	
HI	3-0	OP	5P	68	98	90					
.1	2.3	OP	OP	OP	OP	OP	9	3	17	13	
IJ	1.6	OP	59	15p	209	OP				-	
J	1-85	OP	5P	OP	op	OP	0	2	3	0	
JK	1-1	09	69	11P	\$2P	Op					
к	2.2	(OA)	2P	48	2009	09	1	4	3	2	$\checkmark$

22×A 90-22= 68

**Discharge Measurement** 

Event ID (Month Year): 1017 2018	1
Site ID: SA	
Date/Time: 7/9/18 1000	
Crew Members: KH JM LM	Ш
	L
Latitude/Longitude: 34.38072 -119.30734	Ð
Flow (circle one): Flowing/ Ponded (Dry)	Ы
Wind Strength:	H
calm ) Light Breeze / Moderate Breeze / Strong Breeze / Windy	Ы
Wind Direction: Blowing (circle one) From / To	L
Photos (check): Dystream Downstream	
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	
discharge comments, etc.) : Dry @ CR and	
above so no algoe measurements	
taken.	Ľ
	L
	1
January-December Monthly In Situ Measurements:	1
pH: 7-11 pH units EC: 954 μS/cm	Ľ
DO: 4-79 mg/L SC: 1073 µS/cm	H
DO: <u>51-8</u> % Salinity: <u>0*5</u> ppt	H
Water Temp: 19-2 °C	Н
Flow (from discharge measurement): 0-02_cfs	Ľ
now (nom disenaige measurement) us	H
	1
Samples Collected (check box)	1
January—December Monthly Water:	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	
Nitrogen (unfiltered):	
Dissolved Phosphorus and Nitrogen (field filtered):	
May—September Dry Season Monthly Algae:	
Chlorophyll a (filters—algae):	
P. C.	

1st Measurement = left bank (looking downstream) Velocity Area Method (preferred) Distance Velocity from Left Depth (ft) No. (ft/sec) Bank (ft) 0 3.6 0 1 CAN. 2 4.1 1 17 0-2 4.1 0.24 3 4-65 4 0 0 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

**Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float 2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5 May-September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): Not collected . Tooch **Collection Device** Quantity (sum # transects per Device) Rubber Delimiter (Area=12.6cm<sup>2</sup>) PVC Delimiter (Area=12.6cm<sup>2</sup>) Syringe Scrubber (Area=5.3cm<sup>2</sup>) Other (Area= ) Number of Transects Sampled (0-11) Composite Volume (mL) Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)

 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
 SA
 Date:
 7/9
 18
 Crew:
 KH, JM, LM

-		Macroalgae	Presence/Abs	ence (P/A)	and Water Dept	n (mm/ft/in)		Dension Count co	eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α											/
AB					-	-					
В				_							
BC											
с										· · · · · · · · · · · · · · · · · · ·	
CD	6		- DR-	4 -		$ \rightarrow $					
D			1								
DE											
E											
EF				1							
F											/
FG	-										
G											
GH											
н											
HI		÷									
1											
IJ							-				
J											
JK											
К			V					-			1

## Ventura River Algae TMDL Event Details

Front ID (Manth Van) AUCUST 2018	1 1 1 1
Event iD (Wonth fear):	Date: 8/14+8/15/18
Event ID (Month Year): AUGUST 2018 Crew Members: K.HAHS, J. FORREST, C. GUZ	MAN B.JONES (ADC)
Neather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain / C	Other
went Type (check): Dry (<0.1" rain per day for the preceding	
□ Wet (days with ≥0.1" rain and the three d	
Notes: Bedman 410 4 110341139	-/B/
VELOC # ALCALOS (Chu)	
YSIST # 0300379 (8/15-01	EAG25 patroligrates)
101010 0300011 (010 01	ACES I CONTRACT
OBSERVATION SITES (RIVER FLOW) 18/15/18	
DESERVATION SITES (RIVER FLOW) 10/10/10	
Ventura River at Highway 150 (Baldwin Road) Flow Status (Dry)/ Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
/entura River at Santa Ana Blvd	and here and have
Flow Status : Dry Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
Notes: <u>proded</u> on <u>uest</u> side. Flowing (Estimated Flow: <u>2-3</u> cfs) Notes: <u>proded on uest side.</u> Flowing cest	side.
low Status : Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
NSAMPLED TMDL SITES 8/14/18 te ID:R4Time:0800 ow Status :/Dry/ Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
INSAMPLED TMDL SITES       8/14/18         ite ID:       R4       Time:       0800         low Status :       07)/ Ponded / Flowing (Estimated Flow:       cfs)         eason not sampled (if flowing):	Photos Taken: Upstream / Downstream
Notes:	Photos Taken: Upstream / Downstream
NSAMPLED TMDL SITES 8/14/18   te ID:R4 Time:0800   ow Status : Dry/ Ponded / Flowing (Estimated Flow:cfs)   eason not sampled (if flowing):   te ID:C1Time:330   ow Status (Dry) Ponded / Flowing (Estimated Flow:cfs)   eason not sampled (if flowing):	Photos Taken: Upstream / Downstream
NSAMPLED TMDL SITES   B/14/18   te ID:R4   Time:0500   ow Status : (Dry) / Ponded / Flowing (Estimated Flow: cfs)   eason not sampled (if flowing):   otes:   te ID:C1 Time:330   ow Status (Dry) Ponded / Flowing (Estimated Flow: cfs)   eason not sampled (if flowing):   ow Status (Dry) Ponded / Flowing (Estimated Flow: cfs)   eason not sampled (if flowing):   otes:	Photos Taken: Upstream / Downstream Photos Taken: Upstream / Downstream
INSAMPLED TMDL SITES       8/14/18         ite ID:       R4       Time:       0800         low Status : Dry/ Ponded / Flowing (Estimated Flow:       cfs)         eason not sampled (if flowing):	Photos Taken: Upstream / Downstream Photos Taken: Upstream / Downstream Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing (Estimated Flow:cfs)         Notes:	Photos Taken: Upstream / Downstream Photos Taken: Upstream / Downstream Photos Taken: Upstream / Downstream

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 2

Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est				
Event ID (Month Year): AUGUST 2018	Date:	8/15/18	1020	
Crew Members: KH, CG, BJ				
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle	one): Open / Restricte	ed /Closed	
Direction of Tide: Ebb / Flood / Slack N/A		0708 Time of 1		
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / W	/indy / Strong Wind		rection: Blowing From To VI S	
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): Bud 5 (me	stuals) nus	ter 2 door plays	ing in water (sanacte to	-
earhold)		. 5.0	J	

## TRANSECT 1

In Situ Measurements (Measure at Floating M           Monthly (Jan—Dec):         0300579           pH:         627         pH units         EC:         337           DO:         697         SC:         3314           DO:         697         SC:         3314           DO:         697         SC:         3314           DO:         697         SC:         3314	<u>3</u> μS/cm μS/cm	( )	Nitrogen, total and dissolved: Phosphorus, total and dissolved:
Photos: Proceanward Randward	Start Time: 1022	End Time: 1039	Nitrate + Nitrite as Nitrogen:
Start Latitude: 34.27452	Start Longitude: -110	1.30698	Dry Season Algae (May—Sep):
End Latitude: 34-27448			Chlorophyll a (phytoplankton): Volume filtered per sample: 250
PVC Latitude:	PVC Longitude:		Volume intered per sample: 250

			-	MAG	CROALGAE	-LAND B	ASED				FI	OATING N	ACROAL	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	5.4	69	9.6	12-3	17.3	18.2	20.3	22.4	23.9	28.6	-			-
Water Depth (must be ≤ 0.3 m)	-		-								0.3		-	-
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Des Dd	Frsh Int Des Dd	Frsh <sup>19</sup> Int 2 Des 4 Dd	Ersh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh 6 Int 1 Des 5 Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	0	6	21	5	1	1	3	14	7	2	0	0	0	0
No. Crosshairs with Macroalgae Absent	49	49	28	44	48	48	46	35	42	47	49		-	-
Crosshair Total (must equal 49)	49		-		-					->	49			

54

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 2 of 2 ransect Measurements Date: 8/15/18 Crew: KH G@, 65

Ventura River Algae TMDL— Estuary Transect Measurements Date:

Crew: KH GR B5

Ī	R/	N	S	EC	Т	2

Photos: Doceanward Land	ward				1	Start Time	10	15		End	d Time:	1103	1.1.1.1	
Start Latitude: 34-27453	5					Start Long		-119	. 30	740				
End Latitude: 34 + 27464						End Longit	ude:	-119.		100				1.20
PVC Latitude:						PVC Longitude:								
				MAC	ROALG	AE-LAND B	ASED				FI	LOATING M	ACROALG	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	5.4	6.9	9.6	12-3	17-3	18.2	20.3	22.4	239	28-6			-	
Water Depth (must be ≤ 0.3 m)				-						-	0-3			>
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int 5 Des 5 Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh 2 Int Des Dd 1	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	I	D	6	4	0	0	0	5	3	3	0	0	0	0
No. Crosshairs with Macroalgae Absent	48	49	42	45	40	1 49	49	44	46	46	49			
Crosshair Total (must equal 49)	49-		12		_		-	(	1.6	7	49	-		>
TRANSECT 3 Photos: Ceanward Cland		~~	0.70		-+	Start Time		05			d Time:	1124		
Start Latitude: 34-27501	- 3.	1-27	1475			Start Long	itude: 🤫	-119-	307	76 -	119-30	769		
End Latitude: 34.2750	01					End Longit	ude:	-119-	307-	76				
PVC Latitude:						PVC Longit	ude:							
				MAC	ROALG	AE-LAND E	BASED				F	LOATING M	ACROALG	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	5.4	6.9	9.6	12-3	17.3	18-2	20.3	22.4	23.9	28.6	-	2		
Water Depth (must be ≤ 0.3 m)									-		0		-	
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int Oes Dd	Frsh \ Int 3 Des Dd	Frsh Int Des Dd	Frsh Int 2 Des Dd2	Frsh Int Des Dd	Ersb Int Des Dd	Frsh Int 3 Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	16	4	1	4	6	6	3	7	16	2	0	0	0	0
No. Crosshairs with Macroalgae Absent	33	45	48	45	43	43	46	42	33	47	49	49	49	49
Crosshair Total (must equal 49)	49	-	-		-	-	-	-		$\rightarrow$	49	-		

Event ID (Month Year): Au Site ID: R	gust 21	810
Date/Time: 08.15.18	0740	
Crew Members: KH, CG, B		
Latitude/Longitude: 34 - 28046	-119.30	849
Flow (circle one): Flowing Ponder	/ Dry	
Wind Strength:		
Calm Light Breeze / Moderate Breeze /		/indy
Wind Direction: Blowing (circle one)		_
Photos (check): DUpstream		
Notes (e.g. homeless, wildlife, horse	s, swimming/re	creati
discharge comments, etc.) :	- 11	
YSI 85 Ol GO625 mal Protoning	-Switched k	2
0300379		
~		
January—December Monthly In Situ	Measurements	: 630
January-December Monthly In Situ pH: 8.03 pH units EC: 122 DO: 6.59 mg/L SC: 172 DO: 758 % Salinity: 99 Water Temp: 31.9 °C 33.00 Flow (from discharge measurement):	µS/cm \\[] µS/cm \\[] ppt 0,9 ЭЭ.5	2
pH: 8.03 pH units EC: 42 DO: 57 mg/L SC: 173 DO: 758 % Salinity: 09 Water Temp: 31.9 °C 22 Flow (from discharge measurement): Samples Collected (check box)	µS/cm \\[/ µS/cm \\[/ ppt 0.9  	2
pH: 8.03 pH units EC: 424 DO: 6.54 mg/L SC: 1124 DO: 158 % Salinity: 09 Water Temp: 31.9 °C 220 Flow (from discharge measurement): Samples Collected (check box) January—December Monthly Water	μs/cm \\[6] μs/cm \\[6] ppt 0.9  cfs cfs cfs	21
pH: 8.03 pH units EC: 42 DO: 57 mg/L SC: 173 DO: 58 % Salinity: 99 Water Temp: 31.9 °C 220 Flow (from discharge measurement): Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, an	μs/cm \\[6] μs/cm \\[6] ppt 0.9  cfs cfs cfs	21
pH: 8.03 pH units EC: 424 DO: 57 mg/L SC: 1774 DO: 758 % Salinity: 99 Water Temp: 31.9 °C 220 Flow (from discharge measurement): Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, an Nitrogen (unfiltered):	μS/cm \\[6] ppt 0.9  cfs cfs cfs 	te as
pH: 8.03 pH units EC: 42 DO: 57 mg/L SC: 173 DO: 58 % Salinity: 99 Water Temp: 31.9 °C 220 Flow (from discharge measurement): Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, an	μS/cm \\[6] ppt 0.9  cfs cfs cfs 	te as
pH: 8.03 pH units EC: 424 DO: 57 mg/L SC: 1774 DO: 758 % Salinity: 99 Water Temp: 31.9 °C 220 Flow (from discharge measurement): Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, an Nitrogen (unfiltered):	μS/cm \\Gr μS/cm \\Gr ppt 0.9 cfs cfs cfs cfs cfs cfs	te as

39051

7.1 86

Ve	locity Area N	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	3.0	0	0
2	3.5	0.5	0.11
3	5.0	0.4	0.10
4	6.5	0.2	0.24
5	8.0	0.6	0.38
6	9.5	0.3	0.47
7	11.0	0.4	0.38
8	12.5	0.2	0.21
9	14.0	0.3	0.16
10	15.5	0.5	0.18
11	17.0	0.7	0.10
12	17.3	Ð	Ð
13			
14			
15			
16			
17			
18			
19			
20	1.1		

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

	elocity area m		ossible)
	Float 1	Float 2	Float 3
Distance (ft)		/	1
Float Time (sec)		1	
Float	Reach Cross	Section (ft)	)
	Upper Section	Middle Section	Lower Section
Width	/		
Depth 1	/	1	-
Depth 2		1	
Depth 3	-/		2
Depth/4		-	
a de la			
Depth 5			
Depth 5 May-September Reach Length (150 if wetted width > 1 Collect	) m if wetted .0 m): <u>}5</u> tion Device	l width ≤ 10	
Depth 5 May-September Reach Length (150 if wetted width > 1	0 m if wetted 0 m): <u>}5</u> tion Device sects per Dev	l width ≤ 10 © vice)	0 m; 250 m
Depth 5 May-September: Reach Length (150 if wetted width > 1 Collect (sum # trans	0 m if wetted 0 m): <u>}5</u> tion Device sects per Dev Area=12.6cn	l width ≤ 10 © vice)	0 m; 250 m
Depth 5 May-September: Reach Length (150 if wetted width > 1 Collect (sum # trans Rubber Delimiter (	) m if wetted (0 m):	l width ≤ 10 0 vice) n <sup>2</sup> )	0 m; 250 m
Depth 5 May-September: Reach Length (150 if wetted width > 1 Collect (sum # trans Rubber Delimiter (Are	) m if wetted (0 m):	l width ≤ 10 0 vice) n <sup>2</sup> )	0 m; 250 m
Depth 5 May-September Reach Length (150 if wetted width > 1 Collect (sum # trans Rubber Delimiter ( PVC Delimiter (Are Syringe Scrubber ()	0 m if wetted 10 m):	l width ≤ 10 00 vice) n <sup>2</sup> ) ) )	0 m; 250 m
Depth 5 May-September Reach Length (150 if wetted width > 1 Collect (sum # trans Rubber Delimiter ( PVC Delimiter (Are Syringe Scrubber (Area=	) m if wetted (0 m):	l width ≤ 10 00 vice) n <sup>2</sup> ) ) )	0 m; 250 m

Ventura	<b>River Algae TMD</b>	L Transect Measu	rements (fo	r percen	nt cover, May-	Septemb	er)	-
Site:	RI		8/15/		Crew:		CG BU	

		Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depth	n (mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	1=35	(IP)	(8P)	21A	2A	2A	15	10	12	12	$\checkmark$
AB	1-55	OA	27A	26A	16A	15A					
В	1.45	24A	40A	(10P)	18A	IIA	16	17	17	15	
BC	3.5	OA	26A	29A	21A	(4P)					
c	5.0	OA	47A	25A	47A	17A	17	17	17	17	
CD	4.5	OA	50 A	55A	(58P)	(IP)					
D	4.7	OA	58A	57A	42A.	12A	.14_	7	8	12	
DE	3.55	OA	50 A	62A	(23P)	(210)	1			-	
E	3-5	OA	14DA	21A	14A	13A	17	17	17	17	
EF	4.5	OA	.33A	35A	22A	2A					
F	4.0	-OA	(4P)	(200)	19A	(12D)	10	6	11	8	
FG	3.75	(OP)	17A	42A	27A	4A				-	
G	3.45	OA	35A	(4P)	14 A	12A	16	17	17	15	
GH	2.4	OA	29A	33A	30A	5A		-			
н	2.6	OA	9A	35A	19A	IIA	13	14	12	12	
HI	3.0	OA	42 A	30A	33A	29A		-		1.5	
1	2.4	DA	45A	46A	(50P)	All a	17	17	17	15	
IJ	2.4	3A	(SP)	30A	30A	IA				10	
J	22	OA	45A	30A	20A	4A	17	17	17	11	
JK	2.2	OA	16A	26A	23A	2A				1	
к	2-7	OA	36A	39A	38A	4A	17	17			$\checkmark$

Discharge Measurement 1st Measurement = left bank (looking downstream)

Event ID (Month Year): 84 AVGUST 2018
Site ID: AB R2
Date/Time: 8 14/18 1115
Crew Members: KH, JF, BJ
Latitude/Longitude: 34-33947 - 19-29731
Flow (circle one): Flowing/ Ponded / Dry
Wind Strength:
Calm / Wight Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check):  □ Upstream  □ Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.) :
January-December Monthly In Situ Measurements:
pH: 8-20 pH units EC: 1317 μS/cm
DO: 6.66 mg/L SC: 1315 µS/cm
DO: 80-7 % Salinity: 0-7 ppt
Water Temp: 25-1 °C
Flow (from discharge measurement): <u>2°</u> ) cfs
Samples Collected (check box)
Samples Collected (check box) January—December Monthly Water:
January—December Monthly Water:
January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
January—December Monthly Water:
January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): Dissolved Phosphorus and Nitrogen (field filtered):
January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):

Ve	locity Area M	ethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	2.0	0	0
2	4.0	1.3	\$
3	6.0	1.45	0.02
4	8.0	1.0	0.06
5	10.0	0.7	0.40
6	12.0	1.3	0.22
7	14.0	1.1	0.30
8	16.0	1.1	0.09
9	18.0	1.0	-0.02
10	20.0	\$	0
11			*
12			
13			
14			
15			
16			
17			
18			
19	-		
20			-

**Buoyant Object Method** (Use only if velocity area method not possible) Float 2 Float 1 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Middle Upper Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5 May-September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): 50 **Collection Device** Quantity (sum # transects per Device) Rubber Delimiter (Area=12.6cm<sup>2</sup>) PVC Delimiter (Area=12.6cm<sup>2</sup>) 4 Syringe Scrubber (Area=5.3cm<sup>2</sup>) 0 Other (Area= ) Number of Transects Sampled (0-11) Composite Volume (mL) 540

Chlorophyll *a* Volume (use GF/F filter, 25 mL preferred volume)

25

Ventura	a River Algae	TMDL Transect Measu	ireme	nts (for perce	ent cover, May-	Septemb	
Site:	R2	Date:	8	14/18	Crew:	KH .	JF BJ

	5	Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depti	n (mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	7-1	OA	ZDA	15 A	14 A	OA	6	6	15	g.	$\checkmark$
AB	6-1	OA	15A	(15P)	IOA	OA					
В	4.75	OP	27A	36 A	37A	OA	8	9	10	3	
BC	4.95	OA	DRY	26A	15A	OA					
с	5.0	IOA	(P)	25A	16A	(OP)	16	8	410	9 -	
CD	5-5	8A	25A	ORY)	24A	6A					
D	5.0	OA	25A	16A	17A	12A	Π	14	4	16	
DE	6.5	OA	13A	(14P)	IHA	(189)	1				
E	5.9	35A	53A	38 A	37A	OA	17	2	6	11.	
EF	5-0	IOA	35A	5444	ABD	15A					
F	5.5	OA	34A	(27 P)	(4P)	OA	q	6	3	4	/
FG	5.5	OA	32A	50 A	21 A	OA				1	
G	6.5	6A	IOA	15 A	20A	OA	7	2	1	5	
GH	8.0	OA	OA	14A	SA_	OA					
н	6.4	OA	60	16A	(18)	16A	13	Ø	11	0	
HI	6-8	OA	OA	13 A	25A	OA					_
1	5-7	OA	(OP)	9A	8A	OA	12	5	2	16	1
IJ	10.0	OA	35A	2A	(12P)	OA			1		
J	7.4	OA	45A	42A	(22P)	OA	17	8	14	17	
JK	6.5	OA	IOA	(39P)	(HOP)	OA					-
К	7-2	OA	18A	(26P)	(24P)	OA	14	5	6	7	* V

0

...

nondess camp w/ vas craps + toilet visible comstream

**Discharge Measurement** 

Event ID (Month Year):AVGUST 2018
Site ID: R-3
Date/Time: 81418 0900
Crew Members: KH, JF, GJ
Latitude/Longitude: 34-34587 -119.29983
Flow (circle one): Flowing Ponded / Dry Wind Strength:
Calm/Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check):  □ Upstream  □ Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.) :
January-December Monthly In Situ Measurements:
pH: <u>7.92</u> pH units EC: <u>1150</u> μS/cm
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74$ mg/L SC: $1219 \mu$ S/cm
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74$ mg/L SC: $1219 \mu$ S/cm DO: $77-5 \%$ Salinity: $0.6$ ppt
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74$ mg/L SC: $1219 \mu$ S/cm DO: $77-5$ % Salinity: $0.6$ ppt Water Temp: $21.9$ °C 22.0 7
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74$ mg/L SC: $1219 \mu$ S/cm DO: $77-5 \%$ Salinity: $0.6$ ppt
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74$ mg/L SC: $1219 \mu$ S/cm DO: $77-5$ % Salinity: $0.6$ ppt Water Temp: $21.9$ °C 22.0 7
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74$ mg/L SC: $1219 \mu$ S/cm DO: $77-5$ % Salinity: $0.6$ ppt Water Temp: $21.9$ °C 22.0 7
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74 mg/L$ SC: $1219 \mu$ S/cm DO: $77.5 \%$ Salinity: $0.6$ ppt Water Temp: $21.9 c$ $22.0 \%$ Flow (from discharge measurement): $1.0$ cfs
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74 mg/L$ SC: $1219 \mu$ S/cm DO: $77-5\%$ Salinity: $0.6$ ppt Water Temp: $21.9$ °C 22.0 7 Flow (from discharge measurement): $1.0$ cfs Samples Collected (check box)
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74 mg/l$ SC: $1219 \mu$ S/cm DO: $77.5 \%$ Salinity: $0.6$ ppt Water Temp: $21.9$ °C 22.0 7 Flow (from discharge measurement): $1.0$ cfs Samples Collected (check box) January-December Monthly Water:
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74 mg/L$ SC: $1219 \mu$ S/cm DO: $77.5$ % Salinity: $0.6$ ppt Water Temp: $21.9$ $c^{2} 22.0$ % Flow (from discharge measurement): $1.0$ cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
pH: $7.92$ pH units EC: $1150 \mu$ S/cm DO: $6.74 mg/L$ SC: $1219 \mu$ S/cm DO: $77.5 \%$ Salinity: $0.6 ppt$ Water Temp: $21.9 cc$ $22.0 \%$ Flow (from discharge measurement): $1.0 cfs$ Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered): $\%$

14

Buoya (Use only if velo	erred)	ethod (prefe	ocity Area M	Vel
Distance (ft)	Velocity (ft/sec)	Depth (ft)	Distance from Left Bank (ft)	No.
Float Time (sec)	Ð	0	4.0	1
Float Re	0.08	0.3	4.3	2
_	0.01	0.5	6.0	3
Width	-0.01	0.8	7.5	4
Depth 1	0,22	0.4	8.5	5
Depth 2	0.18	0.4	9,5	6
Depth 3	-0.03	0.6	10.5	7
/ Depth 4	0.25	0.9	11.5	8
Depth 5	0.34	0.10	12.5	9
May—September: A	0.19	1.0	13.5	10
Reach Length (150 n f wetted width > 10	0.14	0.8	14.5	11
Collectio	0.01	0.9	15.5	12
(sum # transe	0.05	0.7	145	13
Rubber Delimiter (Ar	0.05	0.3	17.5	14
VC Delimiter (Area:	0.06	0.4	18.5	15
Syringe Scrubber (Ar	0.06	0.5	19.5	16
Other (Area=	0	A	19.7	17
Number of Transect	-	5	1 11 2	18
Composite Volume (	7.			19
Chlorophyll <i>a</i> Volum use GF/F filter, 25 n	1			20

**Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float 2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5 May-September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): 150 **Collection Device** Quantity (sum # transects per Device) Rubber Delimiter (Area=12.6cm<sup>2</sup>) 3 PVC Delimiter (Area=12.6cm<sup>2</sup>) 0 8 Syringe Scrubber (Area=5.3cm<sup>2</sup>) Other (Area= ) Number of Transects Sampled (0-11) 11

510

25

Composite Volume (mL)

(use GF/F filter, 25 mL preferred volume)

Chlorophyll a Volume

Ventura	River Algae T	MDL Transect Measur	rement	s (for	percen	t cover, May-	Septem	ber)	
Site:	R2	Date:	81	141	18	Crew:	KH	JF.	BJ

	m	Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depth	n (mm/ft/in)			eter (0-17) vered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	5.7	OP)	19A	TE	(IZP)	50	8	6	14	3	1
AB	6.0	TP	TD	TIP	(12P)	OA	1				
В	11.0	OA	15A (	50	(15 P)	GP	2	6	4	1	
BC	8:0	OA	25A	DA	16A	7A					
С	9.0	OP	8A	OP	25A	OP	17	17	17	17	
CD	9.0	OP	12A	36A	(66P)	60					
D	6.0	OP	(4P)	39 A	GID	(OP)	0	5	7	2	
DE	4.5	OP	29 A	(30P)	55 A	17A					
E	5.5	GD	14A	30 A	19A	3P2	0	3	15	9	
EF	4.5	OP	TIP	22A	42A	GP					
F	5-0	OP	13A	(10)	22A	AO	6	4	7	1	V
FG	4.95	OA	OA	(P)	12 A.	OA					
G	3-35	OA	(2P)	21A	15 A	OA	3	5	5	3	
GH	3.8	IA	21A	(OP)	ZGA	OA					
н	3.25	OA	(50)	14A	(14P)	OA	6	15	17	8	
HI	3.5	OA	ISA	28A	(ISP)	GD					
1	3.45	OA	(ISP)	TP	6A	OA	17	17	17	17	
IJ	3.0	,OA	(12P)	8A	(30)	DA					
1	6.8	QD	(2P)	(19P)	(16P)	OA	16	11	10	9	
JK	5-25	OP	(4P)	340	27A	OA					
к	5-1	(OP)	(57)	(299)	(35P)	(38P)	6	3	6	7	$\checkmark$

Event ID (Month Year): TMOL AVGUST	2018
Site ID: TMDL- MAN 5A	
Date/Time: 8/14/18 082 082	0
Crew Members: KH JP, BJ	_
Latitude/Longitude:	_
Flow (circle one): Flowing / Ponded / Dry	
Wind Strength:	
Calm ) Light Breeze / Moderate Breeze / Strong Breeze / Win Wind Direction: Blowing (circle one) From / To	
Photos (check):  Upstream  Downstream	_
Notes (e.g. homeless, wildlife, horses, swimming/recr	eation
discharge comments, etc.) : Dy abare C.	cation,
water samples and Photes AI	FK
	1
	-
January-December Monthly In Situ Measurements:	-
pH: pH units EC: 577 μS/cm	
DO: 5.84 mg/L SC: 997 µS/cm	
DO: 62.8 % Salinity: 0.5 ppt	
Water Temp: 18.3 °C 8.7	
Water Temp: <u>18-3</u> °C R.7 Flow (from discharge measurement): <u>&lt;0.01</u> cfs	
Water Temp: <u>18.3</u> °C R.7 Flow (from discharge measurement): <u><o.ol< u=""> cfs (trickle)</o.ol<></u>	)
Flow (from discharge measurement): <u><o.o.< u=""> cfs</o.o.<></u>	)
Flow (from discharge measurement): <u><o.o.< u=""> cfs</o.o.<></u>	)
Flow (from discharge measurement): <u><o-o1< u=""> cfs (trickle)</o-o1<></u>	)
Flow (from discharge measurement): <u>Ko-ol</u> cfs (trickle) Samples Collected (check box)	) as
Flow (from discharge measurement): <u>Sool</u> cfs (trickle) <u>Samples Collected (check box)</u> January—December Monthly Water:	
Flow (from discharge measurement): <u>Samples Collected (check box)</u> January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite	
Flow (from discharge measurement):       So of cfs         Samples Collected (check box)         January—December Monthly Water:         Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite         Nitrogen (unfiltered):       Image: Collected (check box)         Dissolved Phosphorus and Nitrogen (field filtered):       Image: Collected (check box)	
Flow (from discharge measurement): Sool cfs (trickle) Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite Nitrogen (unfiltered):	

No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1		1	/
2			1.
3		/	-
4		/	
5		/	
6		/	
7		/	
8	1		
9			
10			
11	1		
12	1	-	
13	/		
14			
15			
16			
17			
18	1		
19			

#### **Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float 2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5 May-September: Algae Collection for Chlorophyll a

Q

Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): \_\_\_\_\_

Collection Device (sum # transects per Device)	Quantity
Rubber Delimiter (Area=12,6cm <sup>2</sup> )	1.0
PVC Delimiter (Area=12.6cm <sup>2</sup> )	
Syringe Scrubber (Area=5.3cm <sup>2</sup> )	
Other (Area= )	100
Number of Transects Sampled (0-11)	
Composite Volume (mL)	
Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)	

#### Discharge Measurement

1st Measurement = left bank (looking downstream)

Site:	RY	Da	ate: 8(14	118	cover, May—Se	KH JJF,	BJ	/		/	
		Macroalgae	Presence/Abs	ence (P/A) a	nd Water Depth	n (mm/ft/in)	/	Densiome Count cov	ter (0-17) ered dots		Photo (✓ when Taken)
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α						/					
AB		A			/						
В					/		/				
BC		100			/	/					
С				/		/					
CD				/							
D	·			/	/						
DE				1							
E			1-	/							
EF		/	P	/							
F		/	0,	/			1				
FG											
G	/		/								
GH	/										
H	/	./									
н		/			i					_	
1											
IJ											
J	/										
JK											
к											

## Ventura River Algae TMDL Event Details

	DETAILS
	(Month Year): SEPTEMBER 2018 Date: 914/18+9/5/18
Crew Me	embers: K.HAHS, C. GUZMAN, B. JONES (ABC)
Weather	r (circle): Clear (Partly Cloudy) Overcast / Showers / Rain / Other
Event Ty	ype (check): The preceding three days)
Notes :	□ Wet (days with ≥0.1" rain and the three days following) Y51 85 #05E1042
	Beckmon 255 # 2151

Photos Taken: Upstream / Downstream
Photos Taken: Upstream / Downstream
Photos Taken: Upstream / Downstream
Photos Taken: Upstream / Downstream

UNSAMPLED TMDL SITES		
Site ID:CL	Time: 0.845	Photos Taken: Upstream / Downstream
Flow Status : (Dry) Ponded	/ Flowing (Estimated Flow: cfs)	
	ving):	
Notes:		
Site ID: RY	Time: 09 1000	Photos Taken: Upstream / Downstream
	/ Flowing (Estimated Flow: cfs)	
	ving):	
Notes:		
Site ID: SA	Time: 1010	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded	/ Flowing (Estimated Flow: cfs)	
Reason not sampled (if flow	/ing):	
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
	/ Flowing (Estimated Flow:cfs)	There's raken opsicially bounstically
	/ing):estimated fromest,	
Notes:		

# Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 2

Ventura River Algae TMDL—Estuary Details

Date: 9/5/18	1350
Ocean Inlet (circle one): Open / Restricted	d Closed
Windy / Strong Wind _ Wind Dire	ection: Blowing From / To
ed-tipe plant on unter on seof	estrey, Dra anat deal bird both
0	J Jul
	Ocean Inlet (circle one): Open / Restricter Time of Low Tide: <u>1330</u> Time of I

# TRANSECT 1

In Situ Measurements (Measure at Floating M	acroalgae Quadrat 1, Transe	ect 1)	Water Samples Collected (check	box)			
Monthly (Jan-Dec):           pH:         8*15         pH units         EC:         2.365           DO:         7-47         mg/L         SC:         2.434           DO:         88-3         %         Salinity:         1.3	μS/cm	<u>23.5 °</u> c	[Collect at Floating Macroalgae C Monthly Water (Jan—Dec): Nitrogen, total and dissolved: Phosphorus, total and dissolved:	Quadrat 1, Transect 1]			
Photos:   Oceanward  Landward	Start Time: 1352	End Time: 1401	Nitrate + Nitrite as Nitrogen:	3			
Start Latitude: 34-27448	The second s	9.30699	Dry Season Algae (May-Sep):				
End Latitude: 34-27449		19.30731	Chlorophyll a (phytoplankton):	×			
PVC Latitude:	PVC Longitude:		Volume filtered per sample:				

		MACROALGAE—LAND BASED					FLOATING MACROALGAE							
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	0.7	7.1	8.9	13-3	17.4	20.7	23.8	25-3	26.7	28.2	-			
Water Depth (must be ≤ 0.3 m)	-	-									0.3			
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh 2 Int 3 Des Dd	Frsh Int Des Dd	Frsh Int 7 Des Dd	Frsh Int 2 Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int I Des Dd	Frsh Int Des Dd						
No. Crosshairs with Macroalgae Present	5	0	7	2	0	0	1	Ō	0	D	0	0	0	0
No. Crosshairs with Macroalgae Absent	44	49	42	47	49	49	48	49	49	49	49		-	->
Crosshair Total (must equal 49)	49							-		2	49			-

15/490

0/196

#### Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 2 of 2

Ventura River Algae TMDL- Estuary Transect Measurements Date: 915/18 Crew: KH, 65

TRANSECT 2														
Photos: @ Oceanward Dandw	vard					Start Time:	140	5		End	Time:	415		
Start Latitude: 34-27457	_					Start Longi	tude: —	119.3	0746	S				
End Latitude: 34:27470	4					End Longitu		119.3						1
PVC Latitude:						PVC Longit								
		-		MAC	ROALG	AE-LAND B	ASED	_			F	LOATING N	ACROAL	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	0.7	71	Big	13-3	17.4	20.7	23.8	25.3	26.7	28.Z	-			-
Water Depth (must be ≤ 0.3 m)						-					0.3		-	>
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int 14 Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int H Des Dd	Frsh Int 5 Des Dd	Frsh Int Des Dd	Frsh Int 2 Des Dd	Frsh Int 7 Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	14	0	0	0	0	4	5	6	2	7	0	0	0	0
No. Crosshairs with Macroalgae Absent	35	49	49	49	49	45	44	43	47	42	49	-	-	7
Crosshair Total (must equal 49)	49		-		-	-					49			->
TRANSECT 3							35 4						196	
Photos: Oceanward QLandw						Start Time:				End	Time:	435		
Start Latitude: 34-2-7499	34	274	74	_	T.	Start Longi		19+3	017	5 -	119.30	768	_	
End Latitude: 34.27499						End Longitu		119.3	0775	5				
PVC Latitude:			_			PVC Longit	ude:	_						
				MAC	ROALG	AE-LAND B	ASED				F	OATING M	ACROALG	AE
Quadrat	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Distance (m)	0.7	7.1	8.9	13.3	17.4	20.7	23.8	25.3	26.7	28.2	-	-		-
Water Depth (must be $\leq$ 0.3 m)	-					-	-				0.3			$\rightarrow$
Condition [Frsh=Fresh, Int=Intermediate, Des=Dessicated, Dd=Dead]	Frsh Int 14 Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int o Des Dd	Frsh Int I Des Dd	Frsh Int 5 Des Dd	Frsh Int 3 Des Dd	Frsh Int M Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd	Frsh Int Des Dd
No. Crosshairs with Macroalgae Present	104	0	0	30/5	4	7	1	15	13	14	0	0	0	6
No. Crosshairs with Macroalgae Absent	1\$5	49	49	46	145	42	48	34	36	35	49	-		
Crosshair Total (must equal 49)	49				-		-		-	$\rightarrow$	49			7

63/490

0/196

Event ID (Month Year): SEPT 2018
Site ID: MOL - RI
Date/Time: 91518 1150
Crew Members: KA, CG, BJ
1.1.2
Latitude/Longitude: 34 - 28045 -119 30848
Flow (circle one): Flowing/ Ponded / Dry
Wind Strength:
Calm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy
Wind Direction: Blowing (circle one) From / To
Photos (check): Upstream Downstream
Notes (e.g. homeless, wildlife, horses, swimming/recreation,
discharge comments, etc.) : Graffit avtist working
on pylon (notinear Water) wy woman.
Main w/ large, shoothed Enile near "A", Sow
us and left the trach (span stamme
laundy detegrit etc.)
January-December Monthly In Situ Measurements:
pH: 8-14 pH units EC: 518 µS/cm
DO: 7-14 mg/L SC: 1645 µS/cm
D0: <u>30-3</u> % Salinity: <u>0-8</u> ppt
Water Temp: _21+0_°C
Flow (from discharge measurement).
Flow (from discharge measurement): 2.03 cfs
Flow (from discharge measurement): <u>293</u> cfs
Samples Collected (check box)
Samples Collected (check box) January—December Monthly Water:
Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):
Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):
Samples Collected (check box) January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):

No.	Distance	Denth (fr)	Velocity
NO.	from Left Bank (ft)	Depth (ft)	(ft/sec)
1	4.2	Ð	0
2	4.3	0.5	0.07
3	5.0	0.6	0.17
4	6.0	0.7	0.08
5	7.0	0.0	0.25
6	8.0	0.6	0.35
7	9.0	0.7	0.48
8	10.0	0.8	0.37
9	11.0	0.7	0.25
10	12.0	0.3	0.39
11	13.0	0.4	0.37
12	14.0	0.4	0.24
13	15.0	0.4	0.19
14	16.0	0.6	0.19
15	17.0	0.8	0.09
16	18.0	0.8	0.10
17	18.9	0	0
18			
19		3	
20			

#### **Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float 2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5 May-September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): \_150 **Collection Device** Quantity (sum # transects per Device) Rubber Delimiter (Area=12.6cm<sup>2</sup>) PVC Delimiter (Area=12.6cm<sup>2</sup>) 2 8 Syringe Scrubber (Area=5.3cm<sup>2</sup>) Other (Area= ) Number of Transects Sampled (0-11) 440 Composite Volume (mL)

25

Chlorophyll a Volume

(use GF/F filter, 25 mL preferred volume)

Discharge Measurement

1st Measurement = left bank (looking downstream)

 Ventura River Algae TMDL Transect Measurements (for percent cover, May—September)

 Site:
 R1
 Date:
 91518
 Crew:
 KH

Crew: KH CG. 85

		Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)				Densiometer (0-17) Count covered dots				Photo (✓ when Taken)	
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	1-85	7A	24A	26A	31A	5A	17	17	12	12	$\checkmark$
AB	2.3	OA	15A	40A	36A	9A					
В	3.5	(OP)	35A	32A	36A	22A	17	17	17	17	
BC	4-8	OA	57A	48A	49A	9A					
с	3.85	OA	55A	62A	55A	30A	17	15	17	17	
CD	3.30	OA	OA	62A	52A	26A					
D	3.65	OA	55A	55A	33 A	16A	17	17	17	17	
DE	4.5	OA	40A	GIP	31A	14A					
E	4-2	OA	(36P)	32A	34A	4A	14	5	17	16	
EF	3-85	OA	43A	34A	32A	OA					
F	3-40	260	29A	(P)	19A	4A	16	17	17	17	V
FG	3.8	OA	37A	40A	36A	6A			-		
G	2.8	OA	29A	46A	24A	20	17	17	17	17	
GH	2.9	OA	30 A	44A	(42P)	(15P)					
Н	1.5	OA	19A.	(ISP)	(6P)	IA	17	17	17	17	
HI	2-5	INALES	GD	35A	UD	2A					
1	2.7	OA	(IP)	(20P)	32A	2A	16	17	17	15	
IJ	2.75	2A	30A	33A	29A	OA					
1	1.4	OA	18A	18A	14A	oA	17	15	14	16	
JK	1.6	OA	13A	ISA	17A	OA					- P
к	8.5	OA	HHA	69A	67A	OA	6	8	16	5	$\checkmark$

**Discharge Measurement** 

Event ID (Month Year): Supt 2018	1
Site ID: TMOL-R2	I
Date/Time: 91518 0945	I
Crew Members: KH, CG, BJ	
Latitude/Longitude: 34-33941 -119-29726	I
Flow (circle one): Flowing / Ponded / Dry	I
Wind Strength:	I
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	I
Wind Direction: Blowing (circle one) From / To	I
Photos (check):  Upstream Downstream	
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	
discharge comments, etc.) :	
151 85 # OSE1042	I
Hampless ramps + gardin (now forced) ~ CD-F	I
	I
	_
January—December Monthly In Situ Measurements:	٦
January-December Monthly In Situ Measurements: pH: 7-96 pH units EC: 1214 µS/cm	1
pH: 7-96 pH units EC: 1214 µS/cm	
pH: <u>7.96</u> pH units EC: <u>1214</u> μS/cm DO: <u>6-84</u> mg/L SC: <u>1269</u> μS/cm DO: <u>79-5</u> % Salinity: <u>0.6</u> ppt	
pH: <u>7.96</u> pH units EC: <u>1214</u> μS/cm DO: <u>6-84</u> mg/L SC: <u>1269</u> μS/cm DO: <u>79-5</u> % Salinity: <u>0.6</u> ppt Water Temp: <u>22-7</u> °C	
pH: <u>7.96</u> pH units EC: <u>1214</u> μS/cm DO: <u>6-84</u> mg/L SC: <u>1269</u> μS/cm DO: <u>79-5</u> % Salinity: <u>0-6</u> ppt	
pH: <u>7.96</u> pH units EC: <u>1214</u> μS/cm DO: <u>6-84</u> mg/L SC: <u>1269</u> μS/cm DO: <u>79-5</u> % Salinity: <u>0-6</u> ppt Water Temp: <u>22-7</u> °C	
pH: <u>7.96</u> pH units EC: <u>1214</u> μS/cm DO: <u>6-84</u> mg/L SC: <u>1269</u> μS/cm DO: <u>79-5</u> % Salinity: <u>0.6</u> ppt Water Temp: <u>22-7</u> °C	
pH: 7.96 pH units EC: 1214 $\mu$ S/cm DO: 6.84 mg/L SC: 1269 $\mu$ S/cm DO: 79.5 % Salinity: 0.6 ppt Water Temp: 22.7 °C Flow (from discharge measurement): 2.61 cfs	
pH: 7.96 pH units EC: 1214 $\mu$ S/cm DO: 6.84 mg/L SC: 1269 $\mu$ S/cm DO: 79.5 % Salinity: 0.6 ppt Water Temp: 22.7 °C Flow (from discharge measurement): 2.61 cfs Samples Collected (check box)	
pH: 7.96 pH units EC: 1214 µS/cm DO: 6.84 mg/L SC: 1269 µS/cm DO: 79.5 % Salinity: 0.6 ppt Water Temp: 22.7 °C Flow (from discharge measurement): 2.61 cfs Samples Collected (check box) January-December Monthly Water:	
pH: 7.96 pH units EC: 1214 µS/cm DO: 6.84 mg/L SC: 1269 µS/cm DO: 79.5 % Salinity: 0.6 ppt Water Temp: 22.7 °C Flow (from discharge measurement): 1.61 cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	
pH: 7.96 pH units EC: 1214 $\mu$ S/cm DO: 6.84 mg/L SC: 1269 $\mu$ S/cm DO: 79.5 % Salinity: 0.6 ppt Water Temp: 22.7 °C Flow (from discharge measurement): 2.61 cfs Samples Collected (check box) January-December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):	

Buoya (Use only if velo	erred)	ethod (prefe	ocity Area M	Vel
Distance (ft)	Velocity (ft/sec)	Depth (ft)	Distance ,from Left Bank (ft)	No.
Float Time (sec)	8	1.1	3.8	1
Float Re	0.02	1.5	6.0	2
	0.10	1.2	7.0	3
Width	0.24	0.10	8.0	4
Depth 1	0.12	1.3	9.0	5
Depth 2	0.42	1.1	10.0	6
Depth 3	0.46	1.3	11.0	7
Depth 4	0.83	0.9	12.0	8
Depth 5	0.35	8.0	13.0	9
May—September: A Reach Length (150 n	0.14	0.5	14.0	10
f wetted width > 10	-0.02	0.9	15.0	11
Collectio	-0.08	0.9	16.0	12
(sum # transe	0.12	0.85	17.0	13
Rubber Delimiter (Ar	-0.04	0.75	18.0	14
PVC Delimiter (Area=	0	Ð	19.0	15
Syringe Scrubber (Ar				16
Other (Area=				17
Number of Transects				18
Composite Volume (			-	19
Chlorophyll <i>a</i> Volum use GF/F filter, 25 m				20

#### **Buoyant Object Method** (Use only if velocity area method not possible) Float 1 Float 2 Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper Middle Lower Section Section Section Width Depth 1 Depth/2 Depth 3 Depth 4 Depth 5 May-September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): \_\_\_\_\_150 **Collection Device** Quantity (sum # transects per Device) Rubber Delimiter (Area=12.6cm<sup>2</sup>) 4 0 PVC Delimiter (Area=12.6cm<sup>2</sup>) 7 Syringe Scrubber (Area=5.3cm<sup>2</sup>) Other (Area= ) Number of Transects Sampled (0-11) 582 Composite Volume (mL)

Chlorophyll a Volume (use GF/F filter, 25 mL preferred volume)

05

Site:	R2			SII8	cover, May—S	KH CG	,65					
		Macroalgae	Presence/Abs	sence (P/A) a	nd Water Dept	h (mm/ft/in)			eter (0-17) wered dots		Photo (✓ when Taken)	
Transect	Wetted Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream	
Α	5.3	OA	15 A	26A	22A	IA	12	8	15	8		-
AB	5-05	OA	DRY	5.A	GP	19A						i.
В	4.8	OA	IIA	40A	47A	GA	<b>X</b> 8	14	16	7		-
BC	4-3	OA	26A	36A	33A	4A						ř.
с	3415	OA	(OP)	25A	32A	3A	15	17	17	17		
CD	4.45	OA	14A	(28)	OA	(4P)						horelessa
D	6.3	OA	19A	20A	24A	.OA	#17	12	14	12		
DE	5.3	OA	15 A	20 A	IOA	22A		Taras				E .
E	7-35	OA	(15P)	ISA	27A	7A	17	14	2	13		
EF	\$4.87	GA	50P	45A	OD	8A						de
F	6.7	LOA	(80)	(220)	(220)	2A	17	15	2	9	$\checkmark$	garden
FG	7.0	OA	(25P)	(22P)	33A	4A			C. Sale	and the second		
G	6.0	OA	41A	35A	32A	IIA	17	14	15	17		
GH	6.7	OA	37A	32A	22A	1A		io .			1. 1. 1.	
Н	4.6	AP	19 A	(OP)	GP	4A	10	7	3	6		-
HI	7-2	.OA	27A	15A	15 A	3A	in the second	-	-			
1	6-25	ot.	4A	DRY	(9P)	19A	17	14	15	16		
IJ	6.0	60	17A	DRY	(16P)	9A						
J	9.0	OA	35A	30	OA	19A	DA17	17	17	14		
JK	6.3	OA	49A	\$22A	16A	12A					-	
к	6.45	OA	36A	43A	37A	26A	16	12	12	10	/	1 mm

102

- 67

Discharge Measurement 1st Measurement = left bank (looking downstream)

Event ID (Month Year): SEPT 2	018
Site ID: 9/5/18 TWOL-R3	1
Date/Time: 9/5/18 0	740
Crew Members: KH, BJ, CG	
Latitude/Longitude: 34-34592 -110	1.29989
Flow (circle one): Flowing) Ponded / Dry	
Wind Strength:	-
Calm Light Breeze / Moderate Breeze / Strong Bree	ze / Windy
Wind Direction: Blowing (circle one) From / To	
Photos (check): Dypstream Downstree	am
Notes (e.g. homeless, wildlife, horses, swimmi	ng/recreation
discharge comments, etc.) :	
January-December Monthly In Situ Measurer	ments:
pH: 7,74 pH units EC: 1098 μS/cm	
DO: <u>6.91</u> mg/L SC: <u>1192</u> μS/cm	
DO: 77,7% Salinity: D.6 ppt	
Water Temp: <u>30.9</u> °C	
Flow (from discharge measurement):	_ cfs
Samples Collected (check box)	
January—December Monthly Water:	
Total Phosphorus, Total Nitrogen, and Nitrate +	Nitrite as
Nitrogen (unfiltered):	×
Dissolved Phosphorus and Nitrogen (field filtere	ed): 🙊
May—September Dry Season Monthly Algae:	
May—September Dry Season Monthly Algae: Chlorophyll <i>a</i> (filters—algae):	

V	elocity Area N	lethod (pref	erred)
No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)
1	7.4	0	Ø
2	8.0	04	0.01
3	9.0	0.3	-0.06
4	10:0	0.4	0,20
5	11.0	0.5	0.20
6	12.0	0.6	-0.02
7	13.0	0.85	0.31
8	14.0	0.65	0.33
9	15.0	1.0	0.11
10	16.0	0.8	0.16
11	17.0	0.6	0.16
12	18.0	0.6	0.03
13	19.0	0.2	-0.22
14	20.0	0.4	0.08
15	21.0	0	0
16			
17			
18			
19			
20			

#### **Buoyant Object Method** (Use only if velocity area method not possible) Float 2 Float 1 /Float 3 Distance (ft) Float Time (sec) Float Reach Cross Section (ft) Upper, Middle Lower Section Section Section Width Depth 1 Depth 2 Depth 3 Depth 4 Depth 5 May-September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m): \_\_\_\_\_50 **Collection Device** Quantity (sum # transects per Device) Rubber Delimiter (Area=12.6cm<sup>2</sup>) 2 PVC Delimiter (Area=12.6cm<sup>2</sup>) 0 Syringe Scrubber (Area=5.3cm<sup>2</sup>) 9 Other (Area= ) Number of Transects Sampled (0-11) Composite Volume (mL) 560 Chlorophyll a Volume С (use GF/F filter, 25 mL preferred volume) 0

	1-11
C POINT	N 194
Crew:	- · · ·

		Macroalgae Presence/Absence (P/A) and Water Depth (mm/ft/in)					Densiometer (0-17) Count covered dots				
Transect	Wetted <sup>M</sup> Width (ft)	Left Bank	Left Center	Center	Right Center	Right Bank	Center Left	Center Upstream	Center Right	Center Downstream	Upstream/ Downstream
Α	7.15	OA	(P)	(P)	14A	(2P)	14	4	17	4	1
AB	5.9	OA	2+7A	21A	20	2A					
В	11.0	OA	GP	(3P)	13A	1A	13	3	16	10	
BC	8-5	OA	30A	2A	(12P)	ZA					
с	9.5	OA	IOA	OP	26A	4A.	17	17	17	17	
CD	8.55	OA	(15P)	37A	53A	(3P)					
D	5-85	(OP)	(5P)	36A	72A	3A	13	3	16	123	
DE	4.9	OA	(27P)	37A	53A	2A				T	
E	3.8	OP	(IP)	26A	16A	6A	12	1	16	14	
EF	4-75	IA	(3P)	23A	41A	3A					
F	4.45	OP	(P)	20A	22A	(6P)	15	11	15	5	/
FG	3.40	(OP)	(2P)	19A	(14P)	4A			2	-	
G	3.7	OA	(P)	8A	12A	4A	16	10	9	4-	
GH	3.0	OA	2A	AB	12A	23A	1		_		0
н	3.7	OA	P	(2P)	(22P)	IIA	13	0	17	15	
HI	3-1	OA	OA	22 A	DRY	(82)					
" I	2.3	OP	15A	OD	22A	8A	17	17	17	17	
IJ	3-65	OA	GP	17A	(5P)	8A			-		-
J	5.2	AOA	(2P)	(OP)	Gze	20A	17	15	17	16	
JK	5-8	AO	OA	360	Q 46f		1.3				
К	4-85	(6P)	(26P)	(37P)	) 42A	30A	15	6	16	8	$\checkmark$

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## Ventura River Algae TMDL Event Details

te: 10/10/18
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owing)
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OBSERVATION SITES (RIVER FLOW)	
Ventura River at Highway 150 (Baldwin Road) Flow Status : Dry Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Santa Ana Blvd Flow Status : Dry Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Casitas Vista Road Flow Status : Dry/Ponded/Flowing (Estimated Flow: 2-3 cfs) Notes: Ponded west side. Flowing cost side	<b>Photos Taken:</b> Upstream / Downstream
Additional Observation Site:	
Flow Status : Dry / Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream

UNSAMPLED TMDL SITES		
Site ID: 유식 Flow Status : @ / Ponded / Flowing Reason not sampled (if flowing): Notes:	(Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
	Time: 08:00 (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
	Time: 15 (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Site ID: Flow Status : Dry / Ponded / Flowing Reason not sampled (if flowing): Notes:	Time: cfs)	Photos Taken: Upstream / Downstream

.

Fvent ID (Month Vear). Oct 2018		1st	<b>Dis</b> Measuremer	Discharge Measurement nent = left bank (looking o	Discharge Measurement 1st Measurement = left bank (looking downstream)			
Site ID:	Ve	Velocity Area Method (preferred)	lethod (pref	erred)	Buoyant Object Method	Buoyant Object Method	Method	(clticate
Date/Time: 10/10/18 0825		Distance		Velocity		Float 1	Float 2	Float 3
	Z	Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)			
Latitude/Longitude: Flow (circle one): (Flowing / Ponded / Drv	H-	л, Q	0	0	Float Time (sec)			
Wind Strength:	7	6.3	1.t	10.04	Float	Float Reach Cross Section (ft)	Section (ft)	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	m	0.0	9.0	20.0	k	Upper	Middle Section	Lower Section
Photos (check): dvDownstream	4	0-1-	5.0	0.20	Width	/		
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :	ъ	0.8	4.0	1+0	Depth 1			
* Into farming 0	9	06	9.0	10+04	Depth 2		/	
	2	0.0	.9-0	0.32	Depth 3			
	∞	0.11	0.55	0.26	Depth 4			and a second
January—December Monthly <i>In Situ</i> Measurements:	6	12-0	2.0	0.20	Uepth 5			1
pH: 7-47 pH units EC: 1067 μS/cm	10	13.0	0.55	07.0	May-September: Algae Collection for Chlorophyll a	Algae Colle	ction for Ch	lorophyll a
mg/L SC:% Salinity:	11	14.0	.0.6	11.0	if wetted width > 10 m):	0 m):	T ≪ I MIGEN Z	m 0<2 ;m (
The	12	15.0	9-0	0.0	Collecti	Collection Device		Quantity
Flow (from discharge measurement):	13	16.5	5.0	90.00	(sum #transects per Device)	ects per De	vice)	
	14	0-81	4-0	10.0-	Rubber Delimiter (Area=12.6cm <sup>2</sup> )	Area=12.6cr	n²)	X
Samples Collected (check box)	15			-	PVC Delimiter (Area=42.6cm <sup>2</sup> )	a=12.6cm <sup>2</sup> )		
January—December Monthly Water: Total Phosphorus . Total Nitrogen. and Nitrate + Nitrite as	16				Syringe Scrubber (Area=5̀.3ָcm²)	Area=5.3cm	(	
Nitrogen (unfiltered):	17				Other (Area=		-	
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transects Sampled (0-14)	ts Sampled	(14-0)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	ne		1
					(use GF/F filter, 25 mL preferred volume)	mL preferre	d volume)	

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downstream
(looking
left bank
surement =
1st Mea

Event ID (Month Year): OC 2018					,			
Site ID: R2	Ve	Velocity Area Method (preferred)	lethod (prefe	erred)	Buoyant Object Method [[]se only if velocity area method not notsible)	Buoyant Object Method if velocity area method not	Method ethod not no	(eithe)
Date/Time: 10/10/18 0930		Distance		Velocity		Float 1	Float	Float 3
	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)		/	
Latitude/Longitude:	-	0.5	0.1	-0. <sup>10</sup>	Float Time (sec)	1		
Wind Strength:	~	is is	5-1	10.0-	Float F	Float Reach Cross Section (ft)	Section (ft)	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Rlowing / circle one/From / To	- m	٩	1-3	0.03		Vepper	Middle Section	Lower Section
Photos (check):	4	7-5	9.0	01.0	Width			
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	'n	8.5	9.0	0.18	Depth			
	9	5,2	1.25	10.0	Depth 2			
	2	10.5	]-1	0.47	Depth 3			
	∞	Sill	1.3	0-29	/ Depth 4			
January—December Monthly <i>In Situ</i> Measurements:	6	12-51	8.0	0.52				
pH:pH units EC:µS/cm	6	13.5	5-0	0.32	May-September: Algae Collection for Chlorophyll a Deach Length (150 m if wetted width < 10 m 250 m	Algae Colle	twidth < 10	Inv 250 m
DO: 22.2 mg/L SC: LLSC: LSC: LSC: DO: 22.2 % Salinity: DD: 22.2 %	Ħ	5.41	50	30.0	if wetted width > 10 m):	0 m):	מאומרוו דיר	1007 10
0: 24.1 °C	12	15.5	0.8	-0.03	Collect	Collection Device	1	Quantity
Flow (from discharge measurement): 1-1 - cfs	13	0-L1	0.0	+0.03	(sum # trans	(sum # transects per Device)	vice)	
	14	0	0	0	Rubber Delimiter (Area=12.6cm <sup>2</sup> )	Area=12.6c	m <sup>2</sup> )	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6cm <sup>2</sup> )	a=12.6cm <sup>2</sup> )		
January—December Monthly Water: Total Phoenhorus Total Nitrogen and Nitrate 4 Nitrite as	16				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Apea=5.3cm	2)	
	17				Other (Area=		_	
Dissolved Phosphorus and Nitrogen (field filtered): Det	18				Number of Mansects Sampled (0-11)	cts Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	e (mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	me		
					I (use GF/F filter, 25 mL preferred volume)	mL preterre	ed volume)	

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EVENUE IN (INIONULI TEAR); OLL 2018								
Date/Time: 10/18/1% 1540	A	Velocity Area Method (preferred)	lethod (pref	erred)	Buoyant Object Method (Use only if velocity area method not possible)	Buoyant Object Method if velocity area method not	t Method nethod not p	ossible)
S: KN K		Distance	Douth (4)	Velocity		Float 1	Float 2	Float 3
		Bank (ft)	Deptru (TT)	(ft/sec)	Distance (ft)		1	
Latitude/Longitude: Flow (circle one): (Flowing / Ponded / Drv	-	6.7	1.0	20.0	Float Time (sec)		/	
Wind Strength:	2	0.00	9 0	21.0	Float I	Float Reach Cross Section (ft)	Section (ft)	
Calm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	m	50	0.65	10.0		Upper Section	Middle Section	Lower Section
Photos (check): @Upstream Downstream	4	10.01	0.0	92.0	Width	1		
Notes (e.g. nomeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :	2	0 11	F.0	0.28	Depth 1			
	9	12.0	8.0	0:28	Depth			
	2	13.0	SLO	0.25	Depth 3			
	~~~~	Dit	0-6	0.21	Depth 4			
January-December Monthly In Situ Measurements:	6	15-0	9-0	0.19	c updan			
7-90 pH units EC: 15	10	0.91	4.0	0-72	May-September: Algae Collection for Chlorophyll a	Algae Colle	ection for C	lorophyllo
DO: 1 2 mg/L SC: 1 by mg/cm DO: 81-7 % Salinity: 0-9 ppt	Ħ	5.1	H. 0	0.12	Reach Length (150 m if wetted width $\leq 10$ m; 250 m if wetted width $> 10$ m):	0 m):	a wigth s 1(	1 m; 250 m
	12	0.51	59.0	1010	Collect	Collection Device	1	Quantity
Flow (trom discharge measurement): 1.2) cfs	13	500	0.85		(sum # transects per Device)	sects per De	vice	
	14	21.0	0	0	Rubber Delimiter (Area=12.6cm <sup>2</sup> )	Area=12.6c	m <sup>2</sup> )	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6gm <sup>2</sup> )	a=12.6gm <sup>2</sup> )		
January—December Monthly Water: Total Phosphorus . Total Nitrogen. and Nitrate + Nitrite as	16				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Area=5.3cm	2)	
Nitrogen (unfiltered): 🔏	17				Other (Area=	/	(	
Dissolved Phosphorus and Nitrogen (field filtered): 🥱	18				Number of Transects Sampled (0-11)	cts Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	i (mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	me		
					(use GF/F filter, 25 mL preferred volume)	mL preterre	ed volume)	

Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 1

<u>Ventura River Algae TMDL—Estuary Details</u>	
Site ID: <u>TMDL-Est</u> Event ID (Month Year) <u>: OCT 201중</u> Date/Time Crew Members: Kh, 또문	Date/Time: 10/10/18/ 11:25
ily Cloudy / Overcast / Rainy / Foggy Slack / N/A seze / Moderate Breeze / Strong Breeze / Wir gs, swimming/recreation): Hand	Ocean Inlet (circle one): Open / Restricted Closed       Time of Low Tide:       Indy / Strong Wind       Wind Direction:
In Situ Measurements (Measure at Floating Macroalgae Quadrat 1, Transect 1)	<u>Water Samples Collected</u> (check box)
Monthly (Jan – Dec):EC:Doi:Land <thland< th="">Land<thland< th=""><thland< th="">La</thland<></thland<></thland<>	[Collect at Floating Macroalgae Quadrat 1, Transect 1] Monthly Water (Jan—Dec): Nitrogen, total and dissolved:
Salinity: 🕂 💭 ppt	Phosphorus, total and dissolved: The Nitrate + Nitrite as Nitrogen:
Photos: AQceanward AQceanward	
Sample Latitude: 강나. 2 가 나오크 S나	

Sample Longitude ~1/3 . 3071 300 235

## Ventura River Algae TMDL Event Details

EVENT DETAILS
Event ID (Month Year):
Crew Members: L. MEEKER, K. FORTNER, W.B. CAREY - Obs. photos
Weather (circle): Clear / Partly Cloudy / Overcase / Showers / Rain / Other
Event Type (check): CO.1" rain per day for the preceding three days)
□ Wet (days with ≥0.1" rain and the three days following)
Notes: A small rainevent occurred set offer signafing and before The
observation photos were taken it did not establish (knoch vil) believen
The upper and lower watershed

27/18	
cfs)	Photos Taken: Upstream / Downstream
	1
cfs)	Photos Taken: Upstream / Downstream
	1 .1
cfs)	Photos Taken: Upstream / Downstream
cfs)	Photos Taken: Upstream / Downstream
	_cfs) _cfs)

ah.

UNSAMPLED TMDL SITES		
Site ID: R4	Time: 9:30 wing (Estimated Flow:	Photos Taken; Upstream / Downstream
Flow Status : Dry/ Ponded / Flow	wing (Estimated Flow:	
Reason not sampled (if flowing):	1-	
Notes:		
Site ID: San Antonia	Time: <u>9:47</u>	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flow	wing (Estimated Flow: cfs)	energy and a second second second
Notes:		
Site ID:	Time:3`20	Photos Taken: Upstream / Downstream
Flow Status ; Dry / Ponded / Flow	wing (Estimated Flow: cfs)	
Reason not sampled (if flowing):		
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flow	ving (Estimated Flow: cfs)	
Notes:		

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Event ID (Month Year):       10       2       10       2       10       2       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10
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Ventura River Algae TMDL Fie ( \_ \_ \_ \_

Crew Members:	10	Bank (ft) 3.0 5.0 5.0 5.0 10 5.0 10 10 12	0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-0.03 -0.04 -0.04 -0.06 -0.06 -0.06 -0.06 -0.06 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07 -0.07	Float Time (sec)       Middle         Float Reach Cross Section (ft)         Float Reach Cross Section (ft)         Niddle       Lower         Width       Section       Section         Depth1       Section       Section         Depth2       Depth3       Section         Depth5       Depth5       Section         May-September: Algae Collection for Chlorophyll g         Reach Length (150 m if wetted width ≤ 10 m; 250 m	e (sec) Float Reach Crøss Section (ft) Float Reach Crøss Section (ft) Middle Section Section h1 h2 h2 h2 h2 h5 h5 th 4 th 5 th 5 th 5 th 5 th 5 th 5 th 5 th 5	Algae Collect	ection (ft) Middle Section t	Lower Section D m; 250
77 PP7 011 10 79977			2	3	Float Ime	Seci	1		
itude/Longitude: 34.34591 +-114. 6117	1	2.0	0	0	F	oat Reach	ross Sec	tion (ft)	
ି ଜ	4	5.0	C	0	Flo	oat Reach	Cross Sec	tion (ft)	
1	2	4.7	0.4	10.01		up I	per N		Lower
nd Strength: Windy Breeze / Moderate Breeze / Strong Breeze / Windy	ω	0	5	0.06		Sec	-	+	Section
Im /Light Breeze / Wodel are breeze / Strong / To		50	0.0	1900	Width	>			
Ind Direction: Blowing (circle one) From / 10	4	6.5	0.4	8:0	Width	1	-		
otos (check): AUpstream		1	N II	2 - 4	Depthy				
otes (e.g. homeless, wildlife, horses, swimming/recreation,	σ	7.0	0.4	0.00	Depth	2		-	
scharge comments, etc.) :	6	4.	0.2	0.05	Depth	ω			
	7	9.0	150	\$ 0.04	Depth	4	_		7
		5	C	50,48			_		
	•	-	2-0		Debu	ŀ	-		
the state of the Moseurements:	9	11	0.2	-0.01	Mav-Septe	mber: Alga	e Collect	ion for Ch	lorophy
-VIBL	10	2	0.2.	-0.03	Reach Lengt	h (150 m if	wetted	vidth < 10	m; 250
10.30 mg/L SC: 1181	11	4	0.7	0.74	if wetted width > 10 m):	4th > 10 m	Ĩ	1	
% Salinity:	12	6	0.3	0.31		Collection Device	Device	Ce	Quantury
rge me	13	1	0.2	0.26	n. hbor Delimiter (Area=12.6cm <sup>2</sup> )	miter (Are)	1=12.6cm	2)	
	14	20	0.6	0.23	nuc Delimiter (Area=12.6cm <sup>2</sup> )	er (Area=1	2.6cm <sup>2</sup> )		
Collocted (check box)	15	(-) (-)	N.4	0.35	corubber (Area=5.3cm <sup>2</sup> )	hhor	a=5.3cm <sup>2</sup>		
January-December Monthly Water:	16	14	0	0	Synnge ser	- Jan	No house	-	
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	17							10 11	1
Nitrogen (unfiltered):		-			Number of Transects Sampled (U-11)	Transects	Sampled	(TT-O)	
Dissolved Phosphorus and Nitrogen (field filtered):	18				Composite Volume (mL)	Volume (r	<u>۱</u>		
					Composition				+
	19	-			Chlorophyll a Volume				-

Event ID (Month Year): 10 V 2018		1st M	Di: /leasureme	Discharge Measu nent = left bank (	Discharge Measurement 1st Measurement = left bank (looking downstream)			
Site ID: VR Z	Ve	Velocity Area Method (preferred)	ethod (pref	erred)	(Illea apply if yol	Buoyant Object Method	Method	
Crew Members: Lora M Kellie F	25	Distance		Velocity	Float 1 Float 2 Floa	Float 1	Float 2	Float 3
211 000 LL 211 000 LL	į	Bank (ft)	nebru (ir)	(ft/sec)	Distance (ft)			
Flow (circle one): (Flowing) Ponded / Drv	4	3.5	3	0	Float Time (sec)			
Wind Strength:	2	52	12	20	Float R	Float Reach Cross Section (ft)	Section (ft)	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	ω	01	0.6	0.4		Upper	Middle	Lower
Photos (check): Dupstream	4	9.0	0.9	0.1	Width			
discharge comments, etc.) :	u	11.0	9.0	560	Depth 1			
-	6	021	0.1	6.52	Depth 2			
	7	0.5]	- mart	0.36	Depth 3			
	8	17.0	581	0.6	Depth 4			
January—December Monthly In Situ Measurements:	9	19.00	1.35	0.0	C mdac			
pH: 1 · 85 pH units EC: 1232 µS/cm	10	21.0	.0.	0.1	May—September: Algae Collection for Chlorophyll a	ligae Collec	tion for Ch	lorophyll a
Salinity: 0.6	- 11	23.2	0.4	-0.02	Reach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m):	n if wetted m):	widtḩ ≤ 10	) m; 250 m
Flow (from discharge measurement): 6.84	12	238	0	0	Collectio	Collection Device		Quantity
	13				(sum # transects per Device)	cts per Dev	ice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup> )	.ea=12.6cm	<sup>2</sup> )	
Samples Collected (check box)	15		T		PVC Delimiter (Area=12.6cm <sup>2</sup> )	=12.6cm <sup>2</sup> )		
Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as	16		Š		Syringe Scrubber (Area=5.3cm <sup>2</sup> )	ea=5.3cm <sup>2</sup> )		
Nitrogen (unfiltered):	17				Other (Area=		-	
uissoived Phosphorus and Nitrogen (Held filtered): 一百	18				Number of Transects Sampled (0-11)	Sampled (	0-11)	
May-September Dry Season Monthly Algae:	19				Composite Volume (mL)	mL)		
cinorophyn a (inters—algae):	20				Chlorophyll a Volume	10		
					(use GF/F filter, 25 mL preferred volume)	L preferred	volume)	

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Ventura River Algae TMDL Field Data Sheet (Reaches 1—4) - Page 1 of 1

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ĺ		le	chlorophyll a Volume				3	Chlorophull a Ifilters-alaze).
		(mL)	Composite Volume (mL)				19	May—September Dry Season Monthly Algae:
	(11-0)	ts Sampled	Number of Transects Sampled (U-11)				18	Dissolved Phosphorus and Nitrogen (field filtered):
	-		Other (Area=				17	Nitrogen (unfiltered):
	-	a ca-J.John	Syluige or upper (Area-2.5cm)				16	January—December Monthly water. Total Phosphorus Total Nitrogen, and Nitrate + Nitrite as
	21	ma-5 2rm	Curings Combhor In				t	Samples Conected Crieck work
		=12.6cm <sup>2</sup> )	PVC Delimiter (Area=12,6cm <sup>2</sup> )				7	samples follerted (check box)
	fr <sup>2</sup> )	rea=12.6cr	Rubber Delimiter (Area=12.6cm <sup>4</sup> )				14	
	vice	cts per De	(sum # transects per Device)				13	Flow (from discharge measurement): <u>2</u> 22 cfs
Quantity	/	<b>Collection Device</b>	Collecti				12	Water Temp: <u>1, 2, 4</u> °C
1		(m):	if wetted width > 10 m):	0	Ø	28.0	11	DO:mg/L SC:µayuuu DO:% Salinity:% ppt
0 m; 250 m	ł width ≤ 1(	n if wetteo	Reach Length (150 m if wetted width ≤ 10 m; 250 m	-0.1	0.2	0.52	10	1.92 pH units EC: 1415
hlorophyll	ction for Ch	Vigae Colle	May-September: Algae Collection for Chlorophyll a	(U+U)	0.10	0.07		January—December Monthly In Situ Measurements:
			c undari /	A NL	7 12	117	٥	
			7-1	0.02	2.7	010	∞	
			Depth 4	0.24	1.0	19.0	7	
			Depth,3	0.77	0.00	1110		
			Depth 2	A du	N 92	うつ	n	discharge comments, etc.) :
			Depth 1	242	0.75	150	л	Notes (e.g. homeless, wildlife, horses, swimming/recreation,
		1	Width	0.1	h.s	13.0	4	Photos (check): 🗡 Upstream
Section	Section	Section		0.7	0.6	11.0	ω	Calm / Light Breeze / Moderate Breeze / strong Breeze / windy Wind Direction: Blowing (circle one) From / To
Lower	Middle	Upper		1000	D.L.	9.0	2	Wind Strength:
	Section (ft)	Float Reach Cross Section (ft)	Float Re	4		10		Flow (circle one): Flowing/ Ponded / Dry
	1		Float Time (sec)	$\geq$	0	2	1	Latitude/Longitude: 34-28197 -119 30900
1			Distance (ft)	(ft/sec)	Debay (14)	Bank (ft)	NO.	
Float 3	Float 2	Float 1		Velocity	Denth (ft)	Distance	2	WY
ssible)	Method thod not po:	Buoyant Object Method if velocity area method not	Buoyant Object Method (Use only if velocity area method not possible)	rred)	ethod (prefe	Velocity Area Method (preferred)	Vel	
								Event ID (IVIONTN Year):

Discharge Measurement

## Ventura River Algae TMDL Event Details

Event ID (Month Year): DECEMBER 2018	Date: 12/10/18
Crew Members: K. HAHS K. FORTNER	
Weather (circle): Clear (Partly Cloudy) Overcast / Showers / Ra	in / Other
Event Type (check): Dry (<0.1" rain per day for the prece	
□ Wet (days with ≥0.1" rain and the th	ree days following)
Notes: YS1 85 # 05E1126	
Bedmon 255 #215!	

OBSERVATION SITES (RIVER FLOW)	
Ventura River at Highway 150 (Baldwin Road) Flow Status : Dry / Ponded / Flowing (Estimated Flow: <u>~ 3</u> cfs) Notes:	<b>Photos Taken:</b> Upstream / Downstream
Ventura River at Santa Ana Blvd	/
Flow Status : (Dry) Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Casitas Vista Road	
Flow Status: Dry / Ponded (Flowing) (Estimated Flow: ~5_ cfs) Notes: Flowing, cast book	Photos Taken: Upstream / Downstream
Additional Observation Site:	
Flow Status : Dry / Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream

UNSAMPLED TMDL SITES			
Site ID:	Time: _	0750	Photos Taken: Upstream / Downstream
Flow Status (Dry) Ponded / Flowing	(Estimate	d Flow: cfs)	
Reason not sampled (if flowing):			
Notes:			
Site ID: <u>R4</u>	Time:	0825	Photos Taken: Upstream / Downstream
Flow Status Dry / Ponded / Flowing	(Estimate	d Flow: cfs)	Photos jaken. Opstream / Downstream
Reason not sampled (if flowing):	Locinace	u 110W (13)	
Notes:			
Site ID: SA	Time:	0835	Photos Taken: Upstream / Downstream
Flow Status Dry Ponded / Flowing	(Estimate	d Flow: cfs)	The cost taken. Opsil cally Downstream
Reason not sampled (if flowing):	,		
Notes:			
Site ID:	Time		Photos Tokon Unstrann / Davisstrann
Flow Status : Dry / Ponded / Flowing	(Estimate	d Flow: ofc)	Photos Taken: Upstream / Downstream
Reason not sampled (if flowing):			
Notes:			

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Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 1

Ventura River Algae TMDL—Estuary Details

Site ID: <u>TMDL-Est</u>	
Event ID (Month Year): DEC 2018	Date/Time: 12/10/18 1200 PW
Crew Members: KH KF	
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle one): Open// Restricted / Closed
Direction of Tide: Ebb / Flood / Slack / N/A	Time of Low Tide: 17 46 Time of High Tide: 10:10
Wind Strength: Calm / Slight Breeze / Moderate Breeze / Strong Breeze / 1	Strong Breeze / Windy / Strong Wind Wind Direction: Blowing From / To
Notes (e.g. homeless, wildlife, dogs, swimming/recreation): ~100	is in wher I and few of w birds . Esher a comment or it
High the ward shed by NW Que 12pr - 60.	

athly (lan Darl.		Anathic flow Deals	water samples collected [check box]
9H: <u>7.36</u> pH units EC: <u>135.70</u> μS/ 30: <u>11-00</u> mg/L SC: <u>25100</u> μS/ 30: <u>118-5</u> % Salinity: <u>15-3</u> ppt	EC: <u>19870</u> µS/cm SC: <u>25100</u> µS/cm ity: <u>15-3</u> ppt	Water Temp: <u> ५. </u> °C	ICollect at Floating Macroalgae Quadrat 1. Transect 1] Monthly Water (Jan – Dec): Nitrogen, total and dissolved: 政 Phosphorus, total and dissolved: 医
hotos:			Nitrate + Nitrite as Nitrogen:
Sample Latitude: 34-27480			
Sample Longitude - 11 9 - 3 07 3 6			

Site ID: R.I Date/Time: 12/10/18 1105	Ve	Velocity Area Method (preferred)	lethod (pref	erred)	Buc (Use only if ve	Buoyant Object Method (Use only if velocity area method not possible)	t Method ethod not p	ossible)
KH F	Q	Distance from Left	Donth (4)	Velocity		Float 1	Float 2	Float 3
2012/01/1		Bank (ft)		(ft/sec)	Distance (ft)			
Flow (circle one): Flowing / Ponded / Drv	-	00 I	0-75	0.36	Float Time (sec)	-	/	
Wind Strength:	7	0-01	0.8	0.5.0	Float	Float Reach Cross Section (ft)	Section (ft)	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	m	5.11	0-1	0.28		Upper	Middle Section	Lower Section
Photos (check): Dupstream	4	13.0	0-1	0.41	Width	1		
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments. etc.) :	ю	14.5	1.05	94.0	Depth 1			
	9	16.0	8-0	0.55	Depth 2			
	7	5. 1.1	5.0	0.53	Depth 3			
	80	0,51	0.7	0.39	Depth 4			
January-December Monthly <i>In Situ</i> Measurements:	σ	205	0	65.0	cundan			
2:03 pH units EC: 1/67	10	22.0	14	0.22	May-September: Algae Collection for Chlorophyll a	: Algae Colle	ection for C	hlorophyll o
DO: <u>여도 - 등 %</u> Salinity: <u>이 경</u> ppt	Ħ	24.0	Q	0	if wetted width > 10 m):	0 m IT wette 10 m):	a wiath ≤ 1	m 042%m 0
5.20	12				Collec	Collection Device	-	Quantity
Flow (from discharge measurement):	13				(sum # tran:	sum # transects per Device)	vice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup> )	(Area≃12.6ci	1/2 m	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6cm3	ea=12.6cm		
January—December Monthly Water: Total Phosphorus . Total Nitrogen . and Nitrate + Nitrite as	16				Syringe Scrubber (Areaz5.3cm <sup>2</sup> )	Area 5.3cm	<sup>2</sup> )	
Nitrogen (unfiltered):	17				Other (Area=	/	-	
Dissolved Phosphorus and Nitrogen (field filtered): -4	18				Number of Transects Sampled (0-11)	cts Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	e (mL)		
Chlorophyll a (filters-algae):	20				Chlorophyll a Volume	me		
					(use GF/F filter, 25 mL preferred volume)	mL preferre	ed volume)	

Discharge Mi			Dieer (IV	Discharge Measurement	ד) - ו מ3כ ב טו ב irement			
Event ID (Month Year):	1 .4	1st	Measuremer	vt = left bank (	1st Measurement = left bank (looking downstream)			
	Ve	Velocity Area Method (preferred)	1ethod (pref	erred)	Buoy	Buoyant Object Method	Method	
Date/Time:         12/10/19         1000           Crew Members:         KH         KT	-	Distance		Velocity	Float 1 Float 2 Floa	Float 1	Float/2	Float 3
	NO.	Bank (ft)	Debru (III)	(ft/sec)	Distance (ft)		/	
Flow (circle one): (Flowing / Ponded / Drv	1	0. 2	2-6	-0-23	Float Time (sec)			
	2	·	- () ()	1111	Float Re	Float Reach Cross Section (ft)	Section (ft)	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy		6	3	101		Upper	Middle	Lower
Wind Direction: Blowing (circle one) From / To	ω	۲ 0	+ +	-0.02		Section	Section	Section
Photos (check): QUpstream	4	0° %	0,9	0.03	Width			
<pre>votes (e.g. nomeless, witalife, norses, swimming/recreation, discharge comments, etc.) :</pre>	л	9.0	0.9	0 03	Depth 1			
YS1 85 # 05E1126	6	10.0	0.9	0.07	Depth 2			
	7	11.0	41.0	0-17	Dépth 3			
	8	12-0	0.9	0.40	Depth 4			
January—December Monthly In Situ Measurements:	9	0.51	1-05	51.0	pebul 2			
its EC: 1000	10	14 io	P.0	0:46	May-September: Algae Collection for Chlorophyll a	Igae Colle	ction for Ct	ilorophyll a
% Salinity: _	11	5.0	1.0	5-1	if wetted width > 10 m);	m):		11 0C2 11
H. 89	12	18.0	1-25	0-35	Collectio	Collection Device		Quantity
now (nom aschaige measurement).	13	17.0	1.1	0.73	(sum # transects per Devige)	cts per Dev	rige)	
	14	0.81	1.0	0-39	Rubber Delimiter (Area=12.5cm <sup>2</sup> )	ea=12.6cm	<sup>2</sup> )	
Samples Collected (check box)	15	19-0	58.0	0.13	PVC Delimiter (Area=12,6cm <sup>2</sup> )	=12,6cm <sup>2</sup> )		
Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as	16	20.0	8-0	44-0	Syringe Scrubber (Area=5.3cm <sup>2</sup> )	ea=5.3cm <sup>2</sup>		
Nitrogen (unfiltered):	17	21.0	0	0	Other (Area		-	
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transects Sampled (0-11)	: Sampled (	0-11)	
May—September Dry Season Monthly Algae:	19	Y			Composite Volume (mL)	mL)		
Chiorophyll a (filters—algae):	20	1			Chlorophyll a Volume	10		
					(use GF/F filter, 25 mL preferred volume)	L preferre	d volume)	

-		ne	Chlorophyll a Volume				20	Chlorophyll <i>a</i> (filters—algae):
		(mt)	Composite Volume (mť)				19	May—September Dry Season Monthly Algae:
	1 (0-11)	ts Sampled	Number of Transects Sampled (0-11)				18	Dissolved Phosphorus and Nitrogen (field filtered):
t	1		Other (Area=				17	Nitrogen (unfiltered):
-	(11	\rea=5.3cm	Syringe Scrubber (Area=5.3cm <sup>-</sup> )	0.23	0.6	21.8	16	January—December Monthly Water: Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as
	2	a=12.6cm <sup>-</sup> )	PVC Delimiter (Area=12.6cm)	0-15	0 7	21	15	Samples Collected (check box)
	)   )	Area=12.6c	Rubber Delimiter (Area=12.6cm )	0.13	5.0	00	14	
-	evice)	ects per De	(sum # transects per Device)	0-06	59.0	9	13	How (from discharge measurement):
Quantity		<b>Collection Device</b>	Collecti	0.22	1.1	8	12	3=3.9
. /		0 m):	if wetted width > 10 m):	3	ō	L	11	% Salinity:
10 m; 250	d width ≤	m if wetter	May—September: Algae Collection for Chlorophyli a Reach Length (150 m if wetted width ≤ 10 m; 250 m	0.39	1-15	16	10	Disco pH units EC: 0446
Chloroph	ation for			0.58	1.1	บ้า	9	January—December Monthly In Situ Measurements:
			Depth 5	0-33	1-0	5	~	
			Dépth 4	013	0.7	60	7	
			Depth 3	000	4.0	11	a	
			Depth 2	3				discharge comments, etc.) :
			Depth 1	Cp.C	6-75	11	л	Notes (e.g. homeless, wildlife, horses, swimming/recreation,
			Width	0.07	0-95	Ō	4	Photos (check):  Downstream
Section	Section	Section		0	9.0	9	ω	Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To
	Section (f	Float Reach Cross Section (ft)	Float R	0.01	5.0	00)	2	Wind Strength:
			Float Time (sec)	0	0	7	1	Flow (rircle one): (Flowing / Ponded / Dry
1	/		Distance (ft)	(ft/sec)	Debrii (ir)	Bank (ft)	NO. 5	
Float 3	Float 2	Float 1		Velocity	Donth (ft)	Distance		Crew Members: KY KF
possible)	: Method ethod not	Buoyant Object Method if velocity area method not	Buoyant Object Method (Use only if velocity area method not possible)	erred)	ethod (prefi	Velocity Area Method (preferred)	Velo	PC CO
-						ar.		Event ID (Month Year): DEC 2018

### Ventura River Algae TMDL Event Details

C.F.

EVENT DETAILS Event ID (Month	ar): JANLIMEY 2019 Date: 1/10/19
Crew Members:	K. HAHS K. FORTNER
Weather (circle):(	ear) Partly Cloudy / Overcast / Showers / Rain / Other
Event Type (check	□ Dry (<0.1" rain per day for the preceding three days)
Notes :	Wet (days with ≥0.1" rain and the three days following) (Rained Mon 1/7/19) 5185 # 05E1042

### **OBSERVATION SITES (RIVER FLOW)**

Ventura River at Highway 150 (Baldwin Road) Flow Status : Dry / Ponded Flowing (Estimated Flow: <u>~ 6</u> cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Santa Ana Blvd	· · ·
Flow Status : Dry / Ponded / Flowing (Estimated Flow: ~2 cfs) Notes:Flowing west change any.	Photos Taken: Upstream / Downstream
Ventura River at Casitas Vista Road	
Flow Status: Dry / Ponded / Flowing (Estimated Flow: ~ 6 cfs) Notes: ~ 2 cfs west side, ~ 4-6 cfs eastside.	Photos Taken: Upstream / Downstream
Additional Observation Site:	
Flow Status : Dry / Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream

### UNSAMPLED TMDL SITES

Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowir	g (Estimated Flow: c	fs)
Reason not sampled (if flowing):		
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowin	g (Estimated Flow: c	fs)
Reason not sampled (if flowing):		-,
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowin	g (Estimated Flow: c	fs)
Reason not sampled (if flowing):		
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowin	g (Estimated Flow: ct	fs)
Reason not sampled (if flowing):		

Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 1

Ventura River Algae TMDL—Estuary Details	
Site ID: TMDL-Est	
Event ID (Month Year): JAN 2019	Date/Time: 1/10/19 1200
Crew Members: KH KF	
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle one): Open / Restricted / Closed
Direction of Tide: Ebb / Flood / Slack / N/A	Time of Low Tide: Time of Hish Tide:
Wind Strength: Calm //Slight Breeze //Moderate Breeze / Strong Breeze / Windy / Strong Wind	
Notes (e.g. homeless, wildlife, dogs, swimming/recreation):	E and a
the bern by bern this interes on cast Sal.	10-10-02-02-02-02-02-02-02-02-02-02-02-02-02

Monthly (Jan-Dec):       Control (Jan-Dec):         pH: <u>7-88 pH units</u> EC: <u>12 bus/cm</u> Water Temp: <u>C</u> pH: <u>7-88 pH units</u> EC: <u>12 bus/cm</u> Water Temp: <u>C</u> DO: <u>7 mg/L</u> SC: <u>10 us/cm</u> Water Temp: <u>C</u> DO: <u>7 mg/L</u> SC: <u>10 us/cm</u> Water Temp: <u>C</u> DO: <u>7 mg/L</u> SC: <u>10 us/cm</u> Water (Jan-Dec):         DO: <u>7 mg/L</u> SC: <u>10 us/cm</u> Monthly Water (Jan-Dec):         DO: <u>7 mg/L</u> SC: <u>10 us/cm</u> Witrogen, total and dissolved: <u>P</u> Do: <u>7 mg/L</u> <u>8</u> landward       Photos: poceanward <u>F</u> landward         Photos: poceanward <u>F</u> landward       Nitrate + Nitrite as Nitrogen: <u>F</u> Sample Latitude: <u>34.27484</u> Nitrate + Nitrite as Nitrogen: <u>F</u>	in Jiw Incasul circlins (Intersure at Floating Macroalgae Quadrat 1, Transect 1)	Water Samples Collected (check box)
EC: 14 Jus/cm Water Temp: C SC: しょS/cm Salinity: Dept rd をLandward    9・3の766	12/20	[Collect at Floating Macroalgae Quadrat 1, Transect 1]
614 % Salinity: 3 & ppt los: gOceanward をLandward ole Latitude: 3 4・2.7 4 8 4 ole Longitude - 11 9・3.0.7 6 6	SC: 16320 us/cm	Monthly Water (Jan-Dec):
ard Nitrate + Nitrite as Nitrogen:	Salinity:	Phosphorus, total and dissolved:
ple Latitude: 34.27484 ple Longitude -1/9.30766	Photos: 🖉 Oceanward 🖉 Landward	
nple Longitude -1/9.30766	nple Latitude: 34.27484	
	ple Longitude -1/9, 30766	

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SUITOR	
o Mo:	
charo	
č	ŝ

1st Measurement = left bank (looking downstream)

.

Event ID (Month Year): UAN 2019		1st I	Measuremer	ıt = left bank (l	1st Measurement = left bank (looking downstream)	(		
11.0	Ve	Velocity Area Method (preferred)	ethod (pref	erred)	Buoyant Object Method (Use only if velocity area method not nossihla)	Buoyant Object Method if velocity area method not	t <b>Method</b> ethod not n	ossihla)
Crew Members: EH EF	2	Distance	Deset (#)	Velocity		Float 1	Float 2	Float 3
	2	Bank (ft)	neptn (m)	(ft/sec)	Distance (ft)			1
Latitude/Longitude: 27-25194 -119-50906 Flow (circle one): Flowing / Ponded / Dry	F	0.00	8.0	0.30	Float Time (sec)		/	
Wind Strength:	7	45	0,1	オナ・〇	Float R	Float Reach Cross Section (ft)	Section (ft	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	m	0.11	56.0	0.18		Upper Section	Middle	Lower Section
Photos (check): X Upstream C Downstream	4	12.5	-	0.60	Width	/		
Notes (e.g. nomeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :	ß	0.41	51-1	0.57	Depth 1	1		
	9	15.51	0.1	0.63	Depth 2			
	2	0-11	5.0	11.0	Depth 3			
	∞	18.5	1.0.	29.0	Depth 4			
January—December Monthly <i>In Situ</i> Measurements:	6	20.02	0.1	12.0	cuidan			
its EC: 132	10	21-5	0.5	0.25	May—September: Algae Collection for Chlorophyll a	Algae Colle	ction for C	niorophyll a
1.06	11	23°0	2.0	20.0-	Reacn Length (L50 m if wetted width $\leq 10$ m; 250 m if wetted width > 10 m):	m if wetted 0 m):	I width ≤ 1	0 m; 250 m
F	12	24.5	0	0	Collecti	Collection Device		Ouantity
Flow (from discharge measurement):	13				(sum # transects per Device)	ects per Dev	vice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup> )	Area=12.6cn	n <sup>2</sup> ) /	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6cm <sup>2</sup> )	a=12.6cm <sup>2</sup> )		
January—December Monthly Water: Total Phosphorus , Total Nitrogen , and Nitrate + Nitrite as	16				Syringe Scrubber (Area=5.3cm)	rrea=5.3cm	×	
Nitrogen (unfiltered):	17				Other (Area=	/	-	
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transects Sampled (0-11)	ts Sampled (	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Valume	Je		
					(use GF/F filter, 25 mL preferred volume)	mL preferre	d volume)	

Site ID: R2	Vel	ocity Area N	Velocity Area Method (preferred)	irred)	Buoyant Object Method (Itee only if valority area method not notsible)	Object I	Method thod not of	scihle)
Date/Time: 1/10/19 1010		Distance		Velocity		Float 1	Float 2	Float 3
	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)		/	
Latitude/Longitude: 34 33936 -119-29721	-	4.0	1.2	20.0	Float Time (sec)			
Wind Strength:	2	5.5	1-5	00-0	Float Reach Cross Section (ft)	h Cross	Section (ft)	- more
Calm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	m	0.1	5-1	10-0	N N	Section	Section	Section
Photos (check): 🖄 Upstream 🖻 Downstream	4	5.02	2-1	0.0	Width			
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	'n	0.01	6.0	51-0	Depth 1			
	9	5-11	h-1	29:0	Depth 2			
	2	13.0	1.5	49.0	Depth 3			
	∞	5-11	52-1	0.0	Denth 5			
January—December Monthly <i>in Situ</i> Measurements:	6	4.91	1.25.	0.82				
pH: 2-03 pH units EC: 457 µS/cm	10	S, C,	14	21.0	May-September: Algae Collection for Chlorophyll a Reach Lensth (150 m if wetted width < 10 m · 250 m	ae Collec f wetted	ction for C width < 1	hlorophyll o 0 m: 250 m
DO:Mg/L SC:µS/cm DO: % Salinity: pot	11	0-61	56.0	0.29	if wetted width > 10 m):			
Water Temp: H+ 6 °C	12	8-61	54-0	-0.03	Collection Device	Device	1	Quantity
Flow (from discharge measurement):	13				(sum # transects per Device)	s per Dev	vice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup> )	a=12.6cn	n <sup>2</sup> )	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6cm <sup>2</sup> )	2.6cm <sup>2</sup> )		
January—December Monthly Water: Total Phoenhorus Total Nitrosen and Nitrate + Nitrite as	16				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	1=5.3cm <sup>2</sup>		
	17				Other (Area=		-	
Dissolved Phosphorus and Nitrogen (field filtered): $\neg_{\mathbf{Q}}$	18				Number of Transects Sampled (0-11)	ampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	(1)		
Chlorophyll a (filters—algae):	20		1		Chlorophyll a Volume			
					(use GF/F filter, 25 mL preferred volume)	preferre	ed volume)	

Event ID (Month Year): JAN 2019		
Site ID:	Veloc	<u> </u>
Date/Time: 1110 /19 0910		-
11.	No.	
1944-11- 34. 34. 342 st		
Flow (circle one): Flowing (Ponded / Dry	1	
Wind Strength:	2	-
Viam / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	m	1
Photos (check): &Upstream	4	
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) :	S	
	9	-
	7	-
	∞	
5	6	
pH: 16 pH units EC: 30 µS/cm	10	
		L

Discharge Measurement 1st Measurement = left bank (looking downstream)

Buoyant Object Method if velocity area method not p	Float 1 Float 2	/	X	Float Reach Cross Section (ft)	Upper Middle Section Section							E Collection for C	vettea wiath ≤ 1(	evice	er Device)	12.6cm²) /	5cm²)	5.3cm <sup>2</sup> )	1 1	npled (0-11)			eferred volume)
Buoyant Object Method (Use only if velocity area method not o	Flo	Distance (ft)	Float Time (sec)	Float Reach	- Charles - Char	Width	Depth 1	Depth 2/	Depth/3	Depth 4	Deptu 2	May-September: Algae Collection for Ch	reach Lengin (150 m ir wetted wigth $\leq 10^{-10}$ if wetted width $> 10$ m);	Collection Device	(sum # transects per Device)	Rubber Delimiter (Area=12.6cm <sup>2</sup> )	PVC Delimiter (Area=12.6cm <sup>2</sup> )	Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Other (Area=	Number of Transects Sampled (0-11)	Composite Volume (mL)	Chlorophyll a Volume	(use GF/F filter, 25 mL preferred volume)
erred)	Velocity	(ft/sec)	0	0-3	10.02	0.34	10.01	12:0	26-0	01-0-	0.58	hL-0	55.0	0.55	0-24	10.0	61.0	22.0	21.0				
ethod (prefe	Depth (ft)		0	2.0	0-8	6.0	0.95	6.0	6.0	8-0	0.1	145	1.2	6.0	1.1	1-1	0.7	59.0	L.0				
Velocity Area Method (preferred)	Distance, from Left	Bank (ft)	5.5	6.0	7.0	S.	8.5	3.5	5.01	11-5	5.21	13.5	5.61	15.5	16.5	5-L1	18-5	19.5	20-5				
Vel	No.		1	2	e	4	S	9	2	~	6	10	11	12	13	14	15	16	1	80	6	0	

Quantity	<b>Collection Device</b>
1	wetted width > 10 m):
l0 m; 250 m	sach Length (150 m if wetted width $\leq$ 10 m; 250 m
Chlorophyll a	ay-September: Algae Collection for Chlorophyll a

(sum # transects per Device)	_
Rubber Delimiter (Area=12.6cm <sup>2</sup> )	
oVC Delimiter (Area=12.6cm <sup>2</sup> )	
ivringe Scrubher (Area=5 3cm <sup>2</sup> )	

ransects Sampled (0-11) 1

Fvent ID (Month Year): JAN 2019		1st N	Aeasuremer	t = left bank (I	1st Measurement = left bank (looking downstream)	~		
	Vel	Velocity Area Method (preferred)	ethod (pref	erred)	Buoyant Object Method (Use only if velocity area method not possible)	Buoyant Object Method if velocity area method not	Method ethod not po	ssible)
Date/Time: 1/10/19 0820	:	Distance		Velocity		Float 1	Float 2	Float 3
	S	Bank (ft)	Deptn (Tt)	(ft/sec)	Distance (ft)			
~	-				Float Time (sec)			
Flow (circle one): (Flowing) Ponded / Dry					Float R	Float Reach Cross Section (ft)	Section (ft)	
Calm /Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Rlowing (circle one) From / To	n w					Upper Section	Middle Section	Lower Section
Photos (check): public and provide the photos (check): public and provide the photos (check): public and photos (check): public a	4				Width			
ses, swimming,	S				Depth 1			
discharge comments, etc.) : Day which which are the	9				Depth 2			
( topological	-				Depth 3			
					Depth 4			
	~				Depth 5			
January-December Monthly <i>In Situ</i> Measurements:	ი							
pH: 7-45 pH units EC: Seo µS/cm	10				May—September: Algae Collection for Chlorophyll a Reach Length (150 m if wetted width < 10 m: 250 m	: Algae Collo ) m if wette	ection for C	) m: 250 m
DO: うっう mg/L SC: <u>ハイ / </u> µS/cm DO: うっ 1 % Salinity: C ' & pot	11				if wetted width > 10 m):	10 m):		
Water Temp: 12 - C °C	12				Collect	Collection Device		Quantity
Flow (from discharge measurement):	13				(sum # transects per Device)	sects per De	evice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup> )	Area=12.6c	m²)	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6cm <sup>2</sup> )	ea=12.6cm <sup>2</sup> )		
January—December Monthly Water:	16				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Area=5.3cm	1 <sup>2</sup> )	
I otal Phosphorus , I otal Nitrogen, and Nitrate + Nitrite as Nitrogen (unfiltered):	1				Other (Area=		-	
and Nitrogen (field filtered):	18				Number of Transects Sampled (0-11)	cts Samplec	I (0-11)	
Mav-September Dry Season Monthly Algae:	19				Composite Volume (mL)	e (mL)		
Chlorophyll <i>a</i> (filters—algae):	2				Chlorophyll a Volume	ime		
					(use GF/F filter, 25 mL preferred volume)	5 mL preferr	ed volume)	

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**Discharge Measurement** 

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Event ID (Month Year): JAN 2019		1st	Di; Measureme	Discharge Measurement ment = left bank (looking (	Discharge Measurement 1st Measurement = left bank (looking downstream)	(		
SA 1. 1.0	Ve	Velocity Area Method (preferred)	Aethod (pre	erred)	Buoyant Object Method (Use only if velocity area method not possible)	Buoyant Object Method if velocitv area method not	t Method ethod not po	ssible)
Crew Members: KH, KF	QN A	Distance from Left	Donth (#)	Velocity		Float 1	Float 2	Float 3
THE PROPERTY INC		Bank (ft)		(ft/sec)	Distance (ft)		1	
Flow (circle one): Flowing / Ponded / Drv	-				Float Time (sec)		/	
Wind Strength:	8				Float R	Float Reach Cross Section (ft)	Section (ft)	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From To	m					Upper Section	Middle Section	Lower Section
Photos (check): ptUpstream Bownstream	4		in the second		Width	/		
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments. etc ) -	S		1		Depth 1	1		
* line fermion 0	Q		1		Depth 2	1		
	-		/		Depth 3			
	×				Depth	-		
					Depth 5			
January—December Monthly <i>In Situ</i> Measurements: pH: フ んぷ pH units EC:	n ç	/			Mav—September: Algae Collection for Chlorophyll a	Algae Colle	ection for Cl	olorophyll o
mg/L SC: 12-08	3	/			Reach Length (150 m if wetted width ≤ 10 m; 250 m	m if wetted	d width ≤ 10	) m; 250 m
% Salinity: 0.6	11	/			if wetted width > 10 m):	0 m):	1	
	11	/			Collecti	Collection Device	/	Quantity
riow (rrom discharge measurement):	13				(sum # transects per Device)	ects per De	viće)	
	14/				Rubber Delimiter (Area=12.6cm <sup>2</sup> )	Area=12.6cr	n²)	
Samples Collected (check box)	-12				PVC Delimiter (Area=12.6cm <sup>2</sup> )	a=12.6cm <sup>2</sup> )		
January—December Monthly Water: Total Phosphorus . Total Nitrogen. and Nitrate + Nitrite as	16				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Area=5.3cm	<sup>2</sup> )	
Nitrogen (unfiltered):	17				Other (Mea=		(	
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transects Sampled (0-11)	ts Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	ne		
					(use GF/F filter, 25 mL preferred volume)	mL preferre	ed volume)	

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Event ID (Month Year): JAN COLT ZAN					Guine Guine	-		
Site ID: CL	Vel	Velocity Area Method (preferred)	ethod (prefe	stred)	Buoyant Object Method (Use only if velocity area method not possible)	Buoyant Object Method if velocity area method not	: Method ethod not po	oșsible)
Date/Time: 1/10/19 0125		Distance		Vélocity		Float 1	Float 2	Float 3
	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)		1	
	-	6-1	0	0	Float Time (sec)		1	
How (circle one): Howing/ Ponded / Ury Wind Strength:	~	a J	2.0	1	Float	Float Reach Cross Section (ft)	Section (ft)	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing /circle one) From / To	u m	2.5	0	0.55		Upper	Middle Section	Lower Section
Photos (check): XUpstream XDownstream	4	5.5	0.2	0.0	Width	1		
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	'n	5.9	0	0	Depth 1	1		
discnarge comments, ecc.)	9				Depth 2			
	-				Depth3			
					Depth 4			
	~				Depth 5			
January—December Monthly <i>In Situ</i> Measurements:	9							
pH: 8-20 pH units EC: 24-11 µS/cm	10				May-September: Algae Collection for Chlorophyll a Beach Length (150 m if wethed width < 10 m · 250 m	: Algae Colle	ection for C d width < 1	0 m· 250 m
DO:mg/L SC:µS/cm DO: 95.9 % Salinity:ppt	11				if wetted width > 10 m):	10 m):		
Water Temp: <u>5° (a</u> °C	12				Collec	Collection Device		Quantity
Flow (from discharge measurement): 0:00 cfs	13				(sum # tran	(sum # transects per Device)	evice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup> )	(Area=12.6c	m <sup>2</sup> )/	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6cm <sup>2</sup> )	ea=12.6cm <sup>2</sup> )		
January-December Monthly Water:	16				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Area=5.3cm	1 <sup>2</sup> )	
Nitrogen (unfiltered):	17				Other (Area=	/	-	
and Nitrogen (field filtered):	18				Number of Transects Sampled (0-11)	cts Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	e (mL)		
Chlorophyll <i>a</i> (filters—algae):	20				Chlorephyll a Volume	ıme		
					(use GF/F filter, 25 mL preferred volume)	5 mL preferr	ed volume)	

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### Ventura River Algae TMDL Event Details

EVENT DETAILS	
Event ID (Month Year): FEBRUARY 2019	Date:2/12/19
Crew Members: K-HAHS K FORTNER	
Weather (circle): Clear (Partly Cloudy) / Overcast / Showers / Rain	n / Other
Event Type (check): Dry (<0.1" rain per day for the precedi	ing three days)
Notes:	e days following)
Beckman 255 # 2554	

OBSERVATION SITES (RIVER FLOW)	
Ventura River at Highway 150 (Baldwin Road) Flow Status : Dry / Ponded Flowing (Estimated Flow: Status cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Santa Ana Blvd	
Flow Status : Dry / Ponded (Flowing) (Estimated Flow: <u>30</u> cfs)	Photos Taken: Upstream / Downstream
Notes: flow east + west channels. Mainly west	۶.
Ventura River at Casitas Vista Road	
Flow Status : Dry / Ponded (Flowing (Estimated Flow: 50 cfs)	Photos Taken: Upstream / Downstream
Flow Status: Dry / Ponded (Flowing (Estimated Flow: 50 cfs) Notes: Flowing Est + west book but jrectoning ?	MOST EAST
Additional Observation Site:	
Flow Status : Dry / Ponded / Flowing (Estimated Flow: cfs)	Photos Taken: Upstream / Downstream
Notes:	,,

UNSAMPI	ED TMDL	SITES
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Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing	(Estimated Flow: cfs)	
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing	(Estimated Flow: cfs)	
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing	(Estimated Flow: cfs)	
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing		
Reason not sampled (if flowing):		

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Site ID: <u>TMDL-Est</u> Event ID (Month Year): FEB 2019 Crew Members: FH, KF	Date/Time: 2/12/19 1240
ne): Clear / Partly Cloudy / Overcast / Rainy / Foggy Ebb / Flood / Slack / N/A Calm / Slight Breeze / Moderate Breeze / Strong Breeze / Wir ess, wildlife, dogs, swimming/recreation):	Ocean Inlet (circle one): Open/Restricted / Closed Time of Low Tide: Time of High Tide: 15.29 ndy / Strong Wind 이역적3 Wind Direction: Blowing From / To
Qua	Water Samples Collected (check box) [Collect at Floating Macroalgae Quadrat 1, Transect 1]
FC. 20020 Water Temp: 7,2	°C Monthly Water (Jan−Dec): Nitrogen, total and dissolved: Sec Phosphorus, total and dissolved: Sec
<u>6-35</u> mg/L SC: <u>29270</u> µS/cm <u>75-6</u> % Salinity: <u>18-1</u> ppt	Nitrate + Nitrite as Nitrogen:
Image: big state     Sc:     29270 µS/cm       73.46     %     Salinity:     18.1     ppt       tos:     >Cceanward     >Candward	

Sample Longitude -119.30769

2/12/12	Velo	Velocity Area Method (preferred)	ethod (pref	erred)	Buoyant Object Method	Buoyant Object Method	Method	rrihla)
Crew Members: KY KT	F	Distance		Velocity		Float 1	Float 2	Float 3
	NO.	Bank (ft)	nebru (iii)	(ft/sec)	Distance (ft)			and a
Latitude/Longitude: 34, 28184 -119, 30899 Flow (rircle one): Flowing (Donded / Dry	1				Float Time (sec)		/	
Wind Strength:	2				Float Re	Float Reach Cross Section (ft)	Section (ft)	
Calm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	ω		/			Upper Section	Middle	Lower Section
Photos (check): AUpstream	4		-		Width	1		
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments. etc.): パンクトロート・パンクト・パンクトロート・パンクトロート・パンクトロート・パンクト・パンクトロート・パンクト	J		-		Depth 1	and a second		
and Mo	6	_			Depth 2	1		
heard to measure	7				Dept# 3			
C	00				Depth 4			
January—December Monthly <i>In Situ</i> Measurements:	9	-			Depth 5			-
pH: <u>8-32</u> pH units EC: <u>863</u> µS/cm	10	~			May-September: Algae Collection for Chlorophyll a	Algae Collec	ction for Ch	lorophyll c
% Salinity:%	11	(ou stoory)			if wetted width > 10 m):	m):		/m; 250 m
n )	12	-			Collectio	Collection Device	es es	Quantity
Flow (Irrom discharge measurement):	13	Bullow and			(sum # transects per Device)	cts per Dev	rice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup>	rea=12.6cm	12y	
Samples Collected (check box)	15	None of Control of Con			PVC Delimiter (Area=12.6cm <sup>2</sup> )	=12.6cm <sup>2</sup>		
January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	·ea=5.3cm <sup>2</sup>		
Nitrogen (unfiltered):	17				Other (Area=	1	~	
Dissolved Phosphorus and Nitrogen (field filtered): 👝	18				Number of Transects Sampled (0-11)	s Sampled (	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	Ø		
						•		

Event ID Month Vorth FER. 2419		1st M	1st Measurement = left bank		(looking downstream)			
2	Velocity	Area Me	Velocity Area Method (preferred)	red)	Buoyant Object Method (Use only if velocity area method not possible)	Buoyant Object Method	Method thod not pos	ssible)
2/12/19 1050	-	Distance	State Care	Velocity		Float 1	Float 2	Float 3
2	No. fro Ba	from Left Bank (ft)	Depth (10)	(ft/sec)	Distance (ft)			
27725	4		1000		Float Time (sec)	Constra		
How (circle one): Howing / Ponded / Dry	د -		and solar		Float Re	Float Reach Cross Section (ft)	iection (ft)	
ze / Windy	ω		and Decision			Upper	Middle Section	Lower Section
Photos (check): Scupstream Schownstream	4		216		Width			
recreation,	UT I	-			Depth 1			
discharge comments, etc.) : 110-2 to row 5	6	ary a by the			Depth			
Simpled east bank, Flow Many	7	איע וופי ניסינפ			Depth 3			
west chunch entering east channel in several	, ,	ware hab			Depth 4			
	0	45) marces			Depth 5			
January—December Monthly In Situ Measurements:	9						1	
8-25 pH units EC: 747 uS/cm	10				May—September: Algae Collection for Chlorophyll Reach Length (150 m if wetted width < 10 m: 250 m	Algae Collec	tion for Ch	m: 250 m
DO: 29-2% Salinity: 0-5 ppt	11				if wetted width > 10 m):	m):	/	
er Temp: 9-8 °C 55 est	12				Collectio	Collection Device		Quantity
charge measurement):cfs	13				(sum # transects per Device)	cts per Pev	rice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup> )	rea=12.6cm	1 <sup>2</sup> )	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6cm <sup>2</sup> )	=12.6cm <sup>2</sup> )		
	"ອ <sub>າ</sub>				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	rea=5.3cm <sup>2</sup>		
Nitrogen (unfiltered):	17				Other (Area=		~	
and Nitrogen (field filtered):	18				Number of Transects Sampled (0-11)	s Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	le broforro	d volume)	
					(use GF/F filter, 25 mL preferred volume)	nL preterre	d volume)	

Discharge Measurement

			Dis	Discharge Measurement	Jrement			
D (Month Year):		TSE IN	easuremen	t pan	K (looking downstream)			
Site ID:         75           Date/Time:         2/2/20	Velocity	Area Me	Velocity Area Method (preferred)	erred) /	Buoyant Object Method (Use only if velocity area method not possible)	Buoyant Object Method if velocity area method not	: Method ethod not pc	vssible)
15: XI XI	_	-		Velocity		Float 1	Float 2	Float 3
	Ba	Bank (ft)	Debrii (iri)	(ft/sec)	Distance (ft)		/	
19-29916					Float Time (sec)		/	
Tomas of	2		-		Float Re	each Cross	Float Reach Cross Section (ft)	
ze / Windy			Constant and			Upper	Middle	Lower
Wind Direction: Blowing (circle one) From / To			-			Section	Section	Section
	4		Winnado.		Width			
Notes (e.g. nomeless, wildlife, horses, swimming/recreation,	5		and a short		Dept 1			
sot sander haven	6		are a sugar		Depth 2			
port due to Sebury abstacles but	7	4	N. Near		Depth 3			
no inputs blate prature	•				Depth 4			
		-			Depth 5			
Jary-December Monthly In Situ Measurements:	u u	Barring						
8 2 pH units EC: 721 µS/cm	10	-			May—September: Algae Collection for Chlorophyll a	Algae Colle	ction for Ch	ilorophyll a
Salinity: 0.5 ppt	11	/			if wetted width > 10 m):	m):		m, 250 m
SX	12	-			Collectio	Collection Device		Quantity
ريا در در در در در در در در در در در در در	13				(sum # transects per Device)	cts per De	vice)	
	14	-			Rubber Delimiter (Area=12.6cm <sup>2</sup>	rea=12.6cr	n2)/	
	15				PVC Delimiter (Area=12.6cm <sup>2</sup> )	=12.6cm <sup>2</sup> )		
Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	16				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	rea=5.3cm	<sup>2</sup> )	
	17				Other (Area=	1	~	
Dissolved Phosphorus and Nitrogen (field filtered):	00				Number of Transects Sampled (0-11)	Sampled	(0-11)	
May—September Dry Season Monthly Algae:	0				Composite Volume (mL)	mL)		
Chlorophyll a (filters—algae):	0				Chlorophyll a Volume	, ro		
					(use GF/F niter, 25 mL preferred volume)	nL preterre	d volume)	

Event ID (Month Verr). FEB 2212		1st N	leasuremen	t = left bank (	1st Measurement = left bank (looking downstream)			
	Veloc	city Area Mo	Velocity Area Method (preferred)	erred	Buoyant Object Method (Use only if velocity area method not possible)	Buoyant Object Method if velocity area method not	Method ethod not po	ssible
al17117		Distance		Velocity		Float 1	Float 2	Float 3
Crew Members:	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)		1 st	
Latitude/Longitude: 34.38003 -119.30857	-				Float Time (sec)		1	
Flow (circle one): Flowing) Ponded / Dry	J				Float Re	ach Cross	Float Reach Cross Section (ft)	
Wind Strengun:	•		-			Upper	Middle	Lower
Wind Direction: Blowing (circle one) From / To	ω		1			Section	Section	Section
Photos (check): jz.Upstream j>Downstream	4		/		Width	1.5		
e, horses	u		/		Depth 1			
discharge comments, etc.) : The how two would be	6		/		Depth 2			
WEEK-	7				Depth 3			
Sealer fire building.	•	1			Depth 4			
	•	-			Depth 5			~
uary—December Monthly In Situ M	2	1			Mav-September: Aleae Collection for Chlorophyll a	Aleae Colle	ction for Ch	lorophyll a
227 pH units EC: 270	10	1			Reach Length (150 m if wetted width ≤ 10 m 250 m	n if wette	d width ≤ 10	m/250 m
DO: 53 % Salinity: 5 ppt	11	1			if wetted width > 10 m):	m):		
er Temp:°C	12	-			Collecti	Collection Device	/	Quantity
Flow (from discharge measurement): cfs	13	/			(sum # transects per Device)	cts per De	vice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup>	rea=12.6ci	m <sup>2</sup> Y	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6cm <sup>2</sup> )	=12.6cm <sup>2</sup> )		
January-December Monthly Water:	16				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	rea=5.3cm	<sup>2</sup> )	
	17				Other (Area=		~	
and Nitrogen (field filtered):	18				Number of Transects Sampled (0-11)	s Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	(mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	. Te	-	
					(use GF/F miter, 25 mL preierred volume)	nr breieri	ed volumer	

Discharge Measurement

2/12/13 0825	Crew Members: KH, KF	inde: 34.38075 - 119.2073 5	ded / Dry	-	Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy	A linetroom	rinuos (cneck): 英Upstream 爱Downstream Notes (e.g. homeless, wildlife horses swimming/rorrection	discharge comments, etc.) : Even of your headon,	ats of above interest when y	A dent - I and - I and -		January—December Monthly In Situ Measurements:	mg/L SC: WS μs/cm	Salinity: 0.6	Water Temp: <u>1-2</u> °C Flow (from discharge measurement): 26-3 cfc			Samples Collected (check box)	Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as	Nitrogen (unfiltered):	Dissolved Phosphorus and Nitrogen (held filtered):	May—September Dry Season Monthly Algae:	Chiorophyll <i>a</i> (filters—algae):
Ve	No.		1	2	ω		4	л	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ocity Area I	Distance from Left	Bank (ft)	5	Q	5 0	14	12	4	5	21	G?	22	24	26	228	30	63 12	34					
Velocity Area Method (preferred)	Depth (ft)	-	0	2		-	1.2	1.6	5.1	<u>ل</u> ا ب	1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	1-2	1.2	1-3	1.2S	1.0	0.75	Ó					
ferred)		(ft/sec)	0	> (	0.10	110	1280	85.0	1.0%	0.0	1.12	1-25	1.23	1.44	1.01	0.69	0.37	0					
Buoyant Object Method (Use only if velocity area method not possible)	Distance (#)	Distance (ft)	Float Time (sec)	Float R			Width	Depth 1	Depth 2	Depth 3	Depth 4	pebul 2	May-September: Algae Collection for Chlorophyll	if wetted width > 10 m):	Collecti	(sum # transects per Device)	Rubber Delimiter (Area=12.6cm <sup>2</sup> )	PVC Delimiter (Area=12.6cm <sup>2</sup> )	Syringe Scrubber (Area=5.3cm <sup>2</sup>	Other (Area=	Number of Transects Sampled (0-11)	Composite Volume (mL)	Chlorophyll a Volume
Buoyant Object Method if velocity area method not	Float 1			Float Reach Cross Section (ft)	Upper	Section							Algae Colle	) m):	Collection Device	ects per De	rea=12.6ci	=12.6cm <sup>2</sup> )	rea=5.3cm	/	s Sampled	(mL)	
net	2	1	1	Sectio	Middle	Section							ection for			vice)	m²)	/	2)	~	(0-11)		-
lethod nod not	Float/2			n (†	le	9			1 1				12										.

a					20	Chiorophyli a (filters—algae): -
, mL)	Composite Volume (mL)				19	n Monthly Algae:
Sampled (0-11)	Number of Transects Sampled (U-11)	I		0	18	Dissolved Phosphorus and Nitrogen (field filtered): 154
-	Other (Area=				17	Nitrogen (unfiltered):
ea=5.3cm <sup>4</sup> )	Syringe Scrubber (Area=5.3cm <sup>4</sup> )				16	January—December Monthly Water: Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
12.6cm")	PVC Delimiter (Area=12.6cm)				15	Samples Collected (check box)
ea=12.6cm")	Rubber Delimiter (Area=12.6cm)		the set		14	
ts per Device)	(sum # transects per Device				13	Flow (from discharge measurement):
n Device	Collection Device				12	0.EN
n):	if wetted width > 10 m):				E	_mg/L SC:% Salinity:
if wetted width	Reach Length (150 m if wetted width ≤ 10 m; 250 m				10	9-27 pH units EC: 2510
and Collection fo	Mar Contombor A	d	Q.	13.0	9	January—December Monthly In Situ Measurements:
	Depth 5	N Call	D'an		0	
	Depth/4	L'en	214		•	C
	Depth 3	19.0	5.3	17=4	7	* Scandyra 0
	Depth 2	1-112	0.00	11.4	6	Autor ~ 647' star- A three a taxes
	Depth 1	1.33	0-4	10.4	м	Notes (e.g. homeless, wildlife, horses, swimming/recreation,
	Width	84	045	9.4	4	Photos (check): XUpstream
Section Section		1.62	0.25	2,5	з	Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one From / To
Float Reach Cross Section (ft)	Float Rea	6.78	0.35	Ч́Г	2	Wind Strength:
	Float Time (sec)	0	0	60	1	Latitude/Longitude: 15 1 500 / 111 / 2000 /
	Distance (ft)	(ft/sec)		Bank (ft)	10.	ō
Float 1 Float 2		Velocity	Denth (ft)	Distance from Left	5	TT C
Buoyant Object Method if velocity area method not	Buoyant Object Method (Use only if velocity area method not possible)	erred)	ethod (prefe	Velocity Area Method (preferred)	Ve	2/12/10 072

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Ventura River Algae TMDL Field Data Sheet (Reaches 1-4) - Page 1 of 1

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### Ventura River Algae TMDL Event Details

EVENT DETAILS	
Event ID (Month Year): MARCH 2019	Date: 3/13/19
Crew Members: K. HAHS K. FORTNER	
Weather (circle) Clear / Partly Cloudy / Overcast / Showers / Rain /	Other
Event Type (check): Cry (<0.1" rain per day for the preceding	three days)
□ Wet (days with ≥0.1" rain and the three d	lays following)
Notes:YS1 85 # 05E1042	
Balmon 255 # 2554	

OBSERVATION SITES (RIVER FLOW)	
Ventura River at Highway 150 (Baldwin Road) Flow Status : Dry / Ponded Flowing (Estimated Flow: 60 cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Santa Ana Blvd Flow Status : Dry / Ponded (Flowing) (Estimated Flow: 50 Notes: cfs)	Photos Taken: Upstream / Downstream
Ventura River at Casitas Vista Road Flow Status : Dry / Ponded (Flowing (Estimated Flow: 100 cfs) Notes: Main Tow cast channel plus some flow we (~100cfs)	st channel
Additional Observation Site: Flow Status : Dry / Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream

Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / F Reason not sampled (if flowing	Flowing (Estimated Flow: cfs) g):	
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / F	Flowing (Estimated Flow: cfs)	
Notes:	g):	
Site ID:	Time:	Photos Taken: Upstream / Downstream
Reason not sampled (if flowing	lowing (Estimated Flow: cfs) g):	
	Time:	
Flow Status : Dry / Ponded / F Reason not sampled (if flowing	lowing (Estimated Flow: cfs) g):	

Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 1

Ventura River Algae TMDL—Estuary Details

Site ID: TMDL-Est	
Event ID (Month Year): MAR 2019	Date/Time: 3/13/19 1320
Crew Members: KN KT	
Weather (circle one): Clear / Partly Cloudy / Overcast / Rainy / Foggy	Ocean Inlet (circle one): Open / Restricted/ Closed
Direction of Tide: Ebb / Flood / Slack / N/A	Time of Low Tide: 0958 Time of High Tide:
Wind Strength: Calm //Slight Breeze / Moderate Breeze / Strong Breeze /	/ Strong Breeze / Windy / Strong Wind Mind Direction: Blowing From To
Notes (e.g. homeless, wildlife, dogs, swimming/recreation); Alana hand a service of the service	ing to occan an west a
to occur but not really hydrologically ranneded to	he fuce somder taken wet and downshran of var boad weets.

in situ measurements (measure at Floating Macroalgae Quadrat 1, Transect 1)	Water Samples Collected (check box)
in	[Collect at Floating Macroalgae Quadrat 1, Transect 1]
lits	Monthly Water (Jan—Dec):
DO:mg/L SC: _// JU µS/cm	Nitrogen, total and dissolved:
DO: <u>インン</u> % Salinity: <u>の・ゆ</u> ppt	Phosphorus, total and dissolved:
Photos:	Nitrate + Nitrite as Nitrogen:
Sample Latitude: 34 - 2-7んらイ	
Sample Longitude -1/ 7.30901	

Utelocity Area Method (predeside in the surreme in t	Velocity Ard Distan Bank (	Velocity Area Method (preferred) Distance from Left Depth (ft) Bank (ft) Control Left Depth	Velocity Area Method (preferred) Distance from Left Depth (ft) Bank (ft) Control Left Depth	Usicinarge measurement         Velocity Area Method (preferred)       (use of from Left bank (looking down         Distance from Left bank (ft)       Velocity (ft/sec)         Bank (ft)       Depth (ft)       (ft/sec)         Bank (ft)       Depth (ft)       (ft/sec)         Hoat Tim       Hoat Tim         Hoat Tim       Depth         Hoat Tim       Depth         Nuidt       Depth         Distance       Nuidt         Distance       Nuidt         Depth       Depth         Hoat Tim       Nuidt         Depth       Depth         Nuidt       Depth         Depth       Depth         Nubber Delin       Number Delin         VC Delimit       Syringe Scru         Number of T       Composite         Nuse of/F fill       Composite
Ist Measureme	Discharge Measurement = left bank       Distance from Left     Depth (ft)     Velocity (ft/sec)       Bank (ft)     Depth (ft)     (ft/sec)	sec)	sec)	sec)
Depth (ft)	Measurement = left bank	sec)	sec)	sec)
	nt = left bank ferred) Velocity (ft/sec)	sec)	sec)	sec)

Event ID (Month Year): MAR 2019		1st N	1st Measurement = left bank		(looking downstream)			
	Ve	Velocity Area Method (preferred)	ethod (prefe	erred)	Buo	Buoyant Object Method	Method	1
3/13		Distance		Velocity	Float 1 Float 2 Floa	Float 1	Float 2	Float 3
	No.	from Left Bank (ft)	Depth (ft)	(ft/sec)	Distance (ft)		1	
Latitude/Longitude: 34.33937, -119-29725	-				Float Time (sec)		and the second sec	
Flow (circle one): Flowing/ Ponded / Dry			1		Float R	each Cross	Float Reach Cross Section (ft)	
Calm / Light Brooze / Moderate Brooze / Strong Brooze / Windy	~					Upper	Middle	Lower
Wind Direction: Blowing (circle one) From / To	ω		1			Section	Section	Section
Photos (check): X.Upstream 🛪 Downstream	4		C. C. LANDONN		Width	1		
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	л		and and a		Depth 1			
Wade safety. Several Shears of tow	6		Manufacture of the		Depthy2			
entering main channel from west side a	7		Report No.		Depth 3			
	•				Depth 4			
	• •	un man			Depth 5			
r Monthly <i>I</i> its EC:	10	and the second second			May-September: Algae Collection for Chlorophyll a	Algae Colle	ction for C	nlorophyll a
DO: <u></u> mg/L SC: <u></u> µS/cm DO: <u></u> % Salinity: <u>5</u> ppt	11	1			if wetted width > 10 m):	0 m):		200
	12	-			Collect	<b>Collection Device</b>	/	Quantity
Flow (from discharge measurement): cfs	13	Barren Car			(sum # transects per Device)	ects per De	vice)	
	14	To Shake and			Rubber Delimiter (Area=12.6cm <sup>2</sup> )	Area=12.6ci	74 (*re	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6cm <sup>2</sup> )	a=12.6cm²)		
January—December Monthly Water:	16/				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	rea=5.3cm	2)	

May—September Dry Season Monthly Algae:

Chlorophyll a (filters—algae):

20 19

Chlorophyll a Volume

(use GF/F filter, 25 mL preferred volume)

-

Composite Volume (mL)

Number of Transects Sampled (0-11)

The American

16/

1

Other (Area=

Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as

Nitrogen (unfiltered):

Ŗ X

100

Dissolved Phosphorus and Nitrogen (field filtered):

3/13/19 3/13/19	Velo	city Area M Distance	Velocity Area Method (preferred) Distance	erred) Valočitu	a Method (preferred)  Ce Velocity  Ce Velocity  Ce Float 1 Float 7 Float	Buoyant Object Method if velocity area method not	Method ethod not p	pssible)
KH KT	No.	Distance from Left Bank (ft)	Depth (ft)	Velocity (ft/sec)	Distance (ft)	Float 1	Float	Float 3
Flow (circle one): Flowing / Ponded / Dry	4				Float Time (sec)	/		
	N				Float R	Float Reach cross Section (ft)	Section (ft)	
Calm Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	ω					Upper Section	Middle	Lower
Photos (check): AUpstream Cownstream	4		/		Width			
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments. etc.): ゴルン なの かみ イント・ケート	л		/		Depth			
	6		/		Depth 2			
Gault + SATRA mecautionents	7		-		Depth 3			
	∞		1		/ Depth 4			
January-December Monthly in Sity Measurements	9		-		* Depth 5			
pH: 8.2.7 pH units EC: 75.3 µS/cm	10				May-September: Algae Collection for Chlorophyll a	Algae Collec	ction for Cl	hlorophyll
	11				Keach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width > 10 m):	m if wetted	width ≤ 10	0 m; 250 m
0	12				Collectio	Collection Device	1	Quantity
Flow (Irrom elsenarge measurement): OO cts	13	/			(sum # transects per Device)	cts per Dev	ice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup> )	rea=12.6cm	1 <sup>2</sup> )	
Samples Collected (check box)	15	-			PVC Delimiter (Area=12.9cm <sup>2</sup> )	=12.6 cm <sup>2</sup> )		
Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as	16				Syringe Scrubber (Arga=5.3cm <sup>2</sup> )	rga=5.3cm <sup>2</sup>		
Nitrogen (unfiltered):	17				Other (Area=		)	
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transects Sampled (0-11)	s Sampled (	0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	(mL)		
Chlorophyll <i>a</i> (filters—algae):	20				Chlorophyll a Volume	- ī		
					(use Gf	/F filter, 25 n	/F filter, 25 mL preferred	(use GF/F filter, 25 mL preferred volume)

	000000000000000000000000000000000000000	January – December Monthly In Situ Measurements:       9         pH: $\Im \cdot \Im$ pH units       EC:       10         pO: $mg/L$ SC: $\neg O \cap \bot$ $\mu$ S/cm       10         DO: $mg/L$ SC: $\neg O \cap \bot$ $\mu$ S/cm       10         DO: $mg/L$ SC: $\neg O \cap \bot$ $\mu$ S/cm       11         DO: $\neg G$ $\neg G$ $\neg G$ 11         Water Temp: $\neg C$ $\neg G$ $\neg G$ 11         Water Temp: $\neg C$ $\neg G$ 11       11         January – December Monthly Water: $\neg G$ 11       11         January – December Monthly Water: $\neg G$ $\neg G$ 11         Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as $\neg G$ 11         Nitrogen (unfiltered): $\neg G$ $\neg G$ 11         Dissolved Phosphorus and Nitrogen (field filtered): $\neg G$ 11         11       11       11       11       11         12 $\neg G$ $\neg G$ 11       11         13 $\neg G$ $\neg G$ 11       11       11         14<
100 $110$ $2.37$ $320$ $0.95$ $2.37$ $321$ $0.95$ $2.82$ $321$ $1.00$ $2.50$ $326$ $1.11$ $2.471$ $366$ $1.11$ $2.471$ $386$ $1.00$ $2.56$ $140$ $0.91$ $2.56$ $143$ $1.11$ $1.475$ $143$ $0.91$ $2.56$ $143$ $0.91$ $2.56$ $143$ $0.91$ $2.56$ $143$ $0.91$ $2.52$ $52$ $0.93$ $1.47$ $52$ $0.93$ $1.47$ $55$ $0.94$ $9.74$	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Measurements:         μS/cm         μS/cm         ppt         SO • 9         cfs         Bold         Job = 1         Job = 1         Job = 2
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	000-00	Measurements: $\mu$ S/cm $\mu$ S/cm $\frac{30 \cdot 9}{cfs}$ d Nitrate + Nitrite as $\frac{\pi}{F}$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 0 - 0 0	<u>Measurements:</u> _ μS/cm _ ppt _ βO • Ϙ_ cfs d Nitrate + Nitrite as
10       1-1       2.16         30       0.95       2.37         32       0.95       2.82         32       0.95       2.82         32       1.0       2.50         36       1.1       2.47         36       1.1       2.47         38       1.0       2.48         40       0.9       2.56         43       1.1       1.45         43       1.1       1.45         43       1.1       1.45         46       0.7       2.34	0 - 0 0	Measurements: $\mu$ S/cm $\mu$ S/cm $\beta 0 \cdot 9$ cfs $\beta 0 \cdot 9$ cfs
10       1-1       2.16         30       0.95       2.37         32       0.95       2.82         32       0.95       2.82         32       1.0       2.56         36       1.1       2.47         36       1.0       2.47         36       1.0       2.48         40       0.9       2.48         43       1.1       1.45		<u>Measurements:</u> _µS/cm _ppt <u>30 • 9</u> _cfs
10       11       2.16         30       0.95       2.37         32       0.95       2.82         32       1.0       2.50         36       1.1       2.47         36       1.1       2.47         36       1.0       2.48         40       0.9       2.48	0 0	<u>Measurements:</u> _µS/cm _ppt <u>30 • 9</u> cfs
10       1-1       2.16         30       0.95       2.37         32       0.95       2.82         34       1.0       2.50         36       1.1       2.47         38       1.0       2.48	0	<u>Measurements:</u> _µS/cm _µS/cm _ppt potcfs
10     1-1     2-1       30     0.95     2.37       32     0.95     2.82       34     1.0     2.50       36     1.1     2.47	6 - 10	<u>Measurements:</u> μS/cm ppt
10 30 32 0.95 2.37 32 1.0 2.50	- 0	
30 0.95 2.37 32 0.95 2.37	0	
30 0.95 2.37		
1.1 1.1	0	
112	-1 8.0	
7 26 1-1 2-80 Depth 4	5	
· · · ·		
6 34 1.0 3-18 Depth 2	-	discial Be comments, etc.)
5 22 1.15 2.39 Depth 1	promose.	fe, horses, swimming/recreation,
4 20 6-95 1-97 Width		
Section		Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy 3 Wind Direction: Blowing (circle one) From / To
2 16 5.5 5.71 Float Keach Cross Section (it)	0	_
1 14.0 0.4 0.12 HOAT HIME (Sec)		Dry
Bank (ft) (tt/sec)	-	24.3002 -10-2020
Velocity Area Method (preferred)         Buoyant Object Method           (Use only if velocity area method not possible)	elocity Area Method	R4 DOIS
Tot Micaoni ciliciti – icit parity (novvii)8 novviion carit)		Event ID (Month Year): MAR2019

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	ē	Chlorophyll a Volume				20	Chlorophyll <i>a</i> (filters—algae):
	(mL)	Composite Volume (mL)				19	May—September Dry Season Monthly Algae:
led (0-11)	s Sampl	Number of Transects Sampled (0-11)	0	0	26.0	18	nashing a sha Minogeri (fileta filterea):
-	1	Other (Area=	0.42	03.0	25.5	17	Nitrogen (unfiltered):
(cm <sup>2</sup> )	rea=5.3	Syringe Scrubber (Area=5.3cm <sup>2</sup> )	1-33	58 0	24-5	16	Total Phosphorus , Total Nitrogen, and Nitrate + Nitrite as
m2/	=12.6cn	PVC Delimiter (Area=12.6cm <sup>2</sup> )		1.0	23.0	15	Samples Collected (check box) January December Monthly Water
.6cm <sup>2</sup> )	rea=12.	Rubber Delimiter (Area=12.6cm <sup>2</sup>	1-31	1-45	21.5	14	
Device)	ects per	(sum # transects per Device)	2.34	1-55	20.0	13	2
ice Quantity	<b>Collection Device</b>	Collecti	23.2	04-1	13.51	12	Flow (from discharge measurement): 58-6 cfs
mor s undim pan	) m):	if wetted width > 10 m);	2.20	1-40	0.11	Ħ	<u> </u>
ollection for Chlore	Algae Co	May-September: Algae Collection for Chlorophyll a	5-15	1.415	15.5	10	DO: 10 mg/l SC: us/cm
		-	34.5	C S-1	14-0	4	Jary—December Mon
		Depth 5	5.5%	1.40	12.5		
	1	Depth 4				×	
		Depth 3	2.91	1:35	11.0	7	
		Depth 2	2.24	1.2	9.5	6	
	1	Depth 1	1-35	0.07	0.8	ы	discharge comments, etc.) :
	1	Width		C- 10	S is	4	Notes (e.g. homeless wildlife horses swimming/correction
er Middle Lower on Section Section	Upper		0.93	6.7	5-0	ω	
Float Reach Cross Section (ft)	each Cru	Float R	10.07	S .0	3.5	2	Wind Strength:
		Float Time (sec)	0	0	No to	ч	lowing / Ponded / Dry
/		Distance (ft)	(ft/sec)		Bank (ft)		1
t 1 Float 2 Float 3	Float 1		Velocity	Depth (ft)	Distance from Left	No.	rs: KII Kř
Buoyant Object Method (Use only if velocity area method not possible)	<b>/ant Ob</b> j ocity are	Buo (Use only if ve	erred)	lethod (pref	Velocity Area Method (preferred)	<	Site ID: SA Date/Time: 3/13/19 OS445
		Ist Measurement = left bank (looking downstream)	T = Iett bank (	vieasuremen	IST	1	Event ID (Month Year): MARK 2019

Chlorophyll <i>a</i> (filters—algae):	May—September Dry Season Monthly Algae:	Dissolved Phosphorus and Nitrogen (field filtered):	Nitrogen (unfiltered):	January—December Montniy water: Total Dhoenhorus Total Nitrogen and Nitrate + Nitrite as	Samples Collected (check box)			er Temp:°C	DO: <u>معار</u> Mg/L Sc: مالم)cm DO: معاركة Salinity: <u>مجار</u> ppt	pH: 8-34 pH units EC: 24 TT µS/cm	January—December Monthly In Situ Measurements:				discriarge comments, etc.)	Notes (e.g. homeless, wildlife, horses, swimming/recreation,	Photos (check): YUpstream	Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	Vind Strength:	ē		C LICER		Event ID (Month Year): MAR 2019
20	19	18	17	16	15	14	13	12	11	10	9	000	-	4	6	л	4	tst t	2	1	NQ.	r,	Ve	
					de la	17:3	16-3	15-3	14.13	13:3	下の		0.0	- 1	8	0.2	7:3		w S	ω	Bank (ft)	Distance	locity Area N	1st
					0	0 S	0-¢	Pia	0.25	0:25	0 5				52.0	0.25	o 25	0	0.0	0.20	Debru (ir)	Donath (ft)	Velocity Area Method (preferred)	Measuremer
					0	0.76	1.28	1-30	1-42	54.1	-40	101	87+1	2	1.63	1-3)	1.06	0.1	0:35	0,40	(ft/sec)	Velocity	erred)	nent = left bank (looking
Chlorophyll a Volume	Composite Volume (mL)	Number of Transects Sampled (0-11)	Other (Area=	Syringe Scrubber (Area=5.3cm <sup>*</sup> )		Nubbel veililitei (Area-12.0011)	(sum # transects per Device)	Collect	if wetted width > 10 m):	May—September: Algae Collection for Chlorophyll <i>a</i> Reach Length (150 m if wetted width ≤ 10 m; 250 m		Depth 5	Depth 4	Depth 3	Depth 2	Depth 1	Width		Float R	Float Time (sec)	Distance (ft)		Buoyant Object Method (Use only if velocity area method not possible)	1st Measurement = left bank (looking downstream)
me ml proform	t (mL)	ts Sampled		Area=5.3cm	d-12.0011 )	-17 6 m <sup>2</sup> 1	ects per De	Collection Device	0 m):	Algae Colle m if wettec								Upper Section	Float Reach Cross Section (ft)			Float 1	Buoyant Object Method if velocity area method not	
		(0-11)	-	-	5	.,	vice)			tion for C width ≤ 1								Middle Section	Section (ft)			Float 2	Method thod not po	
								Quantity		hlorophyl 0 m; 250 i								Lower				Float 3	ssible)	

### Ventura River Algae TMDL Event Details

EVENT DETAILS	
Event ID (Month Year): APRIL 2019	Date: <u>4/8/19</u>
Crew Members: K.HAHS, E, LonELI	
Weather (circle): Clear / Partly Cloudy / Overcast / Showers / Rain	n / Other
Event Type (check): XDry (<0.1" rain per day for the precedition	ing three days)
□ Wet (days with ≥0.1" rain and the thre	e days following)
Notes: VS1 85# 0160625 @ CL. 500	itcharl to 03D0379 for all
others due to slow response time.	
Bectman 410 # 110341139	

### **OBSERVATION SITES (RIVER FLOW)**

Ventura River at Highway 150 (Baldwin Road) Flow Status : Dry / Ponded Flowing (Estimated Flow: 20 cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Santa Ana Blvd Flow Status : Dry / Ponded (Flowing (Estimated Flow: <u>20</u> cfs) Notes:	Photos Taken: Upstream / Downstream
Ventura River at Casitas Vista Road Flow Status : Dry / Ponded / Flowing (Estimated Flow: <u>30</u> cfs) Notes:	Photos Taken: Upstream / Downstream
Additional Observation Site:	
Flow Status : Dry / Ponded / Flowing (Estimated Flow: cfs) Notes:	Photos Taken: Upstream / Downstream

### UNSAMPLED TMDL SITES

Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing	(Estimated Flow: cfs	s)
Reason not sampled (if flowing):		
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing Reason not sampled (if flowing):	(Estimated Flow: cfs	5)
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing Reason not sampled (if flowing):	(Estimated Flow: cfs	5)
Notes:		
Site ID:	Time:	Photos Taken: Upstream / Downstream
Flow Status : Dry / Ponded / Flowing	(Estimated Flow: cfs	
Reason not sampled (if flowing):		
Notes:		

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Ventura River Algae TMDL Field Data Sheet (Estuary) - Page 1 of 1

Ventura River Algae TMDL—Estuary Details

10L-Est 10nth Year): APR 2019 Date/Time: 4/8/19 14:15 15: Att EL	Weather (circle one): Clear (Partly Cloudy) Overcast / Rainy / Foggy       Ocean Inlet (circle one): Open / Restricted / Closed         Direction of Tide:       Ebb / Flood / Slack / N/A       Time of Low Tide:       Time of Low Tide:         Wind Strength:       Calm / Slight Breeze / Moderate Breeze / Strong Breeze / Windy / Strong Wind       Wind Nuckertion:       Blowing From / To         Notes (e.g. homeless. wildlife       doins       swimming/recreation)       Mode       Mode	1005 of lards in see avea molity guils . Here an the art of the print	s (Measure at Floating Macroalgae Qua	
Site ID: <u>TMDL-Est</u> Event ID (Month Year): Crew Members:	Veather (circle one): Clear / F irection of Tide: (Ebb / Flooo Vind Strength: Calm / Slight lotes (e.g. homeless, wildlife.	and of but in the	<i>In Situ</i> Measurements (Measu Monthly (Jan—Dec):	1. 3-45 will with

Sample Longitude - 11 9 . 3088 6

Sample Latitude: 34- 27683

Event ID (Month Year): APR 2019		1st	<b>Visi</b> Measuremen	uischarge ivieasurement nent = left bank (looking (	Uischarge measurement 1st Measurement = left bank (looking downstream)	(•		
	Ve	Velocity Area Method (preferred)	lethod (prefe	erred)	Buoyant Object Method (Use only if velocity area method not possible)	Buoyant Object Method if velocity area method not	Method ethod not po	ossible)
Date/Time: TISIN Crew Members: KH &L	-	Distance		Velocity		Float 1	Float 2	Float 3
6	No	Bank (ft)	Deptn (III)	(ft/sec)	Distance (ft)		/	
Latitude/Longitude: 34 2021 - 14 30200 Flow (circle one): Flowing / Ponded / Dry	1	3-0	0	0	Float Time (sec)			
Wind Strength:	2	D.7	2.7	0.90	Float F	Float Reach Cross Section (ft)	Section (ft)	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	e	5-5	[ - ]	-83		Upper Section	Middle Section	Lower Section
Photos (check): XUpstream XDownstream	4	0-1-0	0-3	2-19	Width	1		
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.) · · · · · · · · · · · · · · · · · · ·	'n	0,00	. L.J	2-66	Depth 1			
ucher hester of bi	9	5.5	8.1	1.52	Depth 2			
	7	0-11	5-1	1-17	Depthys			
actor we have a	œ	12-5	2.0	11	Depth 4			-
January-December Monthly In Situ Measurements:	6	0, <del>1</del>	2.0	1.78				
04/ pH units EC: 105 /	10	15.5	8.1	26.1	May-September: Algae Collection for Chlorophyll a	: Algae Colle	tetion for Cl	hlorophyll a
DO:mg/L SC:µS/cm DO:% Salinity:ppt	11	0-11	1.75	2-11	if wetted width > 10 m):	lo m):	n widru ≥ T	
er Temp: 19.9 °C 62.77	12	13.5	106	1:82	Collect	Collection Device		Quantity
Flow (from discharge measurement):	13	20.0	<i>S</i> <sup>0</sup> -	04.1	(sum # tran	(sum # transects per Device)	vice)	
	14	21.5	1.8	01.0	Rubber Delimiter (Area=12.6cm <sup>2</sup> )	Area=12.6cl	n²) /	
Samples Collected (check box)	15	23.0	0.0	34.0	PVC Delimiter (Area=12.6cm <sup>2</sup> )	ea=12.6cm <sup>2</sup> )		
January—December Monthly Water: Total Phosphorus . Total Nitrogen. and Nitrate + Nitrite as	16	24.5	0.1	1.30	Syringe Scrubber (Area=5.3cm)	Area=5.3cm	×	
Nitrogen (unfiltered):	17	26.0	0.2	0.82	Other (Area=		-	
Dissolved Phosphorus and Nitrogen (field filtered):	18	27.5	0	0	Number of Transects Sampled (0-11)	cts Sampled	(0-11)	
MaySeptember Dry Season Monthly Algae:	19				Composite Volume	e (Juli)		
Chlórophyll a (filters—algae):	20				Chlorophyll a Volume	me		
					(use GF/F filter, 25 mL preferred volume)	mL preferre	ed volume)	

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Event ID (Month Year): APR 2019		1st	Measuremer	nt = left bank (	1st Measurement = left bank (looking downstream)	(-	1	
101	Ve	Velocity Area Method (preferred)	lethod (pref	erred)	Buoyant Object Method (Use only if velocity area method not possible)	Buoyant Object Method if velocity area method not	t Method ethod not p	ossible)
Crew Members: KH THE EL	-	Distance	1000	Velocity		Float 1	Float 2	Float 3
	No.	Bank (ft)		(ft/sec)	Distance (ft)			
	-		-		Float Time (sec)		/	
Vind Strength:	~		-		Float F	Float Reach Cross Section (ft)	Section (ft	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	1 m		/			Upper Section	Middle Section	Lower Section
Photos (check): AUpstream	4				Width	1		
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	'n				Depth 1	1		
2	9				Depth 2	No. of the second se		
	~				Depth 3			
	•				Depth 4			
					Depth 5			
ary-December Monthly In Situ I	ת	1			Mav—Sentember: Algae Collection for Chlorophull	Alese Colle	otion for C	~ Ilvdaorold
	10	1			Reach Length (150 m if wetted width < 10 m · 250 m	m if watter	d width < 1	7m. 250 m
DO: 100-6 % Salinity: <u>0・5</u> pt	11	1			if wetted width > 10 m):	0 m):		
r Temp: 19 1 °C	12	1			Collect	Collection Device		Quantity
Flow (from discharge measurement): cfs	13	-			(sum # transects per Device)	sects per De	iviçé)	
	14				Rubber Delimiter (Area=12.6ch <sup>2</sup> )	Area=12.69	₩ <sup>2</sup> )	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6gm <sup>2</sup> )	a=12.6gm²)	a.	
January-December Monthly Water: Total Phoenhorus Total Nitrosen and Nitrate 4 Nitrite as	16				Syringe Scrubber (Ares 5.3cm <sup>2</sup> )	Ares 5.3cm	<sup>2</sup> )	
Nitrogen (unfiltered):	17/				Other (Area=	/	)	
Dissolved Phosphorus and Nitrogen (field filtered):	1-00-				Number of Transects Sampled (0-11)	cts Sampled	(0-11)	
May-September Dry Season Monthly Algae:	6				Composite olume (mL)	e (mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	me		
					(use GF/F filter, 25 mL preferred volume)	mL preferre	ed volume)	

surement = left bank (looking downstream)

Float 3

Event ID (Month Year):       APR       2019         Site ID:	A 1 2 4 3 2 1 4 4 3 7 4 6 7 4 6 7 7 4 7 6 7 7 6 6 7 7 7 7 6 7 7 7 7	Discharge 1st Measurement = lef Velocity Area Method (preferred) from Left Depth (th) (ft/) Bank (ft) (ft/)	Di Measureme Depth (#)	Discharge Measurement hent = left bank (looking c referred) (ft/sec) Discreted)	Discharge Measurement 1st Measurement = left bank (looking downstream) an Method (preferred) (Use only if velo (Use only if velo (Distance (ft) Float Time (sec) Depth 1 Depth 2 Depth 4 (Depth 5 Depth 5	t downstream) Buoyant Object Method (Use only if velocity area method not possible) istance (ft) Float 1 Float 2 Floa istance (ft) Boat 1 Float 2 Floa istance (ft) Section (ft) Float 2 Floa bepth 1 Section (ft) Section (ft) Depth 2 Section Section Section Depth 3 Depth 4 Section Section Section Depth 5 Section (ft) Section S	Float A Method not p Float Float Float Section (ft. Section	Section Parameters Ploat
pH: 8-19 pH units EC: 9\ S μS/cm	10	-			May-September: Algae Collection for Chloroph Beach Length (150 m if wetted width < 10 m 35	r: Algae Coll	ection for C	hloroph
g/L SC: 056	11				Reach Length (150 m if wetted width $\leq$ 10 m; 25 if wetted width $>$ 10 m).	0 m if wette 10 m <sup>J.</sup>	d width ≤ 1	0 m; 25
DO: 41.2 % Salinity: ppt	:	1			it wetted width > 10 m):	10 m):		1
Water Temp: 10 °C °C	12	1						

Elow (circle ane). Elowing / Dandad / Dar	H		Float Time (sec)			
Wind Strength:	~	-	Float R	Float Reach Cross Section (ft)	section (ft)	144
Calmy Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	æ	/		Upper Section	Middle Section	Lower Section
Photos (check): A Upstream 😽 Downstream	4		Width	/		
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments. etc.) ·	'n	/	Depth 1			
	9		Depth 2/			
	-	/	Depth 3			
	0		Depth 4			
	σ		/Depth 5			
Provident and the state of Sta	6		May-September: Algae Collection for Chlorophyll a	Algae Collec	tion for Ch	lorophyli a
DO: ۲۰۰۶ mg/L SC: Loo μS/cm DO: ۲۰۰۶ % Salinity: Ppt	Ħ	1	If wetted width > 10 m): If wetted width ≤ 10 m; 250 m if wetted width > 10 m):	m if wetted ) m):	width ≤ 10	m; 250 m
Water Temp: 18.0 °C	12		Collecti	Collection Device	/	Quantity
Flow (fr <del>om discharge measurement</del> ): C cfs	13		(sum # transects per Device)	ects per Dev	ice)	
	14		Rubber Delimiter (Area=12.6cm <sup>2</sup> )	rea=12.6cm	2	
Samples Collected (check box)	15		PVC Delimiter (Area=12.6cm)	=12.6cm		
January-December Monthly Water: Total Phosphorus Total Nitrogen and Nitrate 4 Nitrite as	16		Syringe Scrubber (Area 5.3cm <sup>2</sup> )	rear5.3cm <sup>2</sup>		
Nitrogen (unfiltered):	17/		Other (Area=		(	
Dissolved Phosphorus and Nitrogen (field filtered):	-8		Number of Transects Sampled (0-11)	s Sampled (	0-11)	
May—September Dry Season Monthly Algae:	-8		Composite Volume (mL)	(mL)		
Chlorophyll a (filters—algae):	20		Chlorophyll a Volume	le M professo	(amiles b	
			I CZ / IIII I III A A A	nt preierre		

Discharge Measurement	st Measurement = left bank (looking downstream)
	15

Float 3

Float 2

Float 1

Distance (ft)

(ft/sec)

Velocity

(Use only if velocity area method not possible)

**Buoyant Object Method** 

Event ID (Month Year): Mrk 2019		1st N	1st Measurement = lef	t = lef
đ	Vel	Velocity Area Method (preferred)	ethod (prefe	erred)
TH EL	No.	Distance from Left Bank (ft)	Depth (ft)	Velo (ft/s
Latitude/Longitude: 34.5000 = 19.50/35 Flow (circle one): Flowing Ponded / Dry	1	0.1	0	0
Wind Strength:	2	5-0	0.0	Õ
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	m	3.0	2-0	Curron .
Photos (check): AUpstream Cownstream	4	0.5	0.1	0
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discrease commants atc.).	'n	2-0	2.0	0
	9	0 2	Luis a 1	0
	2	S I	-0	4
	∞	9.0	110	6
January—December Monthly <i>In Situ</i> Measurements:	6	10-2	8.0	Ô
8 25 pH units EC: 061	10	12.0	0.0	-
DO: 03 7 % Salinity: 5 ppt	11	5.2	56.0	-
	12	15.0	5-0	1-2
Flow (from discharge measurement): 16 10 cfs	13	0 0	0.65	an an ta B An ta
	14	0	5.0	0

May-September: Algae Collection for Chlorophyll a Quantity **Reach Length (**150 m if wetted width  $\leq$  10 m; 250 m Section Lower (use GF/F filter, 25 mL preferred volume) Float Reach Cross Section (ft) Middle Section Number of Kansects Sampled (0-11) (sum # transects per Device) Rubber Delimiter (Area=12.6cm<sup>2</sup>) Syringe Scrubber (Area=5.3cm<sup>2</sup>) **Collection Device** PVC Delimiter (Area=12.6em<sup>2</sup>) Upper if wetted width > 10 m): Composite Volume (mL) Chlorophyll a Volume Float Time (sec) Depth 2 Depth 3 Depth 4 Depth 5 Depth 1 Width Other (Area= 0.13 90.0 52.0 21.0 0.0 Ś 0-0 0.5 00 0.0 Ņ N.N. 0 1  $\bigcirc$ 0 50.02 0.65 0.0 0-0 0 00 60 0 5.0 F.'0 5.0 0.2 2 0 011 00 0 0 Ó S-S 0 Ø 0 0 Ví, S 5  $\bigcirc$ 0 0 0 0 0 3 01 18 19 20 33 16 1 Total Phosphorus, Total Nitrogen, and Nitrate + Nitrite as  $\mathcal{L}$ Dissolved Phosphorus and Nitrogen (field filtered): May-September Dry Season Monthly Algae: January-December Monthly Water: Samples Collected (check box) Chlorophyll a (filters—algae): Nitrogen (unfiltered):

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1 to lo	Ve	Velocity Area Method (preferred)	1ethod (prefi	erred)	Buc (Use only if y	Buoyant Object Method (Use only if velocity area method not possible)~	t Method ethod not no	ssihle) /
18119		Dictance						Asinice
Crew Members: KH EL	CN N	from Loft	Donth (ft)	Velocity		Float 1	Float 2	Float 3
		Bank (ft)		(ft/sec)	Distance (ft)		/	
Latitude/Longitude: 34:38003 - 119-30657	-	1.4	0	C	Float Time (sec)			
Wind Strength:	2		25.00	) () ()	Float	Float Reach Cross Section (ft)	Section (ft)	
Calm/ Light Breeze / Moderate Breeze / Strong Breeze / Windy	m	0.2	0.20	1-1-0		Upper	Middle	Lower
Photos (check): X Upstream X Downstream	4	-	0.30	- 0	Width	Innas		Section
Notes (e.g. homeless, wildlife, horses, swimming/recreation, discharge comments, etc.).	'n	20.0	0.60	5.0	Depth 1			
	9	23-0	57.0	1-9-0	Depth 2			
	2	26.0	540	1-37	Dept/ 3			
	∞	29.0	0.60	1-54	Depth 4			
January – December Monthly <i>In Situ</i> Measurements:	6	32-0	0,0	1-029	c utdan			
pH: 7 86 pH units EC: 201 µS/cm	10	\$0	0.00	2:23	Mav-September: Algae Collection for Chlorophyll a	: Algae Colle	ection for Ch	lorophyll o
DO: 30.6 % Salinity: 05 ppt	11	38.0	0.2	26.1	<pre>Keach Length (150 m if wetted width ≤ 10 m; 250 m if wetted width &gt; 10 m):</pre>	0 m if wetter 10 m):	d width ≤ 10	m; 250 m
Water Temp: 17-2 °C	12	0.17	0,00	2.22	Collec	Collection Device		/Ouantity
Flow (from discharge measurement):	13	0- H H	0.75	1.62	(sum # tran	(sum # transects per Device)	vice)	
	14	0-17-0	0.20	26.1	Rubber Delimiter (Area=12.6cm <sup>2</sup> )	(Area=12.6cr	n <sup>2</sup> )	
Samples Collected (check box)	15	Part and	0	52-	PVC Delimiter (Area=12.6cm <sup>2</sup> )	ea=12.6cm <sup>2</sup> )		
January—December Monthly Water: Total Phosphorus . Total Nitrogen. and Nitrate + Nitrite as	16	20.09	0,-	59.0	Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Area=5.3cm	<sup>2</sup> )	
Nitrogen (unfiltered):	17	50.2	0-1	Г. п.	Other (Area=	/	(	
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transects Sampled (0-11)	éts Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite Volume (mL)	e (mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	me .	-	
1 102270	-				(use GF/F Titer, 25 mL preferred volume)	mL preferre	ed volume)	

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Measu			1st

Event ID (Month Year): APR 2019		1st	Measuremer	it = left bank (l	1st Measurement = left bank (looking downstream)			
	Ve	Velocity Area Method (preferred)	lethod (pref	erred)	Buoyant Object Method (Use only if velocity area method not possible)	Buoyant Object Method if velocity area method not	: Method ethod not po	ssible)
Date/Time: 4/8/14 28/0	ł	Distance		Velocity		Float 1	Float	Float 3
2	vo	Bank (ft)	Depth (TT)	(ft/sec)	Distance (ft)			
Latitude/Longitude: 34 - 34228 -119-28637		10 Š	0	0	Float Time (sec)			
Vind Strength:	7	1.9	8 .0	0.4	Float F	Float Reach Cross Section (ft)	Section (ft)	
Calm / Light Breeze / Moderate Breeze / Strong Breeze / Windy Wind Direction: Blowing (circle one) From / To	m	6.5	0	0-54		Section	Middle Section	Lower Section
Photos (check): 🔉 Upstream 🖄 Downstream	4	0.1	Ç	0.8 S	Width			
Notes (e.g. homeless, wildlife, horses, swimming/recreation,	ß	7.5	9	0.52	Depth 1			
set of	9	0.8	8, 0	0.28	Depth Z			
trees realised	2	in N	9.0	51.0	Depţh 3			
)	∞	ç o	5.0	0-13	Depth 4			
Isnusry-December Monthly In Situ Mescurements:	σ	5.6	C	60.0	c index			
pH: 8-22 pH units EC: 302/ µS/cm	10	0.0	0.0	90.0-	May-September: Algae Collection for Chlorophyll a	: Algae Colle	d width < 10	In. 250 m
DO: <u>11-1 - mg/L</u> C SC: <u>5 'OC</u> μS/cm DO: 11-03 - % "Salinity: 2-0 ppt	11	0.5	0.5	10.0	if wetted width > 10 m):	10 m):		
er Temp: 15-3 °C	12	6.0	0	0	Collect	Collection Device	1	Quantity
Flow (from discharge measurement): 1-2 1 cfs	13				(sum # transects per Device)	sects per De	ivice)	
	14				Rubber Delimiter (Area=12.6cm <sup>2</sup> )	Area=12.6c	( <sub>2</sub> ,m	
Samples Collected (check box)	15				PVC Delimiter (Area=12.6cm <sup>2</sup> )	a=12.6cm <sup>2</sup> )		
January—December Monthly Water: Total Bhocohorus Total Nitroran and Nitrate 4 Nitrite as	16				Syringe Scrubber (Area=5.3cm <sup>2</sup> )	Area=5.3cm	<sup>2</sup> )	
	11				Other (Area=		-	
Dissolved Phosphorus and Nitrogen (field filtered):	18				Number of Transects Sampled (0-11)	cts Sampled	(0-11)	
May—September Dry Season Monthly Algae:	19				Composite volume (mL)	e (mL)		
Chlorophyll a (filters—algae):	20				Chlorophyll a Volume	me	-	
					(use GF/F filter, 25 mL preferred volume)	mL preterr	ed volume)	

751 85 # OIGO655

# TOTAL MAXIMUM DAILY LOAD FOR ALGAE, EUTROPHIC CONDITIONS, AND NUTRIENTS IN VENTURA RIVER, INCLUDING THE ESTUARY, AND ITS TRIBUTARIES (VR ALGAE TMDL)

# **2019 ANNUAL REPORT**

# APPENDIX B: CHAIN OF CUSTODIES AND LABORATORY REPORTS (MAY 2018 - APRIL 2019)

Submitted to TMDL Responsible Parties Implementing Receiving Water Monitoring Requirements:

City of Ojai City of Ventura County of Ventura Ojai Valley Sanitary District California Department of Transportation Ventura County Agricultural Irrigated Lands Group Ventura County Watershed Protection District

Prepared by:

Ventura County Watershed Protection District June 1, 2018



VENTURA CUIDIN

# Ventura River and Tributanes Algae, Eutrophic Conditions, and Nutrients TMDL (VR Algae TMDL)

**Comprehensive Monitoring Program** 

							_		
CHAIN-OF-CUSTO		RD .						0F	
CLIENT: Ventura C	ounty Watersh	ed Protection District (M	laste	r Agr	eem	ent V	VEC	KLABORATOFY18MA01, Project P60405	55)
SAMPLING EVENT:		MAY 2018							
SAMPLING DATE:		15 18 + 5/16/19	5					A set a state that the second	
SAMPLERS:	L. MEEK	ER D. LAAK							
GRAB SAMPLES	···		•		ï				7
			Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen			** FIELD FILTERED	
SAMPLE ID	D	ATE/TIME	Total	Disso	Nitrat			NOTES	
TMDL-Est	5/16/18	1255	x	x	x			LM	
TMDL-R1		1100	x	x	x			LM	
TMDL-R2		0820	x	x	<b>x</b> .			LM	
TMDL-R3	5/15/18	1200	×.	x	x			DL	
TMDL-R4		0805	x	<b>X</b> -	x			OL	
TMDL-CL		1400	x	x	x			DL	
TMDL-SA		1025	x	x	x			DL	
TMDL-FD-	-		X	-X	X			(Note which site)	
Signature: Cluffod			Signature: BRUCE MARKOVICH						
Affiliation: ACUAPD			Affiliation: WECKLABS						
Date/Time Received:		Date/Time Received: 5/17/18/4325							
Date/Time Relinquished: 51718 1325		Date/Time Relinquished:							
Signature: Ce A	P	· · · · · · · · · · · · · · · · · · ·	Signa	atures	4	E	F		1
Print Name: Gover	- Runa	R	Print Name: fixster abad						
Affiliation:	<u>,</u>		Affilia	tion:	9				
Date/Time Received: 3/1	17/29							117/18 16:50	1.)
Date/Time Relinquished:	- Let		Date/Time Received: 5/17/18 /6:50						

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

Dissolved samples were field filtered



FINAL REPORT

Work Orders:	8E17091	Report Date:	6/08/2018
		Received Date:	5/17/2018
Proiect:	TMDL Study May 2018 P6040555	Turnaround Time:	Normal
,		Phones:	(805) 658-4375
		Fax:	(805) 654-3350
Attn:	Kelly Hahs	P.O. #:	WECKLABORATOFY1 8MA01
Client:	Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	

### DoD-ELAP #L2457 • ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 5/17/18 with the Chain-of-Custody document. The samples were received in good condition, at 1.1 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee Operations Manager/Senior PM











FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

## Project Number: TMDL Study May 2018 P6040555

**Reported:** 06/08/2018 14:35

Project Manager: Kelly Hahs

## Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	L. Meeker, D. Laac	8E17091-01	Water	05/16/18 12:55	
TMDL-R1	L. Meeker, D. Laac	8E17091-02	Water	05/16/18 11:00	
TMDL-R2	L. Meeker, D. Laac	8E17091-03	Water	05/16/18 08:20	
TMDL-R3	L. Meeker, D. Laac	8E17091-04	Water	05/15/18 12:00	
TMDL-R4	L. Meeker, D. Laac	8E17091-05	Water	05/15/18 08:05	
TMDL-CL	L. Meeker, D. Laac	8E17091-06	Water	05/15/18 14:00	
TMDL-SA	L. Meeker, D. Laac	8E17091-07	Water	05/15/18 10:25	



FINAL REPORT

## Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study May 2018 P6040555

**Reported:** 06/08/2018 14:35

Project Manager: Kelly Hahs

Sample: TMDL-Est					Sam	pled: 05/	16/18 12:55 by L. Mee	eker, D. Laac
8E17091-01 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 05	5/30/18 19:00		Analyst: mnq	
Dissolved Nitrogen		0.3		0.30	mg/l	1x1	06/01/18 16:25	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 05	5/30/18 18:56		Analyst: mnq	
Nitrogen, Total		0.58		0.20	mg/l	1x1	06/01/18 16:25	
Method: EPA 351.2	Batch ID: W8E1668	Instr: AA06		Prepared: 05	5/30/18 18:56		Analyst: mnq	
TKN		0.58	0.050	0.10	mg/l	1x1	06/01/18 16:25	
Method: EPA 351.2	Batch ID: W8E1669	Instr: AA06		Prepared: 05	5/30/18 19:00		Analyst: mnq	
TKN, Soluble		0.30	0.050	0.10	mg/l	1x1	06/01/18 16:25	
Method: EPA 353.2	Batch ID: W8E1096	Instr: AA04		Prepared: 05	5/21/18 09:40		Analyst: ajk	
NO2+NO3 as N		ND	0.083	0.20	mg/l	1x1	05/21/18 16:08	
Method: EPA 365.1	Batch ID: W8E1430	Instr: AA01		Prepared: 05	5/25/18 12:05		Analyst: AJK	
Phosphorus, Dissolved		0.0084	0.0014	0.010	mg/l	1x1	05/30/18 14:55	
<b>Method:</b> EPA 365.1	Batch ID: W8E1431	Instr: AA01		Prepared: 05	5/25/18 12:14		Analyst: AJK	
Method: EPA 365.1 Phosphorus as P, Total	Batch ID: W8E1431		0.0014	<b>Prepared:</b> 05 0.010	5/25/18 12:14 mg/l	1x1	Analyst: AJK 05/30/18 15:49	
	Batch ID: W8E1431		0.0014	•	mg/l		•	ker, D. Laad
Phosphorus as P, Total	Batch ID: W8E1431		0.0014	•	mg/l		05/30/18 15:49	ker, D. Laac
Phosphorus as P, Total       Sample:     TMDL-R1	Batch ID: W8E1431		0.0014 MDL	•	mg/l		05/30/18 15:49	
Phosphorus as P, Total         Sample:       TMDL-R1         8E17091-02 (Water)		0.065		0.010	mg/l Samı	pled: 05/	05/30/18 15:49 16/18 11:00 by L. Mee	
Phosphorus as P, Total Sample: TMDL-R1 8E17091-02 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC		0.065		0.010 MRL	mg/l Samı	pled: 05/	05/30/18 15:49 16/18 11:00 by L. Mee	
Phosphorus as P, Total         Sample:       TMDL-R1         8E17091-02 (Water)         Analyte         Conventional Chemistry/Physical Parameter	ers by APHA/EPA/ASTM Methods	0.065 Result		0.010 MRL	mg/l Sam Units	pled: 05/	05/30/18 15:49 16/18 11:00 by L. Mee Analyzed	
Phosphorus as P, Total Sample: TMDL-R1 8E17091-02 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	ers by APHA/EPA/ASTM Methods	0.065 Result Instr: [CALC]		0.010 MRL Prepared: 05 0.30	mg/l Sam Units 5/30/18 19:00	pled: 05/ Dil	05/30/18 15:49 16/18 11:00 by L. Mee Analyzed Analyst: mnq 06/01/18 16:25	
Phosphorus as P, Total         Sample:       TMDL-R1         8E17091-02 (Water)         Analyte         Conventional Chemistry/Physical Parameter         Method: *** DEFAULT SPECIFIC         METHOD ***	rrs by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC] 1.3		0.010 MRL Prepared: 05 0.30	mg/l Sam Units 5/30/18 19:00 mg/l	pled: 05/ Dil	05/30/18 15:49 16/18 11:00 by L. Mee Analyzed Analyst: mnq	
Phosphorus as P, Total Sample: TMDL-R1 8E17091-02 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	0.065 Result Instr: [CALC] 1.3 Instr: [CALC]		0.010 MRL Prepared: 05 0.30 Prepared: 05 0.20	mg/l Sam Units 5/30/18 19:00 mg/l 5/30/18 18:56 mg/l	pled: 05/ Dil 1x1	05/30/18 15:49 16/18 11:00 by L. Mee Analyzed Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25	
Phosphorus as P, Total Sample: TMDL-R1 8E17091-02 (Water) Analyte Conventional Chemistry/Physical Parameter Method: **** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	rrs by APHA/EPA/ASTM Methods Batch ID: [CALC]	0.065 Result Instr: [CALC] 1.3 Instr: [CALC] 1.4		0.010 MRL Prepared: 05 0.30 Prepared: 05 0.20	mg/l Sam Units 5/30/18 19:00 mg/l 5/30/18 18:56	pled: 05/ Dil 1x1	05/30/18 15:49 16/18 11:00 by L. Mee Analyzed Analyst: mnq 06/01/18 16:25 Analyst: mnq	
Phosphorus as P, Total         Sample:       TMDL-R1         8E17091-02 (Water)         Analyte         conventional Chemistry/Physical Parameter         Method: **** DEFAULT SPECIFIC         METHOD ****         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	0.065 Result Instr: [CALC] 1.3 Instr: [CALC] 1.4 Instr: AA06	MDL	0.010 MRL Prepared: 09 0.30 Prepared: 09 0.20 Prepared: 09 0.20	mg/l Sam Units 5/30/18 19:00 mg/l 5/30/18 18:56 mg/l 5/30/18 18:56 mg/l	pled: 05/ Dil 1x1 1x1	05/30/18 15:49 16/18 11:00 by L. Mee Analyzed Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25	
Phosphorus as P, Total Sample: TMDL-R1 8E17091-02 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8E1668	0.065 Result Instr: [CALC] 1.3 Instr: [CALC] 1.4 Instr: AA06 0.59	MDL	0.010 MRL Prepared: 09 0.30 Prepared: 09 0.20 Prepared: 09 0.20	mg/l Sam Units 5/30/18 19:00 mg/l 5/30/18 18:56 mg/l	pled: 05/ Dil 1x1 1x1	05/30/18 15:49 16/18 11:00 by L. Mee Analyzed Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25 Analyst: mnq	
Phosphorus as P, Total         Sample:       TMDL-R1         8E17091-02 (Water)         Analyte         conventional Chemistry/Physical Parameter         Method:       **** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method:	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8E1668	0.065 Result Instr: [CALC] 1.3 Instr: [CALC] 1.4 Instr: AA06 0.59 Instr: AA06	<b>MDL</b>	0.010 MRL Prepared: 09 0.30 Prepared: 09 0.20 Prepared: 09 0.10 Prepared: 09 0.10	mg/l Sam Units 5/30/18 19:00 mg/l 5/30/18 18:56 mg/l 5/30/18 18:56 mg/l	pled: 05/ Dil 1x1 1x1 1x1	05/30/18 15:49 16/18 11:00 by L. Mee Analyzed Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25 Analyst: mnq	
Phosphorus as P, Total Sample: TMDL-R1 8E17091-02 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8E1668 Batch ID: W8E1669	0.065 Result Instr: [CALC] 1.3 Instr: [CALC] 1.4 Instr: AA06 0.59 Instr: AA06 0.49	<b>MDL</b>	0.010 MRL Prepared: 09 0.30 Prepared: 09 0.20 Prepared: 09 0.10 Prepared: 09 0.10	mg/l Sam Units 5/30/18 19:00 mg/l 5/30/18 18:56 mg/l 5/30/18 18:56 mg/l 5/30/18 19:00 mg/l	pled: 05/ Dil 1x1 1x1 1x1	05/30/18 15:49 16/18 11:00 by L. Mee Analyzed Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25	
Phosphorus as P, Total         Sample:       TMDL-R1         8E17091-02 (Water)         Analyte         Conventional Chemistry/Physical Parameter         Method:       *** DEFAULT SPECIFIC         Method:       Various         Nitrogen, Total       Method: EPA 351.2         TKN       TKN, Soluble         Method: EPA 353.2       Method: EPA 353.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8E1668 Batch ID: W8E1669	0.065 Result Instr: [CALC] 1.3 Instr: [CALC] 1.4 Instr: AA06 0.59 Instr: AA06 0.49 Instr: AA04	<b>MDL</b> 0.050 0.050	0.010 MRL Prepared: 09 0.30 Prepared: 09 0.20 Prepared: 09 0.10 Prepared: 09 0.10 Prepared: 09 0.10 Prepared: 09 0.20 Prepared: 09 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.	mg/l Sam Units 5/30/18 19:00 mg/l 5/30/18 18:56 mg/l 5/30/18 19:00 mg/l 5/30/18 19:00	pled: 05/ Dil 1x1 1x1 1x1 1x1 1x1	05/30/18 15:49 16/18 11:00 by L. Mee Analyzed Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25 Analyst: mnq 06/01/18 16:25	ker, D. Laac Qualifier

Instr: AA01

0.044

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0.0014

Batch ID: W8E1431

0.010

Prepared: 05/25/18 12:14

mg/l

Method: EPA 365.1

Phosphorus as P, Total

Analyst: AJK 05/30/18 15:51

1x1

# **Certificate of Analysis**

**FINAL REPORT** 

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study May 2018 P6040555

Reported: 06/08/2018 14:35

Project Manager: Kelly Hahs

(Continued)

Sample Results 

Sample:	TMDL-R2					Sam	npled: 05/	/16/18 8:20 by L. Mee	eker, D. Laac
	8E17091-03 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional	Chemistry/Physical Parameters by	y APHA/EPA/ASTM Methods							
Method: *** METHOD ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 05	5/30/18 19:00		Analyst: mnq	
Dissolved	l Nitrogen		2.4		0.30	mg/l	1x1	06/01/18 16:25	
Method: _Va	arious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 05	5/30/18 18:56		Analyst: mnq	
Nitrogen,	Total		2.6		0.20	mg/l	1x1	06/01/18 16:25	
Method: EPA	A 351.2	Batch ID: W8E1668	Instr: AA06		Prepared: 05	5/30/18 18:56		Analyst: mnq	
TKN			0.52	0.050	0.10	mg/l	1x1	06/01/18 16:25	
Method: EPA	A 351.2	Batch ID: W8E1669	Instr: AA06		Prepared: 05	5/30/18 19:00		Analyst: mnq	
TKN, Solu	ıble		0.38	0.050	0.10	mg/l	1x1	06/01/18 16:25	
Method: EPA	A 353.2	Batch ID: W8E1096	Instr: AA04		Prepared: 05	5/21/18 09:40		Analyst: ajk	
NO2+NO3	as N		2.0	0.083	0.20	mg/l	1x1	05/21/18 16:10	
Method: EPA	A 365.1	Batch ID: W8E1430	Instr: AA01		Prepared: 05	5/25/18 12:05		Analyst: AJK	
Phosphor	us, Dissolved		0.14	0.0014	0.010	mg/l	1x1	05/30/18 15:01	
Method: EPA	A 365.1	Batch ID: W8E1431	Instr: AA01		Prepared: 05	5/25/18 12:14		Analyst: AJK	
Phosphor	us as P, Total		0.16	0.0014	0.010	mg/l	1x1	05/30/18 15:52	

Sample: TMDL-R3

8E17091-04 (Water)

Sampled: 05/15/18 12:00 by L. Meeker, D. Laac

Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parame	eters by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/30/18 19:00		Analyst: mnq	
Dissolved Nitrogen		0.59		0.30	mg/l	1x1	06/01/18 16:25	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/30/18 18:56		Analyst: mnq	
Nitrogen, Total		0.6		0.20	mg/l	1x1	06/01/18 16:25	
Method: EPA 351.2	Batch ID: W8E1668	Instr: AA06		Prepared: 0	5/30/18 18:56		Analyst: mnq	
TKN		0.078	0.050	0.10	mg/l	1x1	06/01/18 16:25	J
Method: EPA 351.2	Batch ID: W8E1669	Instr: AA06		Prepared: 0	5/30/18 19:00		Analyst: mnq	
TKN, Soluble		0.068	0.050	0.10	mg/l	1x1	06/01/18 16:25	J
Method: EPA 353.2	Batch ID: W8E1096	Instr: AA04		Prepared: 0	5/21/18 09:40		Analyst: ajk	
NO2+NO3 as N		0.52	0.083	0.20	mg/l	1x1	05/21/18 16:11	
Method: EPA 365.1	Batch ID: W8E1430	Instr: AA01		Prepared: 0	5/25/18 12:05		Analyst: AJK	
Phosphorus, Dissolved		0.0072	0.0014	0.010	mg/l	1x1	05/30/18 15:02	J
Method: EPA 365.1	Batch ID: W8E1431	Instr: AA01		Prepared: 0	5/25/18 12:14		Analyst: AJK	
Phosphorus as P, Total		0.010	0.0014	0.010	mg/l	1x1	05/30/18 15:54	

# **Certificate of Analysis**

**FINAL REPORT** 

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study May 2018 P6040555

Reported: 06/08/2018 14:35

Project Manager: Kelly Hahs

(Continued)

Sample Results

Sample: TMDL-R4					Sam	pled: 05/	'15/18 8:05 by L. Mee	eker, D. Laac
8E17091-05 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters by	APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/30/18 19:00		Analyst: mnq	
Dissolved Nitrogen		1.5		0.30	mg/l	1x1	06/01/18 16:25	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/30/18 18:56		Analyst: mnq	
Nitrogen, Total		1.5		0.20	mg/l	1x1	06/01/18 16:25	
Method: EPA 351.2	Batch ID: W8E1668	Instr: AA06		Prepared: 0	5/30/18 18:56		Analyst: mnq	
TKN		ND	0.050	0.10	mg/l	1x1	06/01/18 16:25	
Method: EPA 351.2	Batch ID: W8E1669	Instr: AA06		Prepared: 0	5/30/18 19:00		Analyst: mnq	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	06/01/18 16:25	
Method: EPA 353.2	Batch ID: W8E1096	Instr: AA04		Prepared: 0	5/21/18 09:40		Analyst: ajk	
NO2+NO3 as N		1.5	0.083	0.20	mg/l	1x1	05/21/18 16:11	
Method: EPA 365.1	Batch ID: W8E1430	Instr: AA01		Prepared: 0	5/25/18 12:05		Analyst: AJK	
Phosphorus, Dissolved		0.0064	0.0014	0.010	mg/l	1x1	05/30/18 15:04	J
Method: EPA 365.1	Batch ID: W8E1431	Instr: AA01		Prepared: 0	5/25/18 12:14		Analyst: AJK	
Phosphorus as P, Total		0.0070	0.0014	0.010	mg/l	1x1	05/30/18 15:55	J

Sample: TMDL-CL

8E17091-06 (Water)

Sampled: 05/15/18 14:00 by L. Meeker, D. Laac

Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parame	ters by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/30/18 19:00		Analyst: mnq	
Dissolved Nitrogen		0.65		0.30	mg/l	1x1	06/01/18 16:25	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/30/18 18:56		Analyst: mnq	
Nitrogen, Total		0.83		0.20	mg/l	1x1	06/01/18 16:25	
Method: EPA 351.2	Batch ID: W8E1668	Instr: AA06		Prepared: 0	5/30/18 18:56		Analyst: mnq	
ТКМ		0.83	0.050	0.10	mg/l	1x1	06/01/18 16:25	
Method: EPA 351.2	Batch ID: W8E1669	Instr: AA06		Prepared: 0	5/30/18 19:00		Analyst: mnq	
TKN, Soluble		0.65	0.050	0.10	mg/l	1x1	06/01/18 16:25	
Method: EPA 353.2	Batch ID: W8E1096	Instr: AA04		Prepared: 0	5/21/18 09:40		Analyst: ajk	
NO2+NO3 as N		ND	0.083	0.20	mg/l	1x1	05/21/18 16:17	
Method: EPA 365.1	Batch ID: W8E1430	Instr: AA01		Prepared: 0	5/25/18 12:05		Analyst: AJK	
Phosphorus, Dissolved		0.032	0.0014	0.010	mg/l	1x1	05/30/18 15:05	
Method: EPA 365.1	Batch ID: W8E1431	Instr: AA01		Prepared: 0	5/25/18 12:14		Analyst: AJK	
Phosphorus as P, Total		0.024	0.0014	0.010	mg/l	1x1	05/30/18 15:57	



Ventura, CA 93009

# **Certificate of Analysis**

FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Project Number: TMDL Study May 2018 P6040555

**Reported:** 06/08/2018 14:35

Project Manager: Kelly Hahs

(Continued)

Sample:	TMDL-SA					Sam	oled: 05/	/15/18 10:25 by L. Mee	eker, D. Laa
	8E17091-07 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional	Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods							
Method: *** METHOD ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/30/18 19:00		Analyst: mnq	
Dissolved	l Nitrogen		1.7		0.30	mg/l	1x1	06/01/18 16:25	
Method: _Va	arious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	5/30/18 18:56		Analyst: mnq	
Nitrogen,	Total		1.7		0.20	mg/l	1x1	06/01/18 16:25	
Method: EPA	A 351.2	Batch ID: W8E1668	Instr: AA06		Prepared: 0	5/30/18 18:56		Analyst: mnq	
TKN			ND	0.050	0.10	mg/l	1x1	06/01/18 16:25	
Method: EPA	A 351.2	Batch ID: W8E1669	Instr: AA06		Prepared: 0	5/30/18 19:00		Analyst: mnq	
TKN, Solu	ble		ND	0.050	0.10	mg/l	1x1	06/01/18 16:25	
Method: EPA	A 353.2	Batch ID: W8E1096	Instr: AA04		Prepared: 0	5/21/18 09:40		Analyst: ajk	
NO2+NO3	as N		1.7	0.083	0.20	mg/l	1x1	05/21/18 16:17	
Method: EPA	A 365.1	Batch ID: W8E1430	Instr: AA01		Prepared: 0	5/25/18 12:05		Analyst: AJK	
Phosphor	us, Dissolved		0.012	0.0014	0.010	mg/l	1x1	05/30/18 15:07	
Method: EPA	A 365.1	Batch ID: W8E1431	Instr: AA01		Prepared: 0	5/25/18 12:14		Analyst: AJK	
Phosphor	us as P, Total		0.024	0.0014	0.010	mg/l	1x1	05/30/18 15:45	



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study May 2018 P6040555

**Reported:** 06/08/2018 14:35

Project Manager: Kelly Hahs

	Quality	Control	Results
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Conventional Chemistry/Physical Parameters by APH	IA/EPA/AST	M Metho	ds								
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W8E1096 - EPA 353.2											
Blank (W8E1096-BLK1)					Prepared & A	nalyzed: 05/	21/18				
NO2+NO3 as N	ND	0.083	0.20	mg/l							
LCS (W8E1096-BS1)					Prepared & A	nalyzed: 05/	21/18				
NO2+NO3 as N	0.978	0.083	0.20	mg/l	1.00		98	90-110			
Duplicate (W8E1096-DUP1)	Sourc	e: 8E17073	8-02		Prepared & A	nalyzed: 05/	21/18				
NO2+NO3 as N	ND	0.083	0.20	mg/l		ND				20	
Matrix Spike (W8E1096-MS1)	Sourc	e: 8E21037	7-21		Prepared & A	nalyzed: 05/	21/18				
NO2+NO3 as N	9.88	0.083	0.20	mg/l	2.00	7.74	107	90-110			
Matrix Spike (W8E1096-MS2)	Sourc	e: 8E21041	-11		Prepared & A	nalvzed: 05/	21/18				
NO2+NO3 as N	4.34	0.083	0.20	mg/l	2.00	2.34	100	90-110			
Matrix Spike Dup (W8E1096-MSD1)	Source	e: 8E21037	7-21		Prepared & A	nalvzed• 05/	21/18				
NO2+NO3 as N	9.95	0.083	0.20	mg/l	2.00	7.74	110	90-110	0.8	20	
Matrix Saika Dup (MRE1006 MSD2)	[auro	e: 8E21041	11		Dropared 0, A	naluzadi OF (	21/10				
Matrix Spike Dup (W8E1096-MSD2) NO2+NO3 as N	4.39	0.083	0.20	mg/l	Prepared & A 2.00	2.34	103	90-110	1	20	
R-4-1- W051420 FRA 205 1											
Batch: W8E1430 - EPA 365.1				_				_			
Blank (W8E1430-BLK1) Phosphorus, Dissolved		0.0014	0.010		pared: 05/25/1	8 Analyzed:	05/30/18	B			
		0.0014	0.010	mg/l							
LCS (W8E1430-BS1)				Pre	pared: 05/25/1	8 Analyzed:					
Phosphorus, Dissolved	0.0497	0.0014	0.010	mg/l	0.0500		99	90-110			
Matrix Spike (W8E1430-MS1)	Sourc	e: 8E17091	-01	Pre	pared: 05/25/1	8 Analyzed:	05/30/18	В			
Phosphorus, Dissolved	0.0575	0.0014	0.010	mg/l	0.0500	0.00839	98	90-110			
Matrix Spike Dup (W8E1430-MSD1)	Sourc	e: 8E17091	-01	Pre	pared: 05/25/1	8 Analyzed:	05/30/18	B			
Phosphorus, Dissolved	0.0563	0.0014	0.010	mg/l	0.0500	0.00839	96	90-110	2	20	
Batch: W8E1431 - EPA 365.1											
Blank (W8E1431-BLK1)				Pre	pared: 05/25/1	8 Analyzed:	05/30/18	8			
Phosphorus as P, Total	ND	0.0014	0.010	mg/l	purcu: 05/25/1	o raajizea.					
LCS (W8E1431-BS1)				Dro	pared: 05/25/1	8 Analyzod	05/30/19	8			
Phosphorus as P, Total	0.0497	0.0014	0.010	mg/l	0.0500	o Analyzeu.	99	90-110			
Madein Serilar (M051421 M51)	<b>6</b>		07	Dee		0. A	05 /20 /1	•			
Matrix Spike (W8E1431-MS1) Phosphorus as P, Total	- 0.0689	e: 8E17091 0.0014	0.010	mg/l	pared: 05/25/1 0.0500	0.0241	90	90-110			
·	-							_			
Matrix Spike Dup (W8E1431-MSD1) Phosphorus as P. Total	Sourc - 0.0700	e: 8E17091 0.0014	0.010	Pre mg/l	pared: 05/25/1 0.0500	8 Analyzed: 0.0241	92	<b>B</b> 90-110	2	20	
• •			-	5				-			
Batch: W8E1668 - EPA 351.2											
Blank (W8E1668-BLK1)	ND	0.050	0.40		pared: 05/30/1	8 Analyzed:	06/01/18	B			
TKN	ND	0.050	0.10	mg/l							
Blank (W8E1668-BLK2)					pared: 05/30/1	8 Analyzed:	06/01/18	В			
TKN	ND	0.050	0.10	mg/l							



**FINAL REPORT** 

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study May 2018 P6040555

**Reported:** 06/08/2018 14:35

Project Manager: Kelly Hahs

(Continued)

## **Quality Control Results**

					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
Batch: W8E1668 - EPA 351.2 (Continued)											
LCS (W8E1668-BS1)				Pre	oared: 05/30/1	8 Analyzed	: 06/01/18	3			
TKN	0.978	0.050	0.10	mg/l	1.00		98	90-110			
LCS (W8E1668-BS2)				Pre	oared: 05/30/1	8 Analyzed	06/01/18	3			
TKN	0.964	0.050	0.10	mg/l	1.00	o /	96	90-110			
Matrix Spike (W8E1668-MS1)	Sourc	e: 8E22012	.06	Pro	oared: 05/30/1	8 Analyzed	06/01/1	2			
TKN		0.050	0.10	mg/l		0.155		90-110			
Matrix Spike (W8E1668-MS2)	Sourc	e: 8E22012	-07	Prei	oared: 05/30/1	8 Analyzed	06/01/1	2			
TKN		0.050	0.10	mg/l	1.00	-	99	90-110			
Matrix Spike Dup (W8E1668-MSD1)	Sourc	e: 8E22012	-06	Pre	oared: 05/30/1	8 Analyzed	: 06/01/18	3			
TKN	1.19	0.050	0.10	mg/l	1.00	-		90-110	0.7	10	
Matrix Spike Dup (W8E1668-MSD2)	Sourc	e: 8E22012	-07	Pre	oared: 05/30/1	8 Analyzed	: 06/01/18	3			
TKN	1.18	0.050	0.10	mg/l		-		90-110	2	10	
Batch: W8E1669 - EPA 351.2											
Blank (W8E1669-BLK1)				Pre	oared: 05/30/1	8 Analyzed	: 06/01/18	3			
TKN, Soluble		0.050	0.10	mg/l		-					
LCS (W8E1669-BS1)				Pre	oared: 05/30/1	8 Analyzed	: 06/01/18	3			
TKN, Soluble	0.952	0.050	0.10	mg/l	1.00	-	95	90-110			
Matrix Spike (W8E1669-MS1)	Sourc	e: 8E17091	-01	Pre	oared: 05/30/1	8 Analyzed	: 06/01/18	3			
TKN, Soluble	1.30	0.050	0.10	mg/l	1.00	0.298	100	90-110			
Matrix Spike Dup (W8E1669-MSD1)	Sourc	e: 8E17091	-01	Pre	oared: 05/30/1	8 Analyzed	: 06/01/18	3			
TKN, Soluble	1.34	0.050	0.10	mg/l		0.298		90-110	3	10	



FINAL REPORT

Ventura County Watershed Protection District

#### 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study May 2018 P6040555

**Reported:** 06/08/2018 14:35

Project Manager: Kelly Hahs

## Notes and Definitions

ltem	Definition
J	Estimated conc. detected <mrl and="">MDL.</mrl>
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.
Any rema	aining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB)

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.



September 10<sup>th</sup>, 2018

Ventura Country Watershed Protection District Kelly Hahs 800 S Victoria Ave Ventura, CA 93009

Dear Ms. Hahs:

Aquatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed chlorophyll-a data report for the Ventura River Algae TMDL. Chlorophyll- a analyses are conducted under guidelines prescribed in *Standard Methods for the Examination of Water and Wastewater* (APHA, 22<sup>nd</sup> Edition), Section SM 10200 H.

Please contact me with any questions or issues you may have regarding this report.

Sincerely,

Karin Wisenbaker Senior Biologist (805) 643-5621 ex.17

Client: Ventura Country Watershed Protection District Project: Ventura River Algae TMDL



Station	Field Replicate	Number of Transects Collected	Chlorophyll a	Units
TMDL-R1	1	11	24	ug/cm2
TMDL-R2	1	11	30	ug/cm2
TMDL-R3	1	11	28	ug/cm2
TMDL-R4	1	11	21	ug/cm2
TMDL-CL	1	11	8.3	ug/cm2
TMDL-SA	1	9	3.6	ug/cm2
TMDL-Est	1	NA	46	ug/L

Chlorophyll a results from May 15th-16th, 2018

om: Aquatic Bioassa and Consulting L 29 N. Olive St. Ventura, CA 930	abs.	Phone: Fax: Project ID:		13-2930 <b>)</b>		To:	Company: Address: Phone:	Aquatic Bioassay and Consulting Labs. 29 N. Olive St. Ventura, CA 93001	-		
1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -								ANALYSIS			-
Sample I.D. No.	Sample Date	Time	Matrix	Composite Volume/ No.	Reps						
R-4	5:15:18	0805		300 mg.	•	Chl-a					_
SA	5.15.18	1025		288ml	1	V					-
R-3	5.15.18 5.15.18	1200				$\checkmark$					
CL	5.15.18	1400		390ml 340ml		V					
											_
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ecial Instructions:		l									-
LINQUISHED BY:	DATE: TIME: 5-15-18 1525	RECEME		DATE: TIM		RELIN	QUISHED BY:	DATE: TIME: RECEN	/ED BY:	DATE: T	זוד

rom: Aquatic Bioassay and Consulting Labs. 29 N. Olive St. Ventura, CA 93001		Phone:         (805) 643-5621           Fax:         (805) 643-2930           Project ID:         VCWPD           Algae TMDL				То:	Company: Address: Phone:	Aquatic Bioassay and Consulting Labs. 29 N. Olive St. Ventura, CA 93001				
Sample I.D. No.	Sample Date	Time	Matrix	Composide Volume/ No.	Reps				ANALYSIS			
						Chl-a						
R-2	5-16-18	0820		316		V		-		-		
R-1	5.16.18 5.16.18	1100		330		V					_	┢
267		12.55		1000					_			
nite de la composition de la c												
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ecial Instructions:												
LINQUISHED BY:	DATE: TIME:	RECEIVE	1	DATE: TIN		RELIN	IQUISHED BY:	DATE: TI	ME: RECEIVE	D BY:	DATE:	T

Store Control Protocoling D	A	Ventu Igae, Eutrophic	c Co (VR	ond Alg	itio gae	ns, • TN	an IDL	d N .)	lutrients TMDL
		Compre	nens	sive	WO	ΠΙΟ	ring	) Pr	-
CHAIN-OF-CUSTO									<u>1</u> OF <u>1</u>
CLIENT: Ventura Co SAMPLING EVENT:	-	UNE 2018	Maste	r Agr	reem	ent v	VECI	KLAI	3ORATOFY18MA01, Project P6040555)
SAMPLING EVENT: SAMPLING DATE: 6									······································
	LAAK	410							
GRAB SAMPLES									
			Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen				** FIELD FILTERED
SAMPLE ID	DA	TE/TIME	Total	Diss(	Nitra				NOTES
TMDL-Est	6/7/18	0945	x	x	x				
TMDL-R1	$\downarrow$	0745	x	x	x			,	
TMDL-R2	6/6/18	1310	x	×	x				
TMDL-R3		1105	x	x	x				
TMDL-R4		0800	x	x	x				
-TMBL=CL-		4	X-	-x-	x		_		DRY
TMDL-SA	6/6/18	1020	X	x	x				
TMDL-FD	G 1	6800	x	x	x				(Note which site) $(R\Psi)$
Signature: Coll_H	ds.		Signa		Â	<u> </u>  人	NITESTACH		
		.HS	-	Name	V	111			~
Affiliation: Vewif			Affilia			NE		r	
Date/Time Received: Date/Time Relinquished: (	18/	16115			Recei Relind		6/ ed:	71	18 1415
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Affiliation: WECK	<u> </u>		Affilia		<u>, 1 (</u>	este	<u>r 1</u> Ne	- <u>,</u>	un U
Date/Time Received:					Recei	ved:	·	(e]7	118 18:30 1.1"
Date/Time Relinquished: 🎸	(7/18 19	30	-		Relina			~111	
Miscellaneous Notes (Hazardo	ous Materials, Quic	k turn-around time, etc.):	$\langle \cdot \rangle$	Disso	lved s	ample	es wei	re fiei	d filtered



FINAL REPORT

Work Orders:	8F07096	Report Date:	7/16/2018
		Received Date:	6/7/2018
Proiect:	TMDL Study June 2018 P6040555	Turnaround Time:	Normal
	-	Phones:	(805) 658-4375
		Fax:	(805) 654-3350
Attn:	Kelly Hahs	P.O. #:	WECKLABORATOFY1 8MA01
Client:	Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	

#### DoD-ELAP #L2457 • ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 6/07/18 with the Chain-of-Custody document. The samples were received in good condition, at 1.1 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee Operations Manager/Senior PM











FINAL REPORT

## Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study June 2018 P6040555

**Reported:** 07/16/2018 09:18

Project Manager: Kelly Hahs

## Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	D.Laak	8F07096-01	Water	06/07/18 09:45	
TMDL-R1	D.Laak	8F07096-02	Water	06/07/18 07:45	
TMDL-R2	D.Laak	8F07096-03	Water	06/06/18 13:10	
TMDL-R3	D.Laak	8F07096-04	Water	06/06/18 11:05	
TMDL-R4	D.Laak	8F07096-05	Water	06/06/18 08:00	
TMDL-SA	D.Laak	8F07096-06	Water	06/06/18 10:20	
TMDL-FD	D.Laak	8F07096-07	Water	06/06/18 08:00	



FINAL REPORT

## Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study June 2018 P6040555

**Reported:** 07/16/2018 09:18

Project Manager: Kelly Hahs

Sample Resul	ts
--------------	----

Sample: TMDL-Est						S	ampled: 06/07/18 9:4	45 by D.Laak
8F07096-01 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Paramet	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	/17/18 09:30		Analyst: ymt	
Dissolved Nitrogen		0.72		0.30	mg/l	1x1	06/19/18 14:05	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	/17/18 09:25		Analyst: YMT	
Nitrogen, Total		1.2		0.20	mg/l	1x1	06/19/18 14:05	
Method: EPA 351.2	Batch ID: W8F0946	Instr: AA06		Prepared: 06	/17/18 09:25		Analyst: YMT	
TKN		1.1	0.050	0.10	mg/l	1x1	06/19/18 14:05	
Method: EPA 351.2	Batch ID: W8F0947	Instr: AA06		Prepared: 06	/17/18 09:30		Analyst: ymt	
TKN, Soluble		0.62	0.050	0.10	mg/l	1x1	06/19/18 14:05	
Method: EPA 353.2	Batch ID: W8F0644	Instr: AA01		Prepared: 06	/12/18 08:23		Analyst: AJK	
NO2+NO3 as N		0.10	0.083	0.20	mg/l	1x1	06/12/18 16:01	J
Method: EPA 365.1	Batch ID: W8F1270	Instr: AA01		Prepared: 06	/21/18 15:18		Analyst: AJK	
Phosphorus, Dissolved		0.042	0.0014	0.010	mg/l	1x1	06/29/18 13:40	
Method: EPA 365.1	Batch ID: W8F1335	Instr: AA01		Prepared: 06	/22/18 15:36		Analyst: AJK	
Phosphorus as P, Total		0.13	0.0028	0.020	mg/l	2x1	06/27/18 14:41	M-06
					0			
Sample: TMDL-R1 8F07096-02 (Water)						S	ampled: 06/07/18 7:4	45 by D.Laak
		Result	MDL	MRL	Units	S Dil	ampled: 06/07/18 7:4 Analyzed	45 by D.Laak Qualifier
8F07096-02 (Water)	ers by APHA/EPA/ASTM Methods							-
8F07096-02 (Water) Analyte	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]		MDL		Units			-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC	-		MDL	MRL	Units		Analyzed	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD ***	-	Instr: [CALC]	MDL	MRL Prepared: 06	Units /17/18 09:30 mg/l	Dil	Analyzed Analyst: ymt	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	Batch ID: [CALC]	Instr: [CALC]	MDL	MRL Prepared: 06 0.30	Units /17/18 09:30 mg/l	Dil	Analyzed Analyst: ymt 06/19/18 14:05	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	Batch ID: [CALC]	Instr: [CALC] 	MDL	MRL Prepared: 06 0.30 Prepared: 06	Units /17/18 09:30 mg/l /17/18 09:25 mg/l	Dil 1x1	Analyzed Analyst: ymt 06/19/18 14:05 Analyst: YMT	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	Batch ID: [CALC] Batch ID: [CALC]	Instr: [CALC] 1.4 Instr: [CALC] 1.5	MDL	MRL Prepared: 06 0.30 Prepared: 06 0.20	Units /17/18 09:30 mg/l /17/18 09:25 mg/l	Dil 1x1	Analyzed           Analyst: ymt           06/19/18 14:05           Analyst: YMT           06/19/18 14:05	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC]	Instr: [CALC] 	MDL	MRL Prepared: 06 0.30 Prepared: 06 0.20 Prepared: 06	Units /17/18 09:30 mg/l /17/18 09:25 mg/l /17/18 09:25 mg/l	Dil 1x1 1x1	Analyzed           Analyst: ymt           06/19/18 14:05           Analyst: YMT           06/19/18 14:05           Analyst: YMT           06/19/18 14:05           Analyst: YMT	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8F0946	Instr: [CALC] 1.4 Instr: [CALC] 1.5 Instr: AA06 0.70	MDL	MRL Prepared: 06 0.30 Prepared: 06 0.20 Prepared: 06 0.10	Units /17/18 09:30 mg/l /17/18 09:25 mg/l /17/18 09:25 mg/l	Dil 1x1 1x1	Analyzed           Analyst: ymt           06/19/18 14:05           Analyst: YMT           06/19/18 14:05           Analyst: YMT           06/19/18 14:05	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8F0946	Instr: [CALC] 	<b>MDL</b>	MRL Prepared: 06 0.30 Prepared: 06 0.20 Prepared: 06 0.10 Prepared: 06	Units Units //17/18 09:30 mg/l //17/18 09:25 mg/l //17/18 09:25 mg/l //17/18 09:30 mg/l	Dil 1x1 1x1 1x1	Analyzed           Analyst: ymt           06/19/18 14:05	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8F0946 Batch ID: W8F0947	Instr: [CALC] 1.4 Instr: [CALC] 1.5 Instr: AA06 0.70 Instr: AA06 0.58	<b>MDL</b>	MRL Prepared: 06 0.30 Prepared: 06 0.20 Prepared: 06 0.10 Prepared: 06 0.10	Units Units //17/18 09:30 mg/l //17/18 09:25 mg/l //17/18 09:25 mg/l //17/18 09:30 mg/l	Dil 1x1 1x1 1x1	Analyzed           Analyst: ymt           06/19/18 14:05	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8F0946 Batch ID: W8F0947	Instr: [CALC] 1.4 Instr: [CALC] 1.5 Instr: AA06 0.70 Instr: AA06 0.58 Instr: AA01	<b>MDL</b> 0.050	MRL           Prepared: 06           0.30           Prepared: 06           0.20           Prepared: 06           0.10           Prepared: 06           0.10           Prepared: 06           0.10	Units /17/18 09:30 mg/l /17/18 09:25 mg/l /17/18 09:25 mg/l /17/18 09:30 mg/l /12/18 08:23 mg/l	Dil 1x1 1x1 1x1 1x1 1x1	Analyzed           Analyst: ymt           06/19/18 14:05           Analyst: AJK	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: LVarious Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 N02+NO3 as N	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8F0946 Batch ID: W8F0947 Batch ID: W8F0644	Instr: [CALC] 1.4 Instr: [CALC] 1.5 Instr: AA06 0.70 Instr: AA06 0.58 Instr: AA01 0.81	<b>MDL</b> 0.050	MRL Prepared: 06 0.30 Prepared: 06 0.20 Prepared: 06 0.10 Prepared: 06 0.10 Prepared: 06 0.20	Units /17/18 09:30 mg/l /17/18 09:25 mg/l /17/18 09:25 mg/l /17/18 09:30 mg/l /12/18 08:23 mg/l	Dil 1x1 1x1 1x1 1x1 1x1	Analyzed           Analyst: ymt           06/19/18 14:05           Analyst: YMT           06/19/18 14:05           Analyst: YMT           06/19/18 14:05           Analyst: ymt           06/19/18 14:05           Analyst: Ana	-
8F07096-02 (Water) Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N Method: EPA 365.1	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8F0946 Batch ID: W8F0947 Batch ID: W8F0644	Instr: [CALC] 1.4 Instr: [CALC] 1.5 Instr: AA06 0.70 Instr: AA06 0.58 Instr: AA01 0.81 Instr: AA01	MDL 0.050 0.050 0.083	MRL Prepared: 06 0.30 Prepared: 06 0.20 Prepared: 06 0.10 Prepared: 06 0.10 Prepared: 06 0.20 Prepared: 06	Units /17/18 09:30 mg/l /17/18 09:25 mg/l /17/18 09:25 mg/l /17/18 09:30 mg/l /12/18 08:23 mg/l /13/18 19:55 mg/l	Dil 1x1 1x1 1x1 1x1 1x1 1x1	Analyzed         Analyst: ymt         06/19/18 14:05         Analyst: AJK         06/12/18 16:04         Analyst: AJK	-

# Certificate of Analysis

FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study June 2018 P6040555

**Reported:** 07/16/2018 09:18

Project Manager: Kelly Hahs

(Continued)

Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Duranda	6/17/18 09:30		Analyst: ymt	
Analyte	Parameters by APHA/EPA/ASTM Methods	Result	MDL	MRL	Units	ווט	Analyzed	Qualifier
8F07096-04 (Wa		Decult	MDI	MDI	11-14-	Dil	Anglement	Qualifier
Sample: TMDL-R3						Sa	ampled: 06/06/18 11:0	95 by D.Laak
Phosphorus, Dissolved		0.27	0.0028	0.020	mg/l	1x2	06/29/18 13:49	
Method: EPA 365.1	Batch ID: W8F1270	Instr: AA01		Prepared: 0	6/21/18 15:18		Analyst: AJK	
Phosphorus as P, Total		0.36	0.0028	0.020	mg/l	2x1	06/20/18 16:35	
Method: EPA 365.1	Batch ID: W8F0793	Instr: AA01		Prepared: 0	6/13/18 19:55		Analyst: AJK	
NO2+NO3 as N		2.0	0.083	0.20	mg/l	1x1	06/12/18 16:05	
Method: EPA 353.2	Batch ID: W8F0644	Instr: AA01		Prepared: 0	6/12/18 08:23		Analyst: AJK	
TKN, Soluble		0.28	0.050	0.10	mg/l	1x1	06/19/18 14:05	
Method: EPA 351.2	Batch ID: W8F0947	Instr: AA06		Prepared: 0	6/17/18 09:30		Analyst: ymt	
TKN		0.75	0.050	0.10	mg/l	1x1	06/19/18 14:05	
Method: EPA 351.2	Batch ID: W8F0946	Instr: AA06		Prepared: 0	6/17/18 09:25		Analyst: YMT	
Nitrogen, Total		2.8		0.20	mg/l	1x1	06/19/18 14:05	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		•	6/17/18 09:25		Analyst: YMT	
Dissolved Nitrogen		2.3		0.30	mg/l	1x1	06/19/18 14:05	
METHOD ***					0, 11, 10 00.00		,	
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prenared: ()	6/17/18 09:30		Analyst: ymt	
•	Parameters by APHA/EPA/ASTM Methods						· ····	<b></b>
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
8F07096-03 (Wa	ter)							
Sample: TMDL-R2						Sa	ampled: 06/06/18 13:1	0 by D.Laak

METHOD ***	Batch ID. [CALC]		Fiepaleu. 00/17/18 09.30		
Dissolved Nitrogen		0.49	0.30 mg/l	1x1 06/19/18 14:05	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]	Prepared: 06/17/18 09:2	5 Analyst: YMT	
Nitrogen, Total		0.71	0.20 mg/l	1x1 06/19/18 14:05	
Method: EPA 351.2	Batch ID: W8F0946	Instr: AA06	Prepared: 06/17/18 09:2	5 Analyst: YMT	
ТКМ		<b>0.39</b> 0.050	0.10 mg/l	1x1 06/19/18 14:05	
Method: EPA 351.2	Batch ID: W8F0947	Instr: AA06	Prepared: 06/17/18 09:30	) Analyst: ymt	
TKN, Soluble		<b>0.16</b> 0.050	0.10 mg/l	1x1 06/19/18 14:05	
Method: EPA 353.2	Batch ID: W8F0644	Instr: AA01	Prepared: 06/12/18 08:23	B Analyst: AJK	
NO2+NO3 as N		<b>0.08</b> 3 0.083	0.20 mg/l	1x1 06/12/18 16:06	
Method: EPA 365.1	Batch ID: W8F0793	Instr: AA01	Prepared: 06/13/18 19:55	<b>Analyst:</b> AJK	
Phosphorus as P, Total		<b>0.069</b> 0.0028	0.020 mg/l	2x1 06/20/18 16:37	
Method: EPA 365.1	Batch ID: W8F1270	Instr: AA01	Prepared: 06/21/18 15:18	B Analyst: AJK	
Phosphorus, Dissolved		<b>0.031</b> 0.0014	0.010 mg/l	1x1 06/29/18 13:45	

# Certificate of Analysis

FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study June 2018 P6040555

**Reported:** 07/16/2018 09:18

Project Manager: Kelly Hahs

(Continued)

							(-	,
Sample: TMDL-R4						S	ampled: 06/06/18 8:0	0 by D.Laak
8F07096-05 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parame	eters by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	5/17/18 09:30		Analyst: ymt	
Dissolved Nitrogen		1.6		0.30	mg/l	1x1	06/19/18 14:05	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	5/17/18 09:25		Analyst: YMT	
Nitrogen, Total		1.6		0.20	mg/l	1x1	06/19/18 14:05	
Method: EPA 351.2	Batch ID: W8F0946	Instr: AA06		Prepared: 06	5/17/18 09:25		Analyst: YMT	
TKN		ND	0.050	0.10	mg/l	1x1	06/19/18 14:05	
Method: EPA 351.2	Batch ID: W8F0947	Instr: AA06		Prepared: 06	5/17/18 09:30		Analyst: ymt	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	06/19/18 14:05	
Method: EPA 353.2	Batch ID: W8F0644	Instr: AA01		Prepared: 06	5/12/18 08:23		Analyst: AJK	
NO2+NO3 as N		1.6	0.083	0.20	mg/l	1x1	06/12/18 16:07	
Method: EPA 365.1	Batch ID: W8F0705	Instr: AA01		Prepared: 06	5/12/18 16:50		Analyst: AJK	
Phosphorus, Dissolved		0.021	0.0014	0.010	mg/l	1x1	06/27/18 11:57	
Method: EPA 365.1	Batch ID: W8F0793	Instr: AA01		Droparada 04	2/12/10 10-EE		Analyst All	
Phosphorus as P, Total	Batch ID: W8F0793	0.022	0.0014	0.010	5/13/18 19:55 mg/l	1x1	Analyst: AJK 06/20/18 16:22	
						6.		
Sample: TMDL-SA 8F07096-06 (Water)						50	ampled: 06/06/18 10:2	D DY D.Laak
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parame	eters by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 06	5/17/18 09:30		Analyst: ymt	
METHOD *** Dissolved Nitrogen		1.6		0.30	mg/l	1x1	06/19/18 14:05	
		1.0		0.50	mg/i	141	00/19/10 14:03	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		-	5/17/18 09:25		Analyst: YMT	
Nitrogen, Total		1.6		0.20	mg/l	1x1	06/19/18 14:05	
Method: EPA 351.2	Batch ID: W8F0946	Instr: AA06		Prepared: 06	5/17/18 09:25		Analyst: YMT	
TKN		• • • • • • • • ND	0.050	0.10	mg/l	1x1	06/19/18 14:05	
Method: EPA 351.2	Batch ID: W8F0947	Instr: AA06		Prepared: 06	5/17/18 09:30		Analyst: ymt	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	06/19/18 14:05	
Method: EPA 353.2	Batch ID: W8F0644	Instr: AA01		Prepared: 06	5/12/18 08:23		Analyst: AJK	
NO2+NO3 as N		1.6	0.083	0.20	mg/l	1x1	06/12/18 16:08	
Method: EPA 365.1	Batch ID: W8F0793	Instr: AA01		Prepared: 04	5/13/18 19:55		Analyst: AJK	
Phosphorus as P, Total		0.032	0.0014	0.010	mg/l	1x1	06/20/18 16:38	
Mathed, EDA 26E 1		Inch. 401		Duese and Of	5/21/18 15:18		Analysta All	
Method: EPA 365.1	Batch ID: W8F1270	Instr: AA01			1/21/18 15'18		Analyst: AJK	
Phosphorus, Dissolved		0.028	0.0028	0.020	mg/l	1x2	06/29/18 13:53	

# Certificate of Analysis

FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study June 2018 P6040555

**Reported:** 07/16/2018 09:18

Project Manager: Kelly Hahs

(Continued)

Sample:	TMDL-FD						S	ampled: 06/06/18 8:0	0 by D.Laak
	8F07096-07 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional	Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: *** METHOD ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	06/17/18 09:30		Analyst: ymt	
Dissolved	Nitrogen		1.5		0.30	mg/l	1x1	06/19/18 14:05	
Method: _Va	irious	Batch ID: [CALC]	Instr: [CALC]		Prepared: (	06/17/18 09:25		Analyst: YMT	
Nitrogen,	Total		1.6		0.20	mg/l	1x1	06/19/18 14:05	
Method: EPA	A 351.2	Batch ID: W8F0946	Instr: AA06		Prepared: (	06/17/18 09:25		Analyst: YMT	
TKN			0.17	0.050	0.10	mg/l	1x1	06/19/18 14:05	
Method: EPA	A 351.2	Batch ID: W8F0947	Instr: AA06		Prepared: (	06/17/18 09:30		Analyst: ymt	
TKN, Solu	ble		ND	0.050	0.10	mg/l	1x1	06/19/18 14:05	
Method: EPA	A 353.2	Batch ID: W8F0644	Instr: AA01		Prepared: (	06/12/18 08:23		Analyst: AJK	
NO2+NO3	as N		1.5	0.083	0.20	mg/l	1x1	06/12/18 16:10	
Method: EPA	A 365.1	Batch ID: W8F0705	Instr: AA01		Prepared: 0	6/12/18 16:50		Analyst: AJK	
Phosphor	us, Dissolved		0.022	0.0014	0.010	mg/l	1x1	06/27/18 12:13	
Method: EPA	A 365.1	Batch ID: W8F0793	Instr: AA01		Prepared: 0	6/13/18 19:55		Analyst: AJK	
Phosphor	us as P, Total		0.025	0.0014	0.010	mg/l	1x1	06/20/18 16:43	



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study June 2018 P6040555

**Reported:** 07/16/2018 09:18

Project Manager: Kelly Hahs

Conventional Chemistry/Physical Parameters by APHA/E	PA/AS1	M Method	S								
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
atch: W8F0644 - EPA 353.2											
Blank (W8F0644-BLK1)					Prepared & A	nalyzed: 06/1	2/18				
NO2+NO3 as N	- ND	0.083	0.20	mg/l							
LCS (W8F0644-BS1)					Prepared & A	nalyzed: 06/1	2/18				
NO2+NO3 as N	1.00	0.083	0.20	mg/l	1.00		100	90-110			
Matrix Spike (W8F0644-MS1)	Sourc	ce: 8F06094	-01		Prepared & A	nalyzed: 06/1	2/18				
NO2+NO3 as N	2.04	0.083	0.20	mg/l	2.00	ND	102	90-110			
Matrix Spike (W8F0644-MS2)	Sourc	ce: 8F06094	-05		Prepared & A	nalyzed: 06/1	2/18				
NO2+NO3 as N	1.88	0.083	0.20	mg/l	2.00	ND	94	90-110			
Matrix Spike Dup (W8F0644-MSD1)	Sourc	ce: 8F06094	-01		Prepared & A	nalyzed: 06/1	2/18				
NO2+NO3 as N	2.07	0.083	0.20	mg/l	2.00	ND	104	90-110	1	20	
Matrix Spike Dup (W8F0644-MSD2)	Sourc	ce: 8F06094	-05		Prepared & A	nalyzed: 06/1	2/18				
NO2+NO3 as N	1.85	0.083	0.20	mg/l	2.00	ND	92	90-110	2	20	
atch: W8F0705 - EPA 365.1											
Blank (W8F0705-BLK1)				Dro	epared: 06/12/1	8 Analyzad	06/27/19				
Phosphorus, Dissolved	- ND	0.0014	0.010	mg/l	.pureu. 00/ 12/ 1	o Analyzeu.	00,21,10				
LCS (W8F0705-BS1)				Due	marad. 06/12/1	Q Analyzadı	06/27/10				
	.0512	0.0014	0.010	mg/l	epared: 06/12/1 0.0500	o Analyzeu.	102	90-110			
	-			-	1.00/10/10						
Matrix Spike (W8F0705-MS1) Phosphorus, Dissolved 0		ce: 8F07096 0.0014	0.010	mg/l	epared: 06/12/1 0.0500	0.0208	107	90-110			
	-			-							
Matrix Spike Dup (W8F0705-MSD1) Phosphorus, Dissolved 0		ce: 8F07096 0.0014	- <b>05</b> 0.010	mg/l	epared: 06/12/1 0.0500	8 Analyzed: 0.0208	105	90-110	1	20	
				3							
atch: W8F0793 - EPA 365.1											
Blank (W8F0793-BLK1)	- ND	0.0014	0.010		epared: 06/13/1	8 Analyzed:	06/20/18	8			
Phosphorus as P, Total		0.0014	0.010	mg/l							
LCS (W8F0793-BS1)	0505	0.0044	0.040		epared: 06/13/1	8 Analyzed:					
Phosphorus as P, Total 0	.0505	0.0014	0.010	mg/l	0.0500		101	90-110			
Matrix Spike (W8F0793-MS1)		ce: 8F07096			epared: 06/13/1	-					
Phosphorus as P, Total 0	.0815	0.0014	0.010	mg/l	0.0500	0.0219	119	90-110			MS-03
Matrix Spike Dup (W8F0793-MSD1)		ce: 8F07096	-05	Pre	epared: 06/13/1	8 Analyzed:	06/20/18	5			
Phosphorus as P, Total 0	.0783	0.0014	0.010	mg/l	0.0500	0.0219	113	90-110	4	20	MS-03
atch: W8F0946 - EPA 351.2											
Blank (W8F0946-BLK1)				Pre	epared: 06/17/1	8 Analyzed:	06/19/18	6			
TKN	- ND	0.050	0.10	mg/l		-					
LCS (W8F0946-BS1)				Pre	epared: 06/17/1	8 Analyzed:	06/19/18	3			
TKN	1.01	0.050	0.10	mg/l	1.00		101	90-110			
Matrix Spike (W8F0946-MS1)	Sourc	ce: 8F07096	-02	Pre	epared: 06/17/1	8 Analvzed:	06/19/18	5			
TKN	1.67	0.050	0.10	mg/l	1.00	0.696	97	90-110			



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009			ect Number: ct Manager:		y June 2018 P	6040555				07/16	<b>Reported:</b> 5/2018 09:18
Quality Control Results	5									(C	ontinued)
Conventional Chemistry/Physical Parameters by A	PHA/EPA/AST	M Metho	ds (Continue	d)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W8F0946 - EPA 351.2 (Continued)											
Matrix Spike Dup (W8F0946-MSD1)		e: 8F0709		-	oared: 06/17/1	•					
ΤΚΝ	1.64	0.050	0.10	mg/l	1.00	0.696	94	90-110	2	10	
Batch: W8F0947 - EPA 351.2											
Blank (W8F0947-BLK1)				Prep	oared: 06/17/1	8 Analyzed:	06/19/1	В			
TKN, Soluble		0.050	0.10	mg/l		-					
LCS (W8F0947-BS1)				Prer	oared: 06/17/1	8 Analyzed:	06/19/1	B			
TKN, Soluble	0.996	0.050	0.10	mg/l	1.00	o miningrea.	100	90-110			
	-			_				-			
Matrix Spike (W8F0947-MS1) TKN, Soluble	Source 1.56	e: 8F0709 0.050	6-02 0.10	Prep mg/l	Dared: 06/17/1 1.00	8 Analyzed: 0.581	98	<b>8</b> 90-110			
	1.00	0.000	0.10	iiig/i	1.00	0.001	00	00 110			
Matrix Spike Dup (W8F0947-MSD1)		e: 8F0709		-	oared: 06/17/1	•					
TKN, Soluble	1.56	0.050	0.10	mg/l	1.00	0.581	98	90-110	0.003	10	
Batch: W8F1270 - EPA 365.1											
Blank (W8F1270-BLK1)				Prep	oared: 06/21/1	8 Analyzed:	06/29/1	В			
Phosphorus, Dissolved		0.0014	0.010	mg/l		-					
LCS (W8F1270-BS1)				Pret	oared: 06/21/1	8 Analyzed:	06/29/1	в			
Phosphorus, Dissolved	0.0509	0.0014	0.010	mg/l	0.0500	<b>,</b>	102	90-110			
Matrix Sailes (MOS1270 MS1)	Court	A. 950700	c 0c	Виол	arad. 06/21/1	9 Analyzad	06/20/1	0			
Matrix Spike (W8F1270-MS1) Phosphorus, Dissolved	0.0760	e: 8F0709 0.0028	0.020	mg/l	oared: 06/21/1 0.0500	0.0282	96	90-110			
				Ū							
Matrix Spike Dup (W8F1270-MSD1) Phosphorus, Dissolved		e: 8F0709 0.0028	6-06 0.020	-	oared: 06/21/1 0.0500	8 Analyzed: 0.0282	104 104	<b>B</b> 90-110	5	20	
	0.0800	0.0028	0.020	mg/l	0.0500	0.0202	104	90-110	5	20	
Batch: W8F1335 - EPA 365.1											
Blank (W8F1335-BLK1)				Prep	oared: 06/22/1	8 Analyzed:	06/27/1	B			
Phosphorus as P, Total		0.0014	0.010	mg/l							
LCS (W8F1335-BS1)				Prer	oared: 06/22/1	8 Analyzed	06/27/1	8			
Phosphorus as P, Total	0.0517	0.0014	0.010	mg/l	0.0500	- rinaryzeu.	103	90-110			
	-	054 485		-	1 00 000 00		00 107 10				
Matrix Spike (W8F1335-MS1) Phosphorus as P, Total	Source 0.0621	ce: 8F1403 0.0014	<b>3-07</b> 0.010	mg/l	oared: 06/22/1 0.0500	8 Analyzed: 0.0113	102	<b>B</b> 90-110			
	0.0021	0.0011	0.010		0.0000	0.0110	.02	00 110			
Matrix Spike Dup (W8F1335-MSD1)		e: 8F1403		-	oared: 06/22/1	-			0	00	
Phosphorus as P, Total	0.0632	0.0014	0.010	mg/l	0.0500	0.0113	104	90-110	2	20	



FINAL REPORT

Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study June 2018 P6040555

**Reported:** 07/16/2018 09:18

Project Manager: Kelly Hahs

## Notes and Definitions

ltem	Definition
J	Estimated conc. detected <mrl and="">MDL.</mrl>
M-06	Due to the high concentration of analyte inherent in the sample, sample was diluted prior to preparation. The MDL and MRL were raised due to this dilution.
MS-03	Multiple analyses indicate the percent recovery is out of acceptance limits due to a possible matrix effect.
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.
	pining comple/(a) will be dispessed of and month from the final report data uplace other arrangements are made in advance

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified. All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.



September 10<sup>th</sup>, 2018

Ventura Country Watershed Protection District Kelly Hahs 800 S Victoria Ave Ventura, CA 93009

Dear Ms. Hahs:

Aquatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed chlorophyll-a data report for the Ventura River Algae TMDL. Chlorophyll- a analyses are conducted under guidelines prescribed in *Standard Methods for the Examination of Water and Wastewater* (APHA, 22<sup>nd</sup> Edition), Section SM 10200 H.

Please contact me with any questions or issues you may have regarding this report.

Sincerely,

Karin Wisenbaker Senior Biologist (805) 643-5621 ex.17

Client: Ventura Country Watershed Protection District Project: Ventura River Algae TMDL



Chlorophyll a results from June 6th-7th, 2018

Station	Field Replicate	Number of Transects Collected	Chlorophyll a	Units
TMDL-R1	1	11	39	ug/cm2
TMDL-R2	1	11	33	ug/cm2
TMDL-R3	1	11	52	ug/cm2
TMDL-R4	1	11	15	ug/cm2
TMDL-R4	2	11	12	ug/cm2
TMDL-CL	1	0	DRY	ug/cm2
TMDL-SA	1	0	DRY	ug/cm2
TMDL-Est	1	NA	40	ug/L

CI stody

From: Aquatic Bioassay and Consulting Lal 29 N. Olive St. Ventura, CA 9300		Phone: Fax: Project ID:	(805) 64 (805) 64 VCWPL Algae T	13-2930 )		То:	Company: Address: Phone:	Aquatic Bioassa and Consulting I 29 N. Olive St. Ventura, CA 93	Labs.		
and the second	and statements and statements of the statements	separation and a						ANAL	YSIS		
Sample I.D. No.	Sample Date	Time	Matrix	Com/D&dC Volume/ No.	Reps	ũ					
				description of the lower		Chi-a					-
TMDL-R4	6.6.18	0800	FW	1-pertri	1	X					
TMOL-PY Dup TMOL-P3 TMDL-R2	6.6.18	0800	FW	1 Patri	2	X					
THOL-P3	6.6.18	1105	FW	Fetri		X					
TMDL-R2	6.6.18	1310	FW	1-petri		X					
					-						
										an a	
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Special Instructions:											
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From: Aquatic Bioassay and Consulting La 29 N. Olive St. Ventura, CA 9300		Phone: Fax: Project ID:	(805) 64 (805) 64 VCWPE Algae 1	43-2930 )		To:	Company Address: Phone:	a 2	nd Cor 9 N. O	Bioassay nsulting L live St. , CA 930	.abs. 001				
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CHAIN-OF-CUSTO	DY RECORD								1 OF	1	
CLIENT: Ventura Co	ounty Watershed Pr	otection District (M	/laste	r Agr	reem	ent V	VEC	KLAE	BORATOFY18M	A01, Project P6	- 040555)
SAMPLING EVENT:		2018								······································	_ `
SAMPLING DATE:	<u>719/12</u>	8 + 7/10/	18								_
SAMPLERS:	L.MEEKER										_
GRAB SAMPLES			-				<b>-</b>				
SAMPLE ID	DATE	TIME	Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen				** FIELD F	'IL I ERED	
									NOTES		
TMDL-Est	7/10/10/18	1010	<b>X</b>	X	X						
TMDL-R1	7/10/18	0745	X	X	X						
TMDL-R2	7/9/18	1300	x	x	x						
TMDL-R3		1100	x	x	x						
TMDL-R4		0840	x	X	х				·····		
TMDL-CL	DR	1	x	х	x						
TMDL-SA	7/9/18	1000	x	X	х		_			· · · · · · · · · · · · · · · · · · ·	
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	ELLY HAHS			Name	/	sku	E	<u>יי / א</u> האא	ARKOVICH		
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Affiliation: WECK			Affilia	tion:		1			ups		· · · · · ·
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Date/Time Relinquished: +	11/18 1810		Date/	Time I	Reling	uisheo	d:			·	

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

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Dissolved samples were field filtered

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September 10<sup>th</sup>, 2018

Ventura Country Watershed Protection District Kelly Hahs 800 S Victoria Ave Ventura, CA 93009

Dear Ms. Hahs:

Aquatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed chlorophyll-a data report for the Ventura River Algae TMDL. Chlorophyll- a analyses are conducted under guidelines prescribed in *Standard Methods for the Examination of Water and Wastewater* (APHA, 22<sup>nd</sup> Edition), Section SM 10200 H.

Please contact me with any questions or issues you may have regarding this report.

Sincerely,

Karin Wisenbaker Senior Biologist (805) 643-5621 ex.17

Client: Ventura Country Watershed Protection District Project: Ventura River Algae TMDL



Station	Field Replicate	Number of Transects Collected	Chlorophyll a	Units
TMDL-R1	1	11	18	ug/cm2
TMDL-R2	1	11	20	ug/cm2
TMDL-R3	1	11	16	ug/cm2
TMDL-R4	1	9	13	ug/cm2
TMDL-CL	1	0	DRY	ug/cm2
TMDL-SA	1	0	DRY	ug/cm2
TMDL-Est	1	NA	34	ug/L

Chlorophyll a results from July 9th-10th, 2018

## CHAIN OF CUSTODY RECORD

Client:					Project Name/Numbe	er:				4 - 0	Analy	sis	6
Address					Project Mgr.								
					P.O. #								
Phone Nu	ımber:		_		Sampled By signature	a) T	1 Lp						
Date	Time	Comp.	Grab	Matrix	Sample ID	Volume/ Number	51						Comments
7.9.18	0840		П		R-4		$\boldsymbol{\chi}$						
7.9.14	1100	Γ	$\square$		R-3		X						
7.9.18 7.9.18	1300				R-2		X						
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Received	By: (signalu	(9)	1	2	7.9.16	Date: Time:	Rece	ived By	(signature)				Date: Time:
				the followir	ng results:								
Temp (°C)	·	_	-	NH₃ (mg/L)	) CI (mg/L)	:	+						

CI i stody

rom: Aquatic Bioassa and Consulting I 29 N. Olive St. Ventura, CA 930	.abs.	Phone: Fax: Project ID:	(805) 64		e en lisère due	To:	Company: Address: Phone:	Aquatic Bioassay and Consulting Labs 29 N. Olive St. Ventura, CA 93001	a magine sa a servera an		
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Sample I.D. No.	Sample Date	Time	Matrix	Compositio Volume/ No.	Reps						VCE
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FINAL REPORT

Work Orders:	8G11125	Report Date:	8/13/2018
Work Orders.		Received Date:	7/11/2018
	TMDL Study July 2018 P6040555	Turnaround Time:	Normal
Project:		Phones:	(805) 658-4375
		Fax:	(805) 654-3350
Attn:	Kelly Hahs	P.O. #:	WECKLABORATOFY1
Client:	Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	8MA01

## DoD-ELAP #L2457 • ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 7/11/18 with the Chain-of-Custody document. The samples were received in good condition, at 1.3 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee Operations Manager/Senior PM











FINAL REPORT

## Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study July 2018 P6040555

**Reported:** 08/13/2018 16:37

Project Manager: Kelly Hahs

## Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	L.Meeker	8G11125-01	Water	07/10/18 10:10	
TMDL-R1	L.Meeker	8G11125-02	Water	07/10/18 07:45	
TMDL-R2	L.Meeker	8G11125-03	Water	07/09/18 13:00	
TMDL-R3	L.Meeker	8G11125-04	Water	07/09/18 11:00	
TMDL-R4	L.Meeker	8G11125-05	Water	07/09/18 08:40	
TMDL-SA	L.Meeker	8G11125-06	Water	07/09/18 10:00	



FINAL REPORT

## Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study July 2018 P6040555

**Reported:** 08/13/2018 16:37

Project Manager: Kelly Hahs

Sample Results
oumpro ricoounco

Sample: TMDL-Est						Sam	pled: 07/10/18 10:10	by L.Meeke
8G11125-01 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 07/	/17/18 17:32		Analyst: ymt	
METHOD ***								
Dissolved Nitrogen		0.61		0.30	mg/l	1x1	07/23/18 18:57	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 07/	/17/18 17:33		Analyst: ymt	
Nitrogen, Total		0.92		0.20	mg/l	1x1	07/23/18 18:57	
Method: EPA 351.2	Batch ID: W8G0963	Instr: AA06		Prepared: 07/	/17/18 17:33		Analyst: ymt	
тки		0.92	0.050	0.10	mg/l	1x1	07/23/18 18:57	
Method: EPA 351.2	Batch ID: W8G0964	Instr: AA06		Prepared: 07/	/17/18 17:32		Analyst: ymt	
TKN, Soluble		0.61	0.050	0.10	mg/l	1x1	07/23/18 18:57	
Method: EPA 353.2	Batch ID: W8G0688	Instr: AA01		Prepared: 07/	/12/18 12:19		Analyst: AJK	
NO2+NO3 as N		ND	0.083	0.20	mg/l	1x1	07/13/18 12:33	
<b>Method:</b> EPA 365.1	Batch ID: W8G0683	Instr: AA01		Prepared: 07/	/12/10 11.24		Analyst: Station22	
Phosphorus as P, Total		0.12	0.0014	0.010	mg/l	1x1	07/24/18 17:21	
					5			
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1	Batch ID: W8G0777	Instr: AA01	0.0014	<b>Prepared:</b> 07/ 0.010	/13/18 14:01 mg/l	1x1	Analyst: Station22 07/24/18 15:50 npled: 07/10/18 7:45	by L.Meek
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water)	Batch ID: W8G0777	0.091		0.010	mg/l	1x1 Sam	07/24/18 15:50	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte		0.091 Result	0.0014 MDL	-		1x1	07/24/18 15:50	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte physical Parameters	s by APHA/EPA/ASTM Methods	Result	MDL	0.010 MRL	mg/l Units	1x1 Sam	07/24/18 15:50 npled: 07/10/18 7:45 Analyzed	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte proventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC		0.091 Result	MDL	0.010	mg/l Units	1x1 Sam	07/24/18 15:50	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC	s by APHA/EPA/ASTM Methods	Result	MDL	0.010 MRL	mg/l Units	1x1 Sam	07/24/18 15:50 npled: 07/10/18 7:45 Analyzed	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	s by APHA/EPA/ASTM Methods	Result	MDL	0.010 MRL Prepared: 07/	mg/l Units /17/18 17:32 mg/l	1x1 Sam Dil	07/24/18 15:50 npled: 07/10/18 7:45 Analyzed Analyst: ymt	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	0.091 Result Instr: [CALC] 2.2	MDL	0.010 MRL Prepared: 07, 0.30	mg/l Units /17/18 17:32 mg/l	1x1 Sam Dil	07/24/18 15:50 apled: 07/10/18 7:45 Analyzed Analyst: ymt 07/23/18 18:57	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]	MDL	0.010 MRL Prepared: 07/ 0.30 Prepared: 07/	mg/l Units /17/18 17:32 mg/l /17/18 17:33 mg/l	1x1 Sam Dil	07/24/18 15:50 apled: 07/10/18 7:45 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt	,
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Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963	0.091           Result           Instr:         [CALC]           1         2.2           Instr:         [CALC]           2.1         1           Instr:         AA06           0.64         0.64	MDL	0.010 MRL Prepared: 07/ 0.30 Prepared: 07/ 0.20 Prepared: 07/ 0.10	mg/l Units /17/18 17:32 mg/l /17/18 17:33 mg/l /17/18 17:33 mg/l	1x1 Sarr Dil 1x1 1x1	07/24/18 15:50 apled: 07/10/18 7:45 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt	,
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Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte proventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964		<b>MDL</b>	0.010 MRL Prepared: 07/ 0.30 Prepared: 07/ 0.20 Prepared: 07/ 0.10 Prepared: 07/ 0.10	mg/l Units /17/18 17:32 mg/l /17/18 17:33 mg/l /17/18 17:33 mg/l /17/18 17:32 mg/l	1x1 Sarr Dil 1x1 1x1 1x1	07/24/18 15:50 appled: 07/10/18 7:45 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964 Batch ID: W8G0688		<b>MDL</b> 0.050	0.010 MRL Prepared: 07/ 0.30 Prepared: 07/ 0.20 Prepared: 07/ 0.10 Prepared: 07/ 0.10 Prepared: 07/ 0.10	mg/l Units /17/18 17:32 mg/l /17/18 17:33 mg/l /17/18 17:33 mg/l /17/18 17:32 mg/l /12/18 12:19 mg/l	1x1 Sarr Dil 1x1 1x1 1x1 1x1 1x1 1x1	07/24/18 15:50 apled: 07/10/18 7:45 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: Ank 07/23/18 18:57	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte proventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964		<b>MDL</b> 0.050	0.010 MRL Prepared: 07/ 0.30 Prepared: 07/ 0.20 Prepared: 07/ 0.10 Prepared: 07/ 0.10 Prepared: 07/ 0.10 Prepared: 07/ 0.10	mg/l Units /17/18 17:32 mg/l /17/18 17:33 mg/l /17/18 17:33 mg/l /17/18 17:32 mg/l /12/18 12:19 mg/l	1x1 Sarr Dil 1x1 1x1 1x1 1x1 1x1 1x1	07/24/18 15:50 appled: 07/10/18 7:45 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: AJK	,
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8G11125-02 (Water) Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N Method: EPA 365.1	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964 Batch ID: W8G0688		MDL 0.050 0.050 0.083	0.010 MRL Prepared: 07/ 0.30 Prepared: 07/ 0.20 Prepared: 07/ 0.10 Prepared: 07/ 0.10 Prepared: 07/ 0.20 Prepared: 07/ 0.20 Prepared: 07/ 0.10	mg/l Units /17/18 17:32 mg/l /17/18 17:33 mg/l /17/18 17:33 mg/l /17/18 17:32 mg/l /12/18 12:19 mg/l /12/18 11:24 mg/l	1x1 Sarr Dil 1x1 1x1 1x1 1x1 1x1 1x1	07/24/18 15:50 apled: 07/10/18 7:45 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt	by L.Meek Qualifi

# Certificate of Analysis

FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study July 2018 P6040555

## **Reported:** 08/13/2018 16:37

Project Manager: Kelly Hahs

(Continued)

Sample Results								
Sample: TMDL-R2 8G11125-03 (Water)						Sam	pled: 07/09/18 13:00	by L.Meek
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
onventional Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	7/17/18 17:32		Analyst: ymt	
METHOD ***				0.00		4.4	07/00/40 40 57	
Dissolved Nitrogen		3.8		0.30	mg/l	1x1	07/23/18 18:57	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		•	7/17/18 17:33		Analyst: ymt	
Nitrogen, Total		4		0.20	mg/l	1x1	07/23/18 18:57	
Method: EPA 351.2	Batch ID: W8G0963	Instr: AA06		Prepared: 0	7/17/18 17:33		Analyst: ymt	
TKN		0.72	0.050	0.10	mg/l	1x1	07/23/18 18:57	
Method: EPA 351.2	Batch ID: W8G0964	Instr: AA06		Prepared: 0	7/17/18 17:32		Analyst: ymt	
TKN, Soluble		0.48	0.050	0.10	mg/l	1x1	07/23/18 18:57	
Method: EPA 353.2	Batch ID: W8G0688	Instr: AA01		Prepared: 0	7/12/18 12:19		Analyst: AJK	
NO2+NO3 as N		3.3	0.083	0.20	mg/l	1x1	07/13/18 12:35	
Method: EPA 365.1	Batch ID: W8G0683	Instr: AA01		Prepared: 0	7/12/18 11:24		Analyst: Station22	
Phosphorus as P, Total		0.52	0.0070	0.050	mg/l	1x5	07/24/18 17:24	
Method: EPA 365.1	Batch ID: W8G0777	Instr: AA01		Prepared: 0	7/13/18 14:01	1	Analyst: Station22	
Method: EPA 365.1 Phosphorus, Dissolved	Batch ID: W8G0777	Instr: AA01	0.0028	<b>Prepared:</b> 0 0.020	7/13/18 14:01 mg/l	1x2	Analyst: Station22 07/24/18 15:53	
Phosphorus, Dissolved	Batch ID: W8G0777		0.0028	•		1x2	•	by L.Meek
Phosphorus, Dissolved Sample: TMDL-R3	Batch ID: W8G0777		0.0028 MDL	•		1x2	07/24/18 15:53	
Phosphorus, Dissolved Sample: TMDL-R3 8G11125-04 (Water) Analyte		0.26		0.020	mg/l	1x2 Sam	07/24/18 15:53 pled: 07/09/18 11:00	
Phosphorus, Dissolved Sample: TMDL-R3 8G11125-04 (Water) Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC		0.26	MDL	0.020 MRL	mg/l	1x2 Sam	07/24/18 15:53 pled: 07/09/18 11:00	
Phosphorus, Dissolved Sample: TMDL-R3 8G11125-04 (Water) Analyte conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC	by APHA/EPA/ASTM Methods	Result	MDL	0.020 MRL	mg/l Units	1x2 Sam	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed	
Phosphorus, Dissolved         Sample:       TMDL-R3         8G11125-04 (Water)         Analyte         conventional Chemistry/Physical Parameters         Method:       *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen	by APHA/EPA/ASTM Methods	Result	MDL	0.020 MRL Prepared: 0 0.30	mg/l Units 7/17/18 17:32	1x2 Sam Dil	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed Analyst: ymt	
Phosphorus, Dissolved         Sample:       TMDL-R3         8G11125-04 (Water)         Analyte         conventional Chemistry/Physical Parameters         Method:       *** DEFAULT SPECIFIC         METHOD ***       Dissolved Nitrogen	: by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result	MDL	0.020 MRL Prepared: 0 0.30	mg/l Units 7/17/18 17:32 mg/l	1x2 Sam Dil	07/24/18 15:53 pled: 07/09/18 11:00   Analyzed Analyst: ymt 07/23/18 18:57	by L.Meek Qualif
Phosphorus, Dissolved Sample: TMDL-R3 BG11125-04 (Water) Analyte Conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	: by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC] Instr: [CALC]	MDL	0.020 MRL Prepared: 0 0.30 Prepared: 0 0.20	mg/l Units 7/17/18 17:32 mg/l 7/17/18 17:33	1x2 Sam Dil	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt	
Phosphorus, Dissolved Sample: TMDL-R3 BG11125-04 (Water) Analyte Conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result           Instr:         [CALC]           ND         Instr:         [CALC]           Instr:         [CALC]	MDL	0.020 MRL Prepared: 0 0.30 Prepared: 0 0.20	mg/l Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l	1x2 Sam Dil	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57	
Phosphorus, Dissolved Sample: TMDL-R3 8G11125-04 (Water) Analyte Onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result           Instr:         [CALC]           ND         Instr:         [CALC]           Instr:         [CALC]           Instr:         [CALC]	MDL	0.020 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.20	mg/l Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33	1x2 Sam Dil 1x1 1x1	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57	
Phosphorus, Dissolved Sample: TMDL-R3 8G11125-04 (Water) Analyte Onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963	Result           Instr:         [CALC]           ND         Instr:           Instr:         [CALC]	MDL	0.020 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.20	mg/l Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l	1x2 Sam Dil 1x1 1x1	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt	
Phosphorus, Dissolved Sample: TMDL-R3 8G11125-04 (Water) Analyte Onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964	Result           Instr:           [CALC]           Instr:           Instr:           [CALC]           Instr:           [CALC]           Instr:           [CALC]           Instr:           [CALC]           Instr:           [CALC]           Instr:           [CALC]           Instr:           [A06]           Instr:           [A06]	<b>MDL</b>	0.020 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10 Prepared: 0 0.10	mg/l Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l 7/17/18 17:32 mg/l	1x2 Sam Dil 1x1 1x1 1x1	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57	
Phosphorus, Dissolved Sample: TMDL-R3 8G11125-04 (Water) Analyte Onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963	Result           Instr:         [CALC]           Instr:         [A06]	<b>MDL</b>	0.020 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10 Prepared: 0 0.10	mg/l Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l 7/17/18 17:32	1x2 Sam Dil 1x1 1x1 1x1	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt	
Phosphorus, Dissolved Sample: TMDL-R3 BG11125-04 (Water) Analyte onventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964 Batch ID: W8G0688	Result           Instr:         [CALC]           Instr:         [A06]           0.13         Instr:           Instr:         [A06]           0.11         Instr:           Instr:         [A01]           Instr:         [A01]	MDL 0.050	0.020 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10 Prepared: 0 0.10 Prepared: 0 0.20	mg/l Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l 7/17/18 17:32 mg/l 7/12/18 12:19 mg/l	1x2 Sam Dil 1x1 1x1 1x1 1x1 1x1 1x1	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57	
Phosphorus, Dissolved         Sample:       TMDL-R3         8G11125-04 (Water)         Analyte         conventional Chemistry/Physical Parameters         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2         TKN         Method: EPA 351.2         TKN, Soluble         Method: EPA 353.2         NO2+NO3 as N	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964	Result           Instr:         [CALC]           Instr:         [CALC]	MDL 0.050	0.020 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10 Prepared: 0 0.10 Prepared: 0 0.20	mg/l Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l 7/17/18 17:32 mg/l 7/17/18 17:32 mg/l 7/17/18 17:32	1x2 Sam Dil 1x1 1x1 1x1 1x1 1x1 1x1	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: AJK	
Phosphorus, Dissolved         Sample:       TMDL-R3         8G11125-04 (Water)         Analyte         conventional Chemistry/Physical Parameters         Method:       ***         Dissolved Nitrogen         Method:	s by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964 Batch ID: W8G0688	Result           Instr:           Instr:           CALC]           Instr:           Instr:           CALC]           Instr:           Instr:           CALC]           Instr:           CALC]           Instr:           Instr:           A06           0.13           Instr:           Instr:           A01	MDL 0.050 0.050 0.083	0.020 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10 Prepared: 0 0.20 Prepared: 0 0.010 Prepared: 0 Prepared: 0 0.010 Prepared: 0 Prepared: 0 Prep	mg/l Units Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:32 7/17/18 17:32 mg/l 7/17/18 17:32 mg/l 7/12/18 12:19 mg/l 7/12/18 11:24	1x2 Sam Dil 1x1 1x1 1x1 1x1 1x1	07/24/18 15:53 pled: 07/09/18 11:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: Station22	

# WECK LABORATORIES, INC.

# Certificate of Analysis

FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study July 2018 P6040555

**Reported:** 08/13/2018 16:37

Project Manager: Kelly Hahs

(Continued)

### Sample Results

Sample: TMDL-R4 8G11125-05 (Water)						Sam	npled: 07/09/18 8:40 l	by L.Meeke
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifi
onventional Chemistry/Physical Parameter	rs by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	7/17/18 17:32		Analyst: ymt	
METHOD ***		1.5		0.20	m a //	11	07/00/40 40.57	
Dissolved Nitrogen		1.5		0.30	mg/l	1x1	07/23/18 18:57	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		•	7/17/18 17:33	11	Analyst: ymt	
Nitrogen, Total		1.7		0.20	mg/l	1x1	07/23/18 18:57	
Method: EPA 351.2	Batch ID: W8G0963	Instr: AA06	0.050	•	7/17/18 17:33	4.4	Analyst: ymt	
TKN		0.15	0.050	0.10	mg/l	1x1	07/23/18 18:57	
Method: EPA 351.2	Batch ID: W8G0964	Instr: AA06		-	7/17/18 17:32		Analyst: ymt	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	07/23/18 18:57	
Method: EPA 353.2	Batch ID: W8G0688	Instr: AA01		•	7/12/18 12:19		Analyst: AJK	
NO2+NO3 as N		1.5	0.083	0.20	mg/l	1x1	07/13/18 12:37	
Method: EPA 365.1	Batch ID: W8G0683	Instr: AA01		Prepared: 0	7/12/18 11:24	1	Analyst: Station22	
Phosphorus as P, Total		0.055	0.0014	0.010	mg/l	1x1	07/24/18 17:12	
Method: EPA 365.1	Batch ID: W8G0777	Instr: AA01		Prepared: 0	7/13/18 14:01		Analyst: Station22	
				•				
Phosphorus, Dissolved		0.049	0.0014	0.010	mg/l	1x1	07/24/18 15:56	
Sample: TMDL-SA 8G11125-06 (Water)				0.010		Sam	pled: 07/09/18 10:00 l	
Sample: TMDL-SA 8G11125-06 (Water) Analyte		Result	0.0014 MDL	-	mg/l Units			
Sample: TMDL-SA 8G11125-06 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC	s by APHA/EPA/ASTM Methods Batch ID: [CALC]		MDL	0.010		Sam	pled: 07/09/18 10:00 l	
Sample: TMDL-SA 8G11125-06 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC	-	Result	MDL	0.010	Units	Sam	pled: 07/09/18 10:00 l Analyzed	
Sample: TMDL-SA 8G11125-06 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	-	Result Instr: [CALC]	MDL	0.010 MRL Prepared: 0 0.30	Units 7/17/18 17:32	Sam Dil	pled: 07/09/18 10:00   Analyzed Analyst: ymt 07/23/18 18:57	
Sample: TMDL-SA 8G11125-06 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	Batch ID: [CALC]	Result Instr: [CALC]	MDL	0.010 MRL Prepared: 0 0.30	Units 7/17/18 17:32 mg/l	Sam Dil	pled: 07/09/18 10:00 l Analyzed Analyst: ymt	
Sample: TMDL-SA 8G11125-06 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	Batch ID: [CALC] Batch ID: [CALC]	Result           Instr: [CALC]           1.6           Instr: [CALC]           1.6           1.16           1.6	MDL	0.010 MRL Prepared: 0 0.30 Prepared: 0 0.20	Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l	Sam Dil 1x1	pled: 07/09/18 10:00   Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57	
Sample: TMDL-SA 8G11125-06 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	Batch ID: [CALC]	Result Instr: [CALC] 	MDL	0.010 MRL Prepared: 0 0.30 Prepared: 0 0.20	Units 7/17/18 17:32 mg/l 7/17/18 17:33	Sam Dil 1x1	pled: 07/09/18 10:00   Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt	
Sample: TMDL-SA 8G11125-06 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963	Result           Instr:         [CALC]	MDL	0.010 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10	Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l	Sam Dil 1x1 1x1	pled: 07/09/18 10:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57	
Sample: TMDL-SA 8G11125-06 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	Batch ID: [CALC] Batch ID: [CALC]	Result Instr: [CALC] 1.6 Instr: [CALC] 1.6 Instr: AA06	MDL	0.010 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10	Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33	Sam Dil 1x1 1x1	pled: 07/09/18 10:00   Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt	
Sample: TMDL-SA 8G11125-06 (Water) Analyte Inventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964	Result           Instr:         [CALC]           Instr:         [CALC]           Instr:         [CALC]           Instr:         [CALC]           Instr:         A06           Instr:         A06           Instr:         A06           ND         Instr:           Instr:         A06           ND         ND	<b>MDL</b>	0.010 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10 Prepared: 0 0.10	Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l 7/17/18 17:32 mg/l	Sam Dil 1x1 1x1 1x1	pled: 07/09/18 10:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57	
Sample: TMDL-SA 8G11125-06 (Water) Analyte Inventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963	Result           Instr:         [CALC]           Instr:         [CALC]           Instr:         [CALC]           Instr:         [CALC]           Instr:         AA06           ND         Instr:           Instr:         AA06	<b>MDL</b>	0.010 MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10 Prepared: 0 0.10	Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l 7/17/18 17:32	Sam Dil 1x1 1x1 1x1	Pled: 07/09/18 10:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt	
Sample: TMDL-SA 8G11125-06 (Water) Analyte Inventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964 Batch ID: W8G0688	Result           Instr:         [CALC]           Instr:         [CALC]           Instr:         [CALC]           Instr:         [AA06           Instr:         AA06           Instr:         AA01           Instr:         AA01           Instr:         AA01	<b>MDL</b> 0.050 0.050	0.010 MRL Prepared: 01 0.30 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.20 Prepared: 02 Prepared: 02 Prepared: 02 Prepared: 02	Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l 7/17/18 17:32 mg/l 7/17/18 12:19 mg/l	Sam Dil 1x1 1x1 1x1 1x1 1x1	Analyzed Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: Ank 07/13/18 12:38	
Sample: TMDL-SA 8G11125-06 (Water) Analyte Inventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964	Result           Instr:         [CALC]           Instr:         [CALC]           Instr:         [CALC]           Instr:         [CALC]           Instr:         [CALC]           Instr:         AA06           Instr:         AA06           Instr:         AA06           Instr:         AA06           Instr:         AA01	<b>MDL</b> 0.050 0.050	0.010 MRL Prepared: 01 0.30 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.20 Prepared: 02 Prepared: 02 Prepared: 02 Prepared: 02	Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l 7/17/18 17:32 mg/l 7/12/18 12:19	Sam Dil 1x1 1x1 1x1 1x1 1x1	Pled: 07/09/18 10:00 Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: AJK	
Sample: TMDL-SA 8G11125-06 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N Method: EPA 365.1	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8G0963 Batch ID: W8G0964 Batch ID: W8G0688	Result           Instr:         [CALC]           Instr:         [CALC]           Instr:         [CALC]           Instr:         [AA06]           Instr:         AA06]           Instr:         AA01]           Instr:         AA01]	MDL 0.050 0.053	0.010 MRL Prepared: 01 0.30 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.20 Prepared: 01 0.010 Prepared: 01 0.010 P	Units 7/17/18 17:32 mg/l 7/17/18 17:33 mg/l 7/17/18 17:33 mg/l 7/17/18 17:32 mg/l 7/12/18 12:19 mg/l 7/12/18 11:24	Sam, Dil 1x1 1x1 1x1 1x1 1x1 1x1	Pled: 07/09/18 10:00 P Analyzed Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: ymt 07/23/18 18:57 Analyst: Analyst: AJK 07/13/18 12:38 Analyst: Station22	by L.Meek



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study July 2018 P6040555

**Reported:** 08/13/2018 16:37

Project Manager: Kelly Hahs

Conventional Chemistry/Physical Parameters by APHA/E		in method	5								
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
Batch: W8G0683 - EPA 365.1											
Blank (W8G0683-BLK1)				Pre	pared: 07/12/18	Analyzed:	07/24/18	;			
Phosphorus as P, Total	- ND	0.0014	0.010	mg/l							
				-	1 07 (10 (10						
LCS (W8G0683-BS1) Phosphorus as P, Total 0	.0501	0.0014	0.010	mg/l	pared: 07/12/18 0.0500	Analyzed:	100	90-110			
	.0001	0.0011	0.010	iiig/i	0.0000		100	00 110			
Matrix Spike (W8G0683-MS1)		e: 8G11125			pared: 07/12/18	-					
Phosphorus as P, Total	0.108	0.0014	0.010	mg/l	0.0500	0.0552	106	90-110			
Matrix Spike Dup (W8G0683-MSD1)	Sourc	:e: 8G11125	-05	Pre	pared: 07/12/18	Analyzed:	07/24/18	;			
		0.0014	0.010	mg/l	0.0500	0.0552	194	90-110	34	20	MS-01
Batch: W8G0688 - EPA 353.2											
Blank (W8G0688-BLK1)					pared: 07/12/18	Analyzed:	07/13/18	:			
NO2+NO3 as N	- ND	0.083	0.20	mg/l							
LCS (W8G0688-BS1)				Pre	pared: 07/12/18	Analyzed:	07/13/18	;			
NO2+NO3 as N	1.05	0.083	0.20	mg/l	1.00		105	90-110			
	-			-	1 07 (10 (10						
Matrix Spike (W8G0688-MS1) NO2+NO3 as N	5.03	e: 8G11044 0.083	0.20	mg/l	pared: 07/12/18 2.00	3.05	99	90-110			
NO2 - NO3 US N	0.00	0.000	0.20	iiig/i	2.00	0.00	00	50-110			
Matrix Spike (W8G0688-MS2)		e: 8G11044		Pre	pared: 07/12/18	-					
NO2+NO3 as N	3.76	0.083	0.20	mg/l	2.00	1.63	106	90-110			
Matrix Spike Dup (W8G0688-MSD1)	Sourc	:e: 8G11044	-01	Pre	pared: 07/12/18	Analyzed:	07/13/18	:			
NO2+NO3 as N	5.00	0.083	0.20	mg/l	2.00	3.05	98	90-110	0.6	20	
	6	0011044		D		A	07/10/10				
Matrix Spike Dup (W8G0688-MSD2) NO2+NO3 as N	3.77	e: 8G11044 0.083	0.20	mg/l	pared: 07/12/18 2.00	1.63	107/13/18	90-110	0.3	20	
	0.11	0.000	0.20	iiig/i	2.00	1.00	101	00 110	0.0	20	
Batch: W8G0777 - EPA 365.1											
Blank (W8G0777-BLK1)				Pre	pared: 07/13/18	Analyzed:	07/24/18	;			
Phosphorus, Dissolved 0.0	00203	0.0014	0.010	mg/l		-					J
				D		A	07/24/40				
LCS (W8G0777-BS1) Phosphorus, Dissolved 0	.0514	0.0014	0.010	mg/l	pared: 07/13/18 0.0500	Analyzed:	103	90-110			
		0.0011	0.010		0.0000			00 110			
Matrix Spike (W8G0777-MS1)		e: 8G11125			pared: 07/13/18	-	07/24/18				
Phosphorus, Dissolved 0	.0888	0.0014	0.010	mg/l	0.0500	0.0360	106	90-110			
Matrix Spike Dup (W8G0777-MSD1)	Sourc	:e: 8G11125	-06	Pre	pared: 07/13/18	Analyzed:	07/24/18	;			
• • •		0.0014	0.010	mg/l	0.0500	0.0360	107	90-110	0.8	20	
Batch: W8G0963 - EPA 351.2											
Blank (W8G0963-BLK1)		0.075	0.15		pared: 07/17/18	Analyzed:	07/23/18				
TKN	- ND	0.050	0.10	mg/l							
LCS (W8G0963-BS1)				Pre	pared: 07/17/18	Analyzed:	07/23/18	;			
TKN	1.02	0.050	0.10	mg/l	1.00		102	90-110			
				-		A	07 /00 // -				
Matrix Spike (W8G0963-MS1) TKN	50urd	e: 8G13055 0.050	- <b>08</b> 0.10		pared: 07/17/18 1.00	0.192	07/23/18 108	90-110			
11.1.1	1.21	0.000	0.10	mg/l	1.00	0.192	100	30-110			



**FINAL REPORT** 

Ventura County Watershed Protection District	Project Number: TMDL Study July 2018 P6040555
Ventura County Watershed Protection District	Project Number: TMDL Study July 2018 P6040555

800 South Victoria Avenue

Ventura, CA 93009

**Reported:** 08/13/2018 16:37

Project Manager: Kelly Hahs

(Continued)

Qualifier

MS-01

RPD

Limit

10

#### **Quality Control Results** Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods (Continued) Spike Source %REC Analyte Result MDL MRL Units Level Result %REC Limits RPD Batch: W8G0963 - EPA 351.2 (Continued) Matrix Spike Dup (W8G0963-MSD1) Source: 8G13055-08 Prepared: 07/17/18 Analyzed: 07/23/18 TKN 1.32 0.050 0.10 0.192 90-110 mg/l 1.00 113 4 Batch: W8G0964 - EPA 351.2 Prepared: 07/17/18 Analyzed: 07/23/18 Blank (W8G0964-BLK1) TKN, Soluble ND 0.050 0.10 mg/l Prepared: 07/17/18 Analyzed: 07/23/18 LCS (W8G0964-BS1) 0.050 TKN, Soluble 1.00 0.10 100 90-110 mg/l 1.00 Matrix Spike (W8G0964-MS1) Source: 8G11125-02 Prepared: 07/17/18 Analyzed: 07/23/18

TKN, Soluble	1.69	0.050	0.10	mg/l	1.00	0.681	101	90-110			
Matrix Spike Dup (W8G0964-MSD1)	Sourc	e: 8G11125	-02	Prep	oared: 07/17/1	8 Analyzed:	07/23/1	8			
TKN, Soluble	1.73	0.050	0.10	mg/l	1.00	0.681	104	90-110	2	10	



FINAL REPORT

Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study July 2018 P6040555

**Reported:** 08/13/2018 16:37

Project Manager: Kelly Hahs

### Notes and Definitions

ltem	Definition
J	Estimated conc. detected <mrl and="">MDL.</mrl>
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

	Alga			ond	itio	ns,	and	utaries 8H1996 d Nutrients TMDL
		Compre	•		-			Program
CHAIN-OF-CUSTO		oompro	IIVIR	5146	mo	11110	ing	
		testian District (N			. <u>.</u>			
SAMPLING EVENT:					reem	ent v	VEC	KLABORATOFY18MA01, Project P6040555)
SAMPLING EVENT:		36-UST 20 8/15/18	010					· · · · · · · · · · · · · · · · · · ·
SAMPLERS:	, FORREST	C.GUZMY	17)					······
GRAB SAMPLES							:	
			T	Γ	ŀ			** FIELD FILTERED
			tal Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrogen			
SAMPLE ID	DATE/	TIME	Total Nitrogen, Total Phosphorus	Dissolved Nitroger	Nitrate + Nitrite as Nitrogen			NOTES
TMDL-Est	8/15/18	1020	x	x	x			CG
TMDL-R1	8/15/18	0740	x	X	x			CG
TMDL-R2	8/14/18	1115	x	x	x			JF
TMDL-R3	8/14/18	0900	x	x	x			JF
TMDL-R4	DRY		x	x	x			
TMDL-CL	DRY		x	х	x			
TMDL-SA	8/14/18/	0820	x	Х	x			JF
TMDE-FD-	=, , ,		X	X	-X-			(Note-which-site)
Signature: Follytt		*****	Signa		-1 	J.m.	Ľ	Malon
	ELLY HAH	>		Name			UCE	
Affiliation:	ICWPD		Affilia		Recei			LABS
Date/Time Relinquished:	8/15/18/14	100	-			veu: quishe		<u>/15/18/ 1400</u>
		<u> </u>				11	$\frac{1}{2}$	
Signature:			Signa Print I		<u> </u>	<i>P</i> +	art.	er Abad 211°C
Print Name; <u>M-1 UN 6</u> - Affiliation: W&CK	, ,		Affilia			L	011.	er Abad 2:10 Well
	1,844555		Date/		Recei	ved:		8/15/17 17:40
	lis/18 171	40	1			uishe	d:	

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.);

 $\mathbf{\hat{x}}_{i}$ 

Dissolved samples were field filtered



FINAL REPORT

Work Orders:	8H15095	Report Date:	9/18/2018
		Received Date:	8/15/2018
Project:	TMDL Study August 2018 P6040555	Turnaround Time:	Normal
riojeci.	····, ····	Phones:	(805) 658-4375
		Fax:	(805) 654-3350
Attn:	Kelly Hahs	P.O. #:	WECKLABORATOFY1
Client:	Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	8MA01
	DoD-ELAP #L2457 • ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R •	HW-DOH # • ISO 17025 #L2457	7.01 ●

LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 8/15/18 with the Chain-of-Custody document. The samples were received in good condition, at 2.1 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

**Reviewed by:** 

Brandon Gee Operations Manager/Senior PM







FINAL REPORT

**Reported:** 

09/18/2018 15:44

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	J. Forrest, C. Guzman	8H15095-01	Water	08/15/18 10:20	
TMDL-R1	J. Forrest, C. Guzman	8H15095-02	Water	08/15/18 07:40	
TMDL-R2	J. Forrest, C. Guzman	8H15095-03	Water	08/14/18 11:15	
TMDL-R3	J. Forrest, C. Guzman	8H15095-04	Water	08/14/18 09:00	
TMDL-SA	J. Forrest, C. Guzman	8H15095-05	Water	08/14/18 08:20	

Project Manager: Kelly Hahs

Project Number: TMDL Study August 2018 P6040555



FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study August 2018 P6040555

**Reported:** 09/18/2018 15:44

Project Manager: Kelly Hahs

Sam	ole Results
-----	-------------

Complex						Consela	d. 00 /1 5	(10 10:20 b. L Farmer	C C
Sample:	TMDL-Est					Sample	u: U8/15,	/18 10:20 by J. Forrest	, C. Guzman
	8H15095-01 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional C	hemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: *** [ METHOD ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: (	08/21/18 12:58		Analyst: ymt	
Dissolved I	Nitrogen		0.67		0.30	mg/l	1x1	08/28/18 18:54	
Method: _Var	ious	Batch ID: [CALC]	Instr: [CALC]		Prepared: (	08/21/18 12:58		Analyst: ymt	
Nitrogen, T	otal		1.2		0.20	mg/l	1x1	08/28/18 18:54	
Method: EPA	351.2	Batch ID: W8H1154	Instr: AA06		Prepared:	08/20/18 12:04		Analyst: ymt	
TKN, Solub	ble		0.53	0.050	0.10	mg/l	1x1	08/27/18 14:40	
Method: EPA	351.2	Batch ID: W8H1155	Instr: Inst		Prepared:	08/20/18 12:06		Analyst: ymt	
TKN			1.1	0.050	0.10	mg/l	1x1	08/27/18 14:40	
Method: EPA	353.2	Batch ID: W8H1250	Instr: AA01		Prepared:	08/21/18 12:58		Analyst: mnq	
NO2+NO3 a	as N		0.15	0.083	0.20	mg/l	1x1	08/28/18 18:54	J
Method: EPA	365.1	Batch ID: W8H1241	Instr: AA01		Prepared:	08/21/18 12:05		Analyst: vll	
Phosphoru	is as P, Total		0.14	0.0014	0.010	mg/l	1x1	08/30/18 17:31	
Phosphoru	is, Dissolved		0.19	0.0014	0.010	mg/l	1x1	08/30/18 17:32	
Sample:	TMDL-R1 8H15095-02 (Water)					Sample	ed: 08/15	/18 7:40 by J. Forrest	;, C. Guzman
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional C	hemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: *** E	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: (	08/21/18 12:58		Analyst: ymt	
Dissolved I	Nitrogen		0.47		0.30	mg/l	1x1	08/28/18 18:56	
Method: _Var	ious	Batch ID: [CALC]	Instr: [CALC]		Prepared:	08/21/18 12:58		Analyst: ymt	
Nitrogen, T	otal		0.55		0.20	mg/l	1x1	08/28/18 18:56	
Method: EPA	351.2	Batch ID: W8H1154	Instr: AA06		Prepared:	08/20/18 12:04		Analyst: ymt	
TKN, Solub	ble		0.47	0.050	0.10	mg/l	1x1	08/27/18 14:40	
Method: EPA	351.2	Batch ID: W8H1155	Instr: Inst		Prepared:	08/20/18 12:06		Analyst: ymt	
TKN			0.55	0.050	0.10	mg/l	1x1	08/27/18 14:40	
Method: EPA	353.2	Batch ID: W8H1250	Instr: AA01		Prepared:	08/21/18 12:58		Analyst: mnq	
NO2+NO3	as N		ND	0.083	0.20	mg/l	1x1	08/28/18 18:56	
Method: EPA	365.1	Batch ID: W8H1241	Instr: AA01			10/21/10 12.0E		Analyst: vll	
Methou. LIA		Paten iPt Hominen			Prepared: (	0/21/10 12.05		Analyst: VII	
	is as P, Total		0.12	0.0014	<b>Prepared:</b> 0 0.010	mg/l	1x1	08/30/18 17:37	



FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Project Number: TMDL Study August 2018 P6040555

**Reported:** 09/18/2018 15:44

Project Manager: Kelly Hahs

(Continued)

Sample Results

8H15095-03 (Water)

TMDL-R2

Sampled: 08/14/18 11:15 by J. Forrest, C. Guzman

Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	8/21/18 12:58		Analyst: ymt	
METHOD ***								
Dissolved Nitrogen		2.5		0.30	mg/l	1x1	08/28/18 18:57	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	8/21/18 12:58		Analyst: ymt	
Nitrogen, Total		2.5		0.20	mg/l	1x1	08/28/18 18:57	
Method: EPA 351.2	Batch ID: W8H1154	Instr: AA06		Prepared: 0	8/20/18 12:04		Analyst: ymt	
TKN, Soluble		0.57	0.050	0.10	mg/l	1x1	08/27/18 14:40	
Method: EPA 351.2	Batch ID: W8H1155	Instr: Inst		Prepared: 0	8/20/18 12:06		Analyst: ymt	
TKN		0.63	0.050	0.10	mg/l	1x1	08/27/18 14:40	
Method: EPA 353.2	Batch ID: W8H1250	Instr: AA01		Prepared: 0	8/21/18 12:58		Analyst: mnq	
NO2+NO3 as N		1.9	0.083	0.20	mg/l	1x1	08/28/18 18:57	
<b>Method:</b> EPA 365.1	Batch ID: W8H1241	Instr: AA01		Prepared: 0	8/21/18 12:05		Analyst: vil	
Phosphorus as P, Total		0.26	0.0028	0.020	mg/l	2x1	08/30/18 17:39	M-C
								M-C
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water)		0.24	0.0028	0.020	mg/l Sample	2x1 ed: 08/14	08/30/18 17:41 /18 9:00 by J. Forrest,	
Phosphorus, Dissolved Sample: TMDL-R3		0.24 Result	0.0028	0.020 MRL	Ū.			
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water)	ers by APHA/EPA/ASTM Methods				Sample	ed: 08/14	/18 9:00 by J. Forrest,	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water) Analyte onventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]		MDL	MRL	Sample	ed: 08/14	/18 9:00 by J. Forrest,	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water) Analyte onventional Chemistry/Physical Parameter	-	Result	MDL	MRL	Sample	ed: 08/14	/18 9:00 by J. Forrest, Analyzed	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	Batch ID: [CALC]	Result Instr: [CALC]	MDL	MRL Prepared: 0 0.30	Sample Units 8/21/18 12:58 mg/l	ed: 08/14 Dil	/18 9:00 by J. Forrest, Analyzed Analyst: ymt 08/28/18 18:58	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water) Analyte onventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD ***	-	Result Instr: [CALC]	MDL	MRL Prepared: 0 0.30	Sample Units 8/21/18 12:58	ed: 08/14 Dil	/18 9:00 by J. Forrest, Analyzed Analyst: ymt	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	Batch ID: [CALC]	Result Instr: [CALC] ND Instr: [CALC]	MDL	MRL Prepared: 0 0.30 Prepared: 0 0.20	Sample Units 8/21/18 12:58 mg/l 8/21/18 12:58 mg/l	ed: 08/14 Dil 1x1	/18 9:00 by J. Forrest, Analyzed Analyst: ymt 08/28/18 18:58 Analyst: ymt 08/28/18 18:58	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	Batch ID: [CALC] Batch ID: [CALC]	Result Instr: [CALC] ND Instr: [CALC] 0.22	MDL	MRL Prepared: 0 0.30 Prepared: 0 0.20	Sample Units 8/21/18 12:58 mg/l 8/21/18 12:58	ed: 08/14 Dil 1x1	/18 9:00 by J. Forrest, Analyzed Analyst: ymt 08/28/18 18:58 Analyst: ymt	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC]	Result           Instr:         [CALC]           ND         Instr:           Instr:         [CALC]           0.22         Instr:	MDL	MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10	Sample Units 8/21/18 12:58 mg/l 8/21/18 12:58 mg/l 8/20/18 12:04	ed: 08/14 Dil 1x1 1x1	/18 9:00 by J. Forrest, Analyzed Analyst: ymt 08/28/18 18:58 Analyst: ymt 08/28/18 18:58 Analyst: ymt	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8H1154	Result           Instr:         [CALC]           0.22         [Instr:           Instr:         [A06]           0.11         [Instr:	MDL	MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10	Sample Units 8/21/18 12:58 mg/l 8/21/18 12:58 mg/l 8/20/18 12:04 mg/l	ed: 08/14 Dil 1x1 1x1	/18 9:00 by J. Forrest, Analyzed Analyst: ymt 08/28/18 18:58 Analyst: ymt 08/28/18 18:58 Analyst: ymt 08/28/18 18:58	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN, Soluble Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8H1154	Result           Instr:         [CALC]           Instr:         [A06]           Instr:         Instr:	<b>MDL</b>	MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10 Prepared: 0 0.10	Sample Units 8/21/18 12:58 mg/l 8/21/18 12:58 mg/l 8/20/18 12:04 mg/l 8/20/18 12:06	ed: 08/14 <b>Dil</b> 1x1 1x1 1x1	/18 9:00 by J. Forrest, Analyzed Analyst: ymt 08/28/18 18:58 Analyst: ymt 08/28/18 18:58 Analyst: ymt 08/27/18 14:40 Analyst: ymt	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 BH15095-04 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN, Soluble Method: EPA 351.2 TKN	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8H1154 Batch ID: W8H1155	Result           Instr:         [CALC]           Instr:         [A06           0.11         [Instr:           Instr:         Inst           0.22         [Inst	<b>MDL</b>	MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10 Prepared: 0 0.10	Sample Units 8/21/18 12:58 mg/l 8/21/18 12:58 mg/l 8/20/18 12:04 mg/l 8/20/18 12:06 mg/l	ed: 08/14 <b>Dil</b> 1x1 1x1 1x1	/18 9:00 by J. Forrest, Analyzed Analyst: ymt 08/28/18 18:58 Analyst: ymt 08/28/18 18:58 Analyst: ymt 08/27/18 14:40 Analyst: ymt 08/27/18 14:40	, C. Guzma
Phosphorus, Dissolved Sample: TMDL-R3 8H15095-04 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN, Soluble Method: EPA 353.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8H1154 Batch ID: W8H1155	Result           Instr:         [CALC]           Instr:         [A06]           Instr:         [A06]           Instr:         [A06]	<b>MDL</b> 0.050 0.050	MRL Prepared: 0 0.30 Prepared: 0 0.20 Prepared: 0 0.10 Prepared: 0 0.10 Prepared: 0 0.20	Sample Units 8/21/18 12:58 mg/l 8/21/18 12:58 mg/l 8/20/18 12:04 mg/l 8/20/18 12:06 mg/l 8/21/18 12:58	ed: 08/14 <b>Dil</b> 1x1 1x1 1x1 1x1	/18 9:00 by J. Forrest, Analyzed Analyst: ymt 08/28/18 18:58 Analyst: ymt 08/28/18 18:58 Analyst: ymt 08/27/18 14:40 Analyst: ymt 08/27/18 14:40	, C. Guzma



FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study August 2018 P6040555

**Reported:** 09/18/2018 15:44

Project Manager: Kelly Hahs

(Continued)

Sample Results

Sample:	TMDL-SA					Sample	ed: 08/14	/18 8:20 by J. Forrest	, C. Guzma
	8H15095-05 (W	Vater)							
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional	Chemistry/Physica	l Parameters by APHA/EPA/ASTM Method	ls						
Method: ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CAL	C]	Prepared:	08/21/18 12:58		Analyst: ymt	
METHOD ***									
Dissolved	Nitrogen		0.39		0.30	mg/l	1x1	08/28/18 18:59	
Method: _Va	arious	Batch ID: [CALC]	Instr: [CAL	C]	Prepared:	08/21/18 12:58		Analyst: ymt	
Nitrogen,	Total		0.42		0.20	mg/l	1x1	08/28/18 18:59	
Method: EPA	A 351.2	Batch ID: W8H1154	Instr: AA06	5	Prepared:	08/20/18 12:04		Analyst: ymt	
TKN, Solu	ible		0.055	0.050	0.10	mg/l	1x1	08/27/18 14:40	
Method: EPA	A 351.2	Batch ID: W8H1155	Instr: Inst		Prepared:	08/20/18 12:06		Analyst: ymt	
TKN			0.076	0.050	0.10	mg/l	1x1	08/27/18 14:40	
Method: EPA	A 353.2	Batch ID: W8H1250	Instr: AA01	I	Prepared:	08/21/18 12:58		Analyst: mnq	
NO2+NO3	as N		0.34	0.083	0.20	mg/l	1x1	08/28/18 18:59	
Method: EPA	A 365.1	Batch ID: W8H1241	Instr: AA01	l	Prepared:	08/21/18 12:05		Analyst: vll	
Phosphor	rus as P, Total		0.029	0.0014	0.010	mg/l	1x1	08/30/18 17:47	
Phosphor	us, Dissolved		0.017	0.0014	0.010	mg/l	1x1	08/30/18 17:48	



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study August 2018 P6040555

**Reported:** 09/18/2018 15:44

Project Manager: Kelly Hahs

	Quality	Control	Results
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Conventional Chemistry/Physical Parameters	Dy APHA/EPA/AST	vi ivietno	us		<b>C</b> . "	6				0.00	
Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifie
atch: W8H1154 - EPA 351.2											
Blank (W8H1154-BLK1)					Prepared: 08/20/18	Analvzed:	08/27/18				
TKN, Soluble	ND	0.050	0.10	mg/l							
LCS (W8H1154-BS1)					Prepared: 08/20/18	Analyzod:	08/27/18				
TKN, Soluble	0.999	0.050	0.10	mg/l	1.00	Analyzeu.	100	90-110			
Matrix Spike (W8H1154-MS1)	Sourc	e: 8H1509	5-04		Prepared: 08/20/18	Analyzed:	08/27/18				
TKN, Soluble	1.10	0.050	0.10	mg/l	1.00	0.115	99	90-110			
Matrix Spike Dup (W8H1154-MSD1)	Sourc	e: 8H1509	5-04		Prepared: 08/20/18	Analvzed:	08/27/18				
TKN, Soluble		0.050	0.10	mg/l	1.00	0.115	103	90-110	4	10	
atch: W8H1155 - EPA 351.2											
Blank (W8H1155-BLK1)				1	Prepared: 08/20/18	Analyzed:	08/27/18				
TKN	ND	0.050	0.10	mg/l							
LCS (W8H1155-BS1)					Prepared: 08/20/18	Analvzed:	08/27/18				
TKN	1.00	0.050	0.10	mg/l	1.00		100	90-110			
Matrix Spike (W8H1155-MS1)	Sourc	e: 8H1509	5-04		Prepared: 08/20/18	Analyzod:	08/27/18				
TKN		0.050	0.10	mg/l	1.00	0.219	93	90-110			
Matrix Spike Dup (W8H1155-MSD1)	Sourc	e: 8H1509	5-04		Prepared: 08/20/18	Analyzed:	08/27/18				
TKN		0.050	0.10	mg/l	1.00	0.219	95	90-110	2	10	
atch: W8H1241 - EPA 365.1											
Blank (W8H1241-BLK1)					Prepared: 08/21/18	Analvzed:	08/30/18				
Phosphorus as P, Total	ND	0.0014	0.010	mg/l	•	,					
Phosphorus, Dissolved	• ND	0.0014	0.010	mg/l							
LCS (W8H1241-BS1)					Prepared: 08/21/18	Analyzed:	08/30/18				
Phosphorus as P, Total	0.0487	0.0014	0.010	mg/l	0.0500	-	97	90-110			
Phosphorus, Dissolved	0.0487	0.0014	0.010	mg/l	0.0500		97	90-110			
Matrix Spike (W8H1241-MS1)	Sourc	e: 8H1509	5-01	I	Prepared: 08/21/18	Analyzed:	08/30/18				
Phosphorus as P, Total	0.190	0.0014	0.010	mg/l	0.0500	0.144	92	90-110			
Matrix Spike Dup (W8H1241-MSD1)	Sourc	e: 8H1509	5-01		Prepared: 08/21/18	Analyzed:	08/30/18				
Phosphorus as P, Total			0.010	mg/l	0.0500	0.144	90	90-110	0.5	20	
atch: W8H1250 - EPA 353.2											
Blank (W8H1250-BLK1)					Prepared: 08/21/18	Analyzed:	08/28/18				
NO2+NO3 as N	ND	0.083	0.20	mg/l							
LCS (W8H1250-BS1)					Prepared: 08/21/18	Analyzed:	08/28/18				
NO2+NO3 as N	0.993	0.083	0.20	mg/l	1.00	-	99	90-110			
Matrix Spike (W8H1250-MS1)	Sourc	e: 8G0901	7-01		Prepared: 08/21/18	Analyzed:	08/28/18				
NO2+NO3 as N	8.17	0.083	0.20	mg/l	2.00	6.12	102	90-110			
Matrix Spike (W8H1250-MS2)	Sourc	e: 8H0900	01-01		Prepared: 08/21/18	Analyzed:	08/28/18				
NO2+NO3 as N	2.00	0.083	0.20	mg/l	2.00	ND	100	90-110			
Matrix Spike Dup (W8H1250-MSD1)	Source	e: 8G0901	7-01		Prepared: 08/21/18	Analyzed	08/28/18				
NO2+NO3 as N	8.16	0.083	0.20	mg/l	2.00	6.12	102	90-110	0.1	20	
											Page 6



FINAL REPORT

Project Manager:	Kelly Hahs							
							(Cc	ontinued)
ethods (Continue	ed)							
		Spike	Source		%REC		RPD	
DL MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
		ethods (Continued) DL MRL Units	Spike	Spike Source	Spike Source	Spike Source %REC	Spike Source %REC	ethods (Continued) Spike Source %REC RPD

Matrix Spike Dup (W8H1250-MSD2)	Sourc	e: 8H09001	-01	Prep	oared: 08/21/18	Analyzed:	08/28/1	8			
NO2+NO3 as N	1.98	0.083	0.20	mg/l	2.00	ND	99	90-110	1	20	



FINAL REPORT

Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study August 2018 P6040555

**Reported:** 09/18/2018 15:44

Project Manager: Kelly Hahs

### Notes and Definitions

ltem	Definition
J	Estimated conc. detected <mrl and="">MDL.</mrl>
M-06	Due to the high concentration of analyte inherent in the sample, sample was diluted prior to preparation. The MDL and MRL were raised due to this dilution.
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified. All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.



September 10<sup>th</sup>, 2018

Ventura Country Watershed Protection District Kelly Hahs 800 S Victoria Ave Ventura, CA 93009

Dear Ms. Hahs:

Aquatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed chlorophyll-a data report for the Ventura River Algae TMDL. Chlorophyll- a analyses are conducted under guidelines prescribed in *Standard Methods for the Examination of Water and Wastewater* (APHA, 22<sup>nd</sup> Edition), Section SM 10200 H.

Please contact me with any questions or issues you may have regarding this report.

Sincerely,

Karin Wisenbaker Senior Biologist (805) 643-5621 ex.17

Client: Ventura Country Watershed Protection District Project: Ventura River Algae TMDL



Station	Field Replicate	Number of Transects Collected	Chlorophyll a	Units
TMDL-R1	1	11	16	ug/cm2
TMDL-R2	1	11	34	ug/cm2
TMDL-R3	1	11	9.3	ug/cm2
TMDL-R4	1	0	DRY	ug/cm2
TMDL-CL	1	0	DRY	ug/cm2
TMDL-SA	1	0	DRY	ug/cm2
TMDL-Est	1	NA	520	ug/L

Chlorophyll a results from August 14th-15th, 2018

CH i stody

rom: Aquatic Bioassay and Consulting L 29 N. Olive St. Ventura, CA 930	abs.	Phone: Fax: Project ID:	(805) 64 (805) 64 VCWPL Algae 1	13-2930 )		То:	Company: Address: Phone:	Aquatic Bioassay and Consulting Labs. 29 N. Olive St. Ventura, CA 93001		
		1			-			ANALYSIS		
Sample I.D. No.	Sample Date	Time	Matrix	COMPSUC Volume/ No.	Reps					
					•	Chl-a				
TMDL-R3	8.14.18	0900		510		×				Constitution of City of Marcon
TMDL-R3 TMDL-R2	8.14.18	1115		540	1	X				
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Aquatic Bioassay Consultir	a Laboratories	v	L	8.14.10 0715	- 1	335			r	ev. 001 10 02

Ct i stody

From: Aquatic Bioassay and Consulting La 29 N. Olive St. Ventura, CA 930	abs	Phone: Fax: Project ID:	(805) 64			To:	Company: Address: Phone:	and Co 29 N. C	e Bioassay nsulting Labs. Dive St. a, CA 93001 <b>ANALYSIS</b>	ter provinsi se		
Sample I.D. No.	Sample Date	Time	Matrix	Composite Volume/ No.	Reps							
	0	Anto		1110	•	X Chl-a	11 - 11 - 11 - 11 - 11 - 11 - 11 - 11		data anticipation and the sub-sub-sub-	- Servicianto de consecutivo		
TMDL-R1	8.15.18	0740		448								the second
TMUL-EST	8.15.18	1020				X						
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opecial matrictions.												
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	<b>9</b> <sup>~•</sup> <sup>•</sup>		(VR			-				163 114			
Sugar course	<b>X</b>	Compre	hens	sive	Мо	nito	ring	Pro	gram				
CHAIN-OF-CUSTO	DY RECORD								1	_OF _		1	
CLIENT: Ventura Co	unty Watershed F	Protection District (N	Vaster	r Agr	eeme	ent W	/E¢K	(LAB(	ORATO	DFY1 <b>9</b> M	A01, Pro	oject P60-	40555)
SAMPLING EVENT:		EMBER 20	218										
SAMPLING DATE:		15/18											
	C. GUZN	AN, K. HAH	<u>IS</u>	<u>ð.(</u>	201	162							
GRAB SAMPLES			_		<u> </u>				(**	FIELD F			
SAMPLE ID	DATI	E/TIME	Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen					DTES			
TMDL-Est	9/5/18	13:50	Īx	X	X						-		
·	1		_	-									
TMDL-R1		11:50	X	X	X			$\square$					
TMDL-R2		09:45	X	X	X					· • • •			
TMDL-R3		07:40	X	x	X					<u>.                                </u>	<u></u>		
TMDL-R4-			*	<del>x-</del>	<b>-X</b> -				DR	<b>y</b>			
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Affiliation: Vcup	D		Affilia	ation:	N	R	ti	iAl	S				
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Affiliation:	Welk		Affilia	ation:									
Date/Time Received:	916118	18.02	Date	Time	Recei	ved:							
Date/Time Relinquished:			Date	/Time	Relin	quishe	d:						
Miscellaneous Notes (Hazard	ous Materials, Quick t	urn-around time, etc.):	(	Diss		sampl	es wer	re field	filtered	$\geq$			

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**FINAL REPORT** 

Work Orders:	8106085	Report Date:	10/22/2018
		Received Date:	9/6/2018
Project:	TMDL Study September 2018 P6040555	Turnaround Time:	Normal
Toject.		Phones:	(805) 658-4375
		Fax:	(805) 654-3350
Attn:	Kelly Hahs	P.O. #:	WECKLABORATOFY1
Client:	Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	8MA01

### ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 9/06/18 with the Chain-of-Custody document. The samples were received in good condition, at 2.0 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

**Reviewed by:** 

Brandon Gee Operations Manager/Senior PM





FINAL REPORT

### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study September 2018 P6040555

### **Reported:** 10/22/2018 07:35

Project Manager: Kelly Hahs

### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	C Guzman, K Haha, B Jones	8106085-01	Water	09/05/18 13:50	
TMDL-R1	C Guzman, K Haha, B Jones	8106085-02	Water	09/05/18 11:50	
TMDL-R2	C Guzman, K Haha, B Jones	8106085-03	Water	09/05/18 09:45	
TMDL-R3	C Guzman, K Haha, B Jones	8106085-04	Water	09/05/18 07:40	



FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study September 2018 P6040555

**Reported:** 10/22/2018 07:35

Project Manager: Kelly Hahs

Sample	Results
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Sample: TMDL-Est				1	Sampled: 09/0	5/18 13	:50 by C Guzman, K Ha	aha, B Jones
8106085-01 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameter	ters by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09,	/14/18 10:47		Analyst: ymt	
Dissolved Nitrogen		0.48		0.30	mg/l	1x1	09/17/18 14:50	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09,	/14/18 10:47		Analyst: ymt	
Nitrogen, Total		0.75		0.20	mg/l	1x1	09/17/18 14:50	
Method: EPA 351.2	Batch ID: W8I0660	Instr: AA06		Prepared: 09,	/13/18 10:07		Analyst: ymt	
ТКМ		0.75	0.050	0.10	mg/l	1x1	09/16/18 13:08	
Method: EPA 351.2	Batch ID: W8I0662	Instr: AA06		Prepared: 09,	/13/18 10:11		Analyst: ymt	
TKN, Soluble		0.48	0.050	0.10	mg/l	1x1	09/16/18 13:08	
Method: EPA 353.2	Batch ID: W8I0776	Instr: Inst		Prepared: 09,	/14/18 10:47		Analyst: mnq	
NO2+NO3 as N		ND	0.083	0.20	mg/l	1x1	09/17/18 14:50	
Method: EPA 365.1	Batch ID: W8I1145	Instr: AA01		Prepared: 09,	/20/18 12:31		Analyst: mnq	
Phosphorus as P, Total		0.11	0.0014	0.010	mg/l	1x1	09/21/18 13:53	
Method: EPA 365.1	Batch ID: W8I1284	Instr: AA01		Prepared: 09,	/24/18 12:44		Analyst: mnq	
Phosphorus, Dissolved		0.025	0.0014	0.010	mg/l	1x1	09/27/18 15:30	
Sample: TMDL-R1					Sampled: 09/0	5/18 11	·50 by C Guzman K H	aha Bilones
Sample: TMDL-R1 8I06085-02 (Water)					Sampled: 09/0	5/18 11	:50 by C Guzman, K Ha	aha, B Jones
8106085-02 (Water)		Result	MDL	MRL	Sampled: 09/0 Units	05/18 11 Dil	:50 by C Guzman, K Ha Analyzed	aha, B Jones Qualifier
8106085-02 (Water) Analyte Conventional Chemistry/Physical Paramet	-		MDL	MRL	Units		Analyzed	
8106085-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC	ters by APHA/EPA/ASTM Methods Batch ID: [CALC]		MDL		Units			
8106085-02 (Water) Analyte Conventional Chemistry/Physical Paramet	-		MDL	MRL	Units		Analyzed	
8106085-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD ***	-	Instr: [CALC]	MDL	MRL Prepared: 09,	Units /14/18 10:47 mg/l	Dil	Analyzed Analyst: ymt	
8106085-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	Batch ID: [CALC]	Instr: [CALC]	MDL	MRL Prepared: 09, 0.30	Units /14/18 10:47 mg/l	Dil	Analyzed Analyst: ymt 09/17/18 15:00	
8106085-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	Batch ID: [CALC]	Instr: [CALC] 0.94 Instr: [CALC]	MDL	MRL Prepared: 09, 0.30 Prepared: 09,	Units /14/18 10:47 mg/l /14/18 10:47 mg/l	Dil 1x1	Analyzed Analyst: ymt 09/17/18 15:00 Analyst: ymt	
8106085-02 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	Batch ID: [CALC] Batch ID: [CALC]	Instr: [CALC] 0.94 Instr: [CALC] 0.93	MDL 0.050	MRL Prepared: 09, 0.30 Prepared: 09, 0.20	Units /14/18 10:47 mg/l /14/18 10:47 mg/l	Dil 1x1	Analyzed Analyst: ymt 09/17/18 15:00 Analyst: ymt 09/17/18 15:00	
8106085-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC]	Instr: [CALC] 0.94 Instr: [CALC] 0.93 Instr: AA06		MRL Prepared: 09, 0.30 Prepared: 09, 0.20 Prepared: 09,	Units /14/18 10:47 mg/l /14/18 10:47 mg/l /13/18 10:07 mg/l	<b>Dil</b> 1x1 1x1	Analyzed           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/17/18 15:00           Analyst: ymt	
8106085-02 (Water) Analyte Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W810660	Instr: [CALC] 0.94 Instr: [CALC] 0.93 Instr: AA06 0.52		MRL Prepared: 09, 0.30 Prepared: 09, 0.20 Prepared: 09, 0.10	Units /14/18 10:47 mg/l /14/18 10:47 mg/l /13/18 10:07 mg/l	<b>Dil</b> 1x1 1x1	Analyzed           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/16/18 13:08	
8106085-02 (Water) Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W810660	Instr: [CALC] 0.94 Instr: [CALC] 0.93 Instr: AA06 0.52 Instr: AA06	0.050	MRL Prepared: 09, 0.30 Prepared: 09, 0.20 Prepared: 09, 0.10 Prepared: 09,	Units /14/18 10:47 mg/l /14/18 10:47 mg/l /13/18 10:07 mg/l /13/18 10:11 mg/l	Dil 1x1 1x1 1x1	Analyzed           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/16/18 13:08           Analyst: ymt	
8106085-02 (Water)         Analyte         Conventional Chemistry/Physical Parameter         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2         TKN         Method: EPA 351.2         TKN, Soluble	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W810660 Batch ID: W810662	Instr: [CALC] 0.94 Instr: [CALC] 0.93 Instr: AA06 0.52 Instr: AA06 0.53	0.050	MRL           Prepared: 09,           0.30           Prepared: 09,           0.20           Prepared: 09,           0.10           Prepared: 09,           0.10	Units /14/18 10:47 mg/l /14/18 10:47 mg/l /13/18 10:07 mg/l /13/18 10:11 mg/l	Dil 1x1 1x1 1x1	Analyzed           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/16/18 13:08           Analyst: ymt           09/16/18 13:08	
8106085-02 (Water) Analyte Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W810660 Batch ID: W810662	Instr: [CALC] 0.94 Instr: [CALC] 0.93 Instr: AA06 0.52 Instr: AA06 0.53 Instr: Inst	0.050	MRL           Prepared: 09,           0.30           Prepared: 09,           0.20           Prepared: 09,           0.10           Prepared: 09,           0.10           Prepared: 09,           0.10	Units /14/18 10:47 mg/l /14/18 10:47 mg/l /13/18 10:07 mg/l /13/18 10:11 mg/l /14/18 10:47 mg/l	Dil 1x1 1x1 1x1 1x1 1x1	Analyzed           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/16/18 13:08           Analyst: ymt           09/16/18 13:08           Analyst: mnq	
8106085-02 (Water)         Analyte         Conventional Chemistry/Physical Parameter         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2         TKN         Method: EPA 351.2         TKN, Soluble         Method: EPA 353.2         N02+NO3 as N	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W810660 Batch ID: W810662 Batch ID: W810776	Instr: [CALC] 0.94 Instr: [CALC] 0.93 Instr: AA06 0.52 Instr: AA06 0.53 Instr: Inst 0.41	0.050	MRL Prepared: 09, 0.30 Prepared: 09, 0.20 Prepared: 09, 0.10 Prepared: 09, 0.10 Prepared: 09, 0.10 Prepared: 09, 0.20	Units /14/18 10:47 mg/l /14/18 10:47 mg/l /13/18 10:07 mg/l /13/18 10:11 mg/l /14/18 10:47 mg/l	Dil 1x1 1x1 1x1 1x1 1x1	Analyzed           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/16/18 13:08           Analyst: ymt           09/16/18 13:08           Analyst: ymt           09/16/18 13:08           Analyst: ymt           09/16/18 13:08	
8106085-02 (Water)         Analyte         Conventional Chemistry/Physical Parameter         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2         TKN         Method: EPA 351.2         TKN, Soluble         Method: EPA 353.2         NO2+NO3 as N         Method: EPA 365.1	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W810660 Batch ID: W810662 Batch ID: W810776	Instr: [CALC] 0.94 Instr: [CALC] 0.93 Instr: AA06 0.52 Instr: AA06 0.53 Instr: Inst 0.41 Instr: AA01	0.050 0.050 0.083	MRL         Prepared: 09,         0.30         Prepared: 09,         0.20         Prepared: 09,         0.10         Prepared: 09,         0.10         Prepared: 09,         0.20         Prepared: 09,         0.20         Prepared: 09,         0.20         Prepared: 09,         0.20         Prepared: 09,         0.20	Units /14/18 10:47 mg/l /14/18 10:47 mg/l /13/18 10:07 mg/l /13/18 10:11 mg/l /14/18 10:47 mg/l /20/18 12:31 mg/l	Dil 1x1 1x1 1x1 1x1 1x1 1x1	Analyzed           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/17/18 15:00           Analyst: ymt           09/16/18 13:08           Analyst: ymt           09/16/18 13:08           Analyst: mnt           09/16/18 13:08           Analyst: mnt           09/17/18 15:00	



**FINAL REPORT** 

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Method: EPA 353.2

NO2+NO3 as N

Method: EPA 365.1

Method: EPA 365.1

Phosphorus as P, Total

Phosphorus, Dissolved

Project Number: TMDL Study September 2018 P6040555

Reported: 10/22/2018 07:35

Project Manager: Kelly Hahs

(Continued)

Sample Results

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Sample:	TMDL-R2					Sampled: 09/	05/18 9:	45 by C Guzman, K Ha	aha, B Jones
	8106085-03 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional C	Chemistry/Physical Parameters by	APHA/EPA/ASTM Methods							
Method: *** [ METHOD ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	0/14/18 10:47		Analyst: ymt	
Dissolved	Nitrogen		2.4		0.30	mg/l	1x1	09/17/18 15:01	
Method: _Var	ious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	/14/18 10:47		Analyst: ymt	
Nitrogen, T	Fotal		2.3		0.20	mg/l	1x1	09/17/18 15:01	
Method: EPA	351.2	Batch ID: W8I0660	Instr: AA06		Prepared: 09	/13/18 10:07		Analyst: ymt	
TKN			0.58	0.050	0.10	mg/l	1x1	09/16/18 13:08	
Method: EPA	351.2	Batch ID: W8I0662	Instr: AA06		Prepared: 09	/13/18 10:11		Analyst: ymt	
TKN, Solut	ble		0.58	0.050	0.10	mg/l	1x1	09/16/18 13:08	
Method: EPA	353.2	Batch ID: W8I0776	Instr: Inst		Prepared: 09	0/14/18 10:47		Analyst: mnq	
NO2+NO3	as N		1.8	0.083	0.20	mg/l	1x1	09/17/18 15:01	
Method: EPA	365.1	Batch ID: W8I1145	Instr: AA01		Prepared: 09	/20/18 12:31		Analyst: mnq	
Phosphoru	us as P, Total		0.19	0.0028	0.020	mg/l	1x2	09/21/18 14:00	
Method: EPA	365.1	Batch ID: W8I1284	Instr: AA01		Prepared: 09	/24/18 12:44		Analyst: mnq	
Phosphoru	us, Dissolved		0.17	0.0014	0.010	mg/l	1x1	09/27/18 15:33	
Sample:	TMDL-R3					Sampled: 09/	05/18 7:	40 by C Guzman, K Ha	aha, B Jones
	8106085-04 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional C	Chemistry/Physical Parameters by	APHA/EPA/ASTM Methods							
Method: *** [ METHOD ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	0/14/18 10:47		Analyst: ymt	
Dissolved N	Nitrogen		ND		0.30	mg/l	1x1	09/17/18 15:02	
Method: _Var	ious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 09	0/14/18 10:47		Analyst: ymt	
Nitrogen, T	lotal		0.28		0.20	mg/l	1x1	09/17/18 15:02	
Method: EPA	351.2	Batch ID: W8I0660	Instr: AA06		Prepared: 09	/13/18 10:07		Analyst: ymt	
TKN			0.17	0.050	0.10	mg/l	1x1	09/16/18 13:08	
Method: EPA	351.2	Batch ID: W8I0662	Instr: AA06		Prepared: 09	/13/18 10:11		Analyst: ymt	
TKN, Solut	ble		0.10	0.050	0.10	mg/l	1x1	09/16/18 13:08	

Instr: Inst

Instr: AA01

Instr: AA01

0.010

0.0081

0.11

0.083

0.0014

0.0014

Prepared: 09/14/18 10:47

Prepared: 09/20/18 12:31

Prepared: 09/24/18 12:44

mg/l

mg/l

mg/l

0.20

0.010

0.010

Analyst: mnq

Analyst: mnq

Analyst: mnq 09/27/18 15:34

1x1

1x1

1x1

09/17/18 15:02

09/21/18 14:01

Batch ID: W8I0776

Batch ID: W8I1145

Batch ID: W8I1284

J



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study September 2018 P6040555

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Project Manager: Kelly Hahs

Quality C	control Results
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Conventional Chemistry/Physical Parameters by A	PHA/EPA/AST	M Methods	5								
Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifie
Batch: W810660 - EPA 351.2	Kesuit	NIDL	WIRL	Units	Levei	Result	JOREC	Liiiits	KF D	Linint	Quaime
Blank (W810660-BLK1)				P	repared: 09/13/18	Analyzed (	09/16/18				
TKN		0.050	0.10	mg/l	repurcu: 05/15/16	/maryzea.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
LCS (W810660-BS1)				P	repared: 09/13/18	Analyzed (	09/16/18				
TKN	0.976	0.050	0.10	mg/l	1.00	, and y 2 cu. (	98	90-110			
Matrix Spike (W8I0660-MS1)	Source: 8	106085-04		P	repared: 09/13/18	Analyzed: (	09/16/18				
ТКМ	1.22	0.050	0.10	mg/l	1.00	0.169	105	90-110			
Matrix Spike Dup (W810660-MSD1)	Source: 8	106085-04		P	repared: 09/13/18	Analyzed: (	09/16/18				
TKN		0.050	0.10	mg/l	1.00	0.169	103	90-110	2	10	
atch: W8I0662 - EPA 351.2											
Blank (W8I0662-BLK1)				P	repared: 09/13/18	Analyzed: (	09/16/18				
TKN, Soluble		0.050	0.10	mg/l		-					
LCS (W810662-BS1)				P	repared: 09/13/18	Analyzed: (	09/16/18				
TKN, Soluble	0.980	0.050	0.10	mg/l	1.00		98	90-110			
Matrix Spike (W8l0662-MS1)	Source: 8	106085-04		P	repared: 09/13/18	Analyzed: (	09/16/18				
TKN, Soluble			0.10	mg/l	1.00	0.105	106	90-110			
Matrix Spike Dup (W8l0662-MSD1)	Courses 9	106095 04		D	remared: 00/12/18	Analyzada (	0/16/10				
Matrix Spike Dup (W810662-MSD1) TKN, Soluble			0.10	mg/l	repared: 09/13/18 1.00	0.105		90-110	2	10	
atch: W810776 - EPA 353.2				-							
Blank (W8I0776-BLK1)				P	repared: 09/14/18	Analyzed: (	09/17/18				
NO2+NO3 as N		0.083	0.20	mg/l		,	,				
LCS (W8I0776-BS1)				P	repared: 09/14/18	Analyzed: (	09/17/18				
NO2+NO3 as N	0.972	0.083	0.20	mg/l	1.00			90-110			
Matrix Spike (W8I0776-MS1)	Source: 8	105067-01		P	repared: 09/14/18	Analyzed: (	09/17/18				
NO2+NO3 as N		0.33	0.80	mg/l	8.00	15.9	100	90-110			
Matrix Spike (W8I0776-MS2)	Source: 8	105067-02		P	repared: 09/14/18	Analyzed (	09/17/18				
NO2+NO3 as N			0.20	mg/l	2.00	3.26		90-110			
Matrix Spike Dup (W8I0776-MSD1)	Courses 9	105067 01		D	remared: 00/11/19	Analyzada (	0 /17 /10				
NO2+NO3 as N		0.33	0.80	mg/l	repared: 09/14/18 8.00	15.9		90-110	0	20	
	<b>6 1 1</b>	105067 00				A	0 /4 7 /4 0				
Matrix Spike Dup (W810776-MSD2) NO2+NO3 as N	<b>Source: 8</b>	105067-02 0.083	0.20	mg/l	repared: 09/14/18 2.00	3.26	100	90-110	0.4	20	
atch: W8I1145 - EPA 365.1				Ū							
						A	0 /24 /40				
Blank (W8I1145-BLK1) Phosphorus as P, Total		0.0014	0.010	mg/l	repared: 09/20/18	Analyzed: 0	J9/21/18				
Blank (W8I1145-BLK2)				P	repared: 09/27/18	Analyzed: (	09/28/18				
Phosphorus as P, Total	0.00155	0.0014	0.010	mg/l							
LCS (W8I1145-BS1)				D	repared: 09/20/18	Analyzed	)9/21/18				
Phosphorus as P, Total	0.0480	0.0014	0.010	mg/l	0.0500		96	90-110			
LCC (W01114E BC2)				D	roparod: 00/27/10	Applymodel	10/20/10				
LCS (W8I1145-BS2) Phosphorus as P, Total	0.0501	0.0014	0.010	mg/l	repared: 09/27/18 0.0500	Analyzea: (	100	90-110			
• *			-	0			-	-			



FINAL REPORT

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800 South Victoria Avenue

Ventura, CA 93009

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Reported:

(Continued)

10/22/2018 07:35

Project Manager: Kelly Hahs

Conventional Chemistry/Physical Parameters by A	PHA/EPA/AST	M Methods	(Continue	d)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W8I1145 - EPA 365.1 (Continued)											
LCS (W8I1145-BS2)				Pre	oared: 09/27/1	8 Analyzed:	09/28/18	3			
Matrix Spike (W8I1145-MS1)	Source: 8	06085-01		Pre	oared: 09/20/1	8 Analyzed:	09/21/18	6			
Phosphorus as P, Total	0.112	0.0014	0.010	mg/l	0.0500	0.112	0	90-110			MS-01
Matrix Spike (W8I1145-MS2)	Source: 8	06085-01		Pre	oared: 09/27/1	8 Analyzed:	09/28/18	:			
Phosphorus as P, Total	0.143	0.0014	0.010	mg/l	0.0500	0.112	62	90-110			MS-03
Matrix Spike Dup (W8I1145-MSD1)	Source: 8	06085-01		Pre	oared: 09/20/1	8 Analyzed:	09/21/18	:			
Phosphorus as P, Total	0.103	0.0014	0.010	mg/l	0.0500	0.112	NR	90-110	8	20	MS-01
Matrix Spike Dup (W8I1145-MSD2)	Source: 8	06085-01		Pre	oared: 09/27/1	8 Analyzed:	09/28/18	5			
Phosphorus as P, Total	0.143	0.0014	0.010	mg/l	0.0500	0.112	62	90-110	0	20	MS-03
Batch: W8I1284 - EPA 365.1											
Blank (W8I1284-BLK1)				Pre	oared: 09/24/1	8 Analyzed:	09/27/18	:			
Phosphorus, Dissolved		0.0014	0.010	mg/l							
LCS (W8I1284-BS1)				Pre	oared: 09/24/1	8 Analyzed:	09/27/18	:			
Phosphorus, Dissolved	0.0477	0.0014	0.010	mg/l	0.0500		95	90-110			
Matrix Spike (W8I1284-MS1)	Source: 8	06096-01		Pre	oared: 09/24/1	8 Analyzed:	09/27/18	:			
Phosphorus, Dissolved	0.140	0.0014	0.010	mg/l	0.0500	0.0893	101	90-110			
Matrix Spike Dup (W8I1284-MSD1)	Source: 8	06096-01		Pre	oared: 09/24/1	8 Analyzed:	09/27/18	:			
Phosphorus, Dissolved	0.140	0.0014	0.010	mg/l	0.0500	0.0893	101	90-110	0	20	



FINAL REPORT

Ventura County Watershed Protection District

800 South Victoria Avenue

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Project Manager: Kelly Hahs

### Notes and Definitions

Definition ltem Estimated conc. detected <MRL and >MDL. J. MS-01 The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference. MS-03 Multiple analyses indicate the percent recovery is out of acceptance limits due to a possible matrix effect. ND NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL. Dil Dilution Sample results reported on a dry weight basis drv RPD **Relative Percent Difference** % Rec Percent Recovery Sample that was matrix spiked or duplicated. Source MDI Method Detection Limit MRL The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR) MDA Minimum Detectable Activity NR Not Reportable TIC Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified. All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

8106085



October 3<sup>rd</sup>, 2018

Ventura Country Watershed Protection District Kelly Hahs 800 S Victoria Ave Ventura, CA 93009

Dear Ms. Hahs:

Aquatic Bioassay & Consulting Laboratories is pleased to provide you with the enclosed chlorophyll-a data report for the Ventura River Algae TMDL. Chlorophyll- a analyses are conducted under guidelines prescribed in *Standard Methods for the Examination of Water and Wastewater* (APHA, 22<sup>nd</sup> Edition), Section SM 10200 H.

Please contact me with any questions or issues you may have regarding this report.

Sincerely,

Scott Johnson Environmental Programs (805) 643-5621 ex.11

Client: Ventura Country Watershed Protection District Project: Ventura River Algae TMDL



Station	Field Replicate	Number of Transects Collected	Chlorophyll a	Units
TMDL-R1	1	11	8.7	ug/cm2
TMDL-R2	1	11	20	ug/cm2
TMDL-R3	1	11	10	ug/cm2
TMDL-R4	1	0	DRY	ug/cm2
TMDL-CL	1	0	DRY	ug/cm2
TMDL-SA	1	0	DRY	ug/cm2
TMDL-Est	1	NA	44	ug/L

Chlorophyll a results from September 5th, 2018

Ch i stody

rom: Aquatic Bioassay and Consulting L 29 N. Olive St. Ventura, CA 930	abs.	Phone: Fax: Project ID:		43-2930 <b>)</b>		То: 	Company: Address: Phone:	: Aquatic Bioassay and Consulting Labs. 29 N. Olive St. Ventura, CA 93001
n <u>a 1. – porta</u> ndona milo <sup>n</sup> ocem - 3. doka - da						[		ANALYSIS
Sample I.D. No.	Sample Date	Time	Matrix	Composide Volume/ No.	Reps			
				Status Status Status Streemen		Ch1-a		
TMDL-R3	9.5.18	0740		560	N.	X		
TMDL-R2	9.5.18	0945		582		X		
TMDL-RI	9.5.18	1150		440	1	X		
TMDL-EST	9.5.18	1350		1000	1	X		
ecial Instructions:			and the straight		and insurations			
LINQUISHED BY:	DATE: TIME: 95.18 1520	RECEIVED		DATE: TIN		KELIN	QUISHED B	BY: DATE: TIME: RECEIVED BY: DATE: TI
	10 10	harmen Via				Annes		e e fais en la constance de la la constance en la constance en la constance en la constance de la constance en

Protocular Contractor Contractor	Algae	Ventur , Eutrophic ( Compret	Co VR	ndi Alç	tio: jae	ns, TN	anc DL	l Nutrie )	ents Tl	8210111 NDL	anter - Branner, and
CHAIN-OF-CUSTO	DY RECORD							· 1	OF	`1	
CLIENT: Ventura Co	unty Watershed Prot	ection District (M	aster	Agro	ете	ent W	/ECK	LABORA	TOFY19N	MA01, Project P604	40555)
SAMPLING EVENT:	OCTOBE	RZOIR	_								
SAMPLING DATE:	10/10/18 K. HAHS K	ENTINED									
SAMPLERS: GRAB SAMPLES	K. MAILS K	TORINCI	·								
GRAB SAMPLES											
			Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	ate + Nitrite as Nitrogen				** FIELD	FILTERED	
SAMPLE ID	DATE/1		Total	Diss	Nitrate				NOTES		
TMDL-Est	10/10/18	11:25	x	x	x						
TMDL-R1		10:40	x	x	x						
TMDL-R2		09:30	x	x	x						
TMDL-R3		08:25	x	x	x						
TMDL-R4		· · · · · · · · · · · · · · · · · · ·	x	x	x				DAY		
TMDL-CL			x	x	x				DRY		
TMDL-SA			x	x	x				DKY	-	
			$\square$	-		1-					
Signature: Caluad Print Name: Caluad Affiliation: VCSA Received Date/Time: Relinquished Date/Time:	10/10/18/ -=	14:45	Print Affilia Rece	ature: Name ation: bived I	U Date/1	J€(		ABS 110/18 120/18	/ 14 17 14 14 14	:45	
Signature:			Sign	ature:			r h.	reported			
Print Name: ALLMA				Name				AIME 6	ONT.	<u> </u>	
Affiliation: WECK			+	ation:			_	re labs	-rev		
Received Date/Time: 10/	10/18 1600		-	eived	Date/				10 17:	75	
		27	Relir	nquish	ed Da	ate/Tir	ne:			2.	
Miscellaneous Notes (Hazard									2.	W.	

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FINAL REPORT

8J10111	Report Date:	12/18/2018
	Received Date:	10/10/2018
TMDL Study October 2018 P6040555	Turnaround Time:	Normal
	Phones:	(805) 658-4375
	Fax:	(805) 654-3350
Kelly Hahs	P.O. #:	WECKLABORATOFY1 8MA01
Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	
	TMDL Study October 2018 P6040555 Kelly Hahs Ventura County Watershed Protection District 800 South Victoria Avenue	TMDL Study October 2018 P6040555       Turnaround Time:         TMDL Study October 2018 P6040555       Phones:         Fax:       Fax:         Kelly Hahs       P.O. #:         Ventura County Watershed Protection District       Billing Code:         800 South Victoria Avenue       Fax:

### ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 10/10/18 with the Chain-of-Custody document. The samples were received in good condition, at 2.6 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

**Reviewed by:** 

Brandon Gee Operations Manager/Senior PM



# WECK LABORATORIES, INC.

# Certificate of Analysis

FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study October 2018 P6040555

**Reported:** 12/18/2018 16:20

Project Manager: Kelly Hahs

### Case Narrative

SUPP Report generated to correct dilution factor calculation for sample -03. BG 12/18/18

### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	K. Hahs, K.Fortner	8J10111-01	Water	10/10/18 11:25	
TMDL-R1	K. Hahs, K.Fortner	8J10111-02	Water	10/10/18 10:40	
TMDL-R2	K. Hahs, K.Fortner	8J10111-03	Water	10/10/18 09:30	
TMDL-R3	K. Hahs, K.Fortner	8J10111-04	Water	10/10/18 08:25	
	,				



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study October 2018 P6040555

**Reported:** 12/18/2018 16:20

Project Manager: Kelly Hahs

Sample:     TMDL-Est     Sampled: 10/10/18 11:2       8J10111-01 (Water)     Result     MDL     MRL     Units     Dil     Anal       Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods     Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods     MDL     MRL     Units     Dil     Anal	5 by K. Hahs, K.Fortner
Analyte Result MDL MRL Units Dil Anal	
Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods	yzed Qualifier
Method: *** DEFAULT SPECIFIC         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/29/18 10:17         Analyst: 10/29/18 10:17	/mt
	8 14:29
Method: _Various     Batch ID: [CALC]     Instr: [CALC]     Prepared: 10/29/18 10:17     Analyst: 10/29/18 10:17	ymt
Nitrogen, Total         0.78         0.20         mg/l         1x1         11/05/1	8 14:29
Method: EPA 351.2         Batch ID: W8J1489         Instr: AA06         Prepared: 10/23/18 15:25         Analyst:	ymt
TKN 0.050 0.10 mg/l 1x1 10/29/1	8 14:56
Method: EPA 351.2         Batch ID: W8J1490         Instr: AA06         Prepared: 10/23/18 15:26         Analyst:	ymt
TKN, Soluble         0.43         0.050         0.10         mg/l         1x1         10/29/1	8 14:56
Method:         EPA 353.2         Batch ID:         W8J1759         Instr:         AA01         Prepared:         10/29/18         10:17         Analyst:	nnq
NO2+NO3 as N ND 0.083 0.20 mg/l 1x1 11/05/1	8 14:29
Method: EPA 365.1         Batch ID: W8J0978         Instr: Inst         Prepared: 10/15/18 15:59         Analyst:	het
	het 8 15:34
	8 15:34
Phosphorus as P, Total 0.055 0.0014 0.010 mg/l 1x1 10/31/1	8 15:34 het
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8J1211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:	8 15:34 het 8 17:48
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8J1211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sampled:         10/10/18 10:4         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8J1211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sampled: 10/11-02 (Water)         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8J1211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sample:         TMDL-R1         Sample: 10/10/18 10:4         Analyte         MBL         MRL         Units         Dil         Analyte	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yzed Qualifier
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8/1211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4         Malayst:           Analyte         Result         MDL         MRL         Units         Dil         Anal           Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods         Instr: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst: 10/10/18 10:4	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yzed Qualifier
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8/1211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4         Mathod: ***         DEFAULT SPEcIFIC         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst: 10/24/18 14:03 <t< td=""><td>8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yzed Qualifier ymt 8 20:01</td></t<>	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yzed Qualifier ymt 8 20:01
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8J1211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4         MRL         Units         Dil         Anal           Analyte         Result         MDL         MRL         Units         Dil         Anal           Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst: 10/29/1           METHOD ****         Dissolved Nitrogen         1.4         0.30         mg/l         1x1         10/29/1	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yzed Qualifier ymt 8 20:01
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8J1211         Instr: Inst 0.026         Prepared: 10/18/18 11:18         Analyst: 0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sample::         TMDL-R1         Sample::         10/111-02 (Water)         Sample::         MBL         MRL         Units         Dil         Analyst:           Analyte         Result         MDL         MRL         Units         Dil         Analyst:           Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods         Instr: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:           METHOD ***         Dissolved Nitrogen         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yzed Qualifier ymt 8 20:01 ymt 8 20:01
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8J1211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sample:         TMDL-R1         Sample:: 10/10/18 10:4           Analyte         Result         MDL         MRL         Units         Dil         Anal           Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:           Method: *** DEFAULT SPECIFIC         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:           METHOD ***         Dissolved Nitrogen         1.4         0.30         mg/l         1x1         10/29/1           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:           Nitrogen, Total         1.5         0.20         mg/l         1x1         10/29/1	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yzed Qualifier ymt 8 20:01 ymt 8 20:01
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8/J211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sample:         TMDL-R1         Sample: 10/10/18 10:4           Analyte         Result         MDL         MRL         Units         Dil         Anal           Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyte           Method: *** DEFAULT SPECIFIC         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyte: 10/29/1           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyte: 10/29/1           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst: 10/29/1           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst: 10/29/1           Method: _Larious         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yzed Qualifier ymt 8 20:01 ymt 8 20:01 ymt 8 20:01 ymt 8 14:56
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8/1211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sample:         TMDL-R1         Sample: 10/10/18 10:4         10/31/1           Analyte         Result         MDL         MRL         Units         Dil         Analyte           Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyts: 10/29/1           Method: *** DEFAULT SPECIFIC         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyts: 10/29/1           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyts: 10/29/1           Method: EPA 351.2         Batch ID: W8/1489         Instr: AA06         Prepared: 10/23/18 15:25         Analyts: 10/29/1           Method: EPA 351.2         Batch ID: W8/1489         Instr: AA06         Prepared: 10/23/18 15:25         Analyts: 10/29/1	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yzed Qualifier 9 20:01 ymt 8 20:01 ymt 8 20:01 ymt 8 14:56 ymt
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8J1211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sample:         TMDL-R1         Sample: 10/10/18 10:4         Sample: 10/10/18 10:4           Analyte         Result         MDL         MRL         Units         Dil         Analyte           Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst: 10/29/1           Method: ****         DEFAULT SPECIFIC         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst: 10/29/1           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/23/18 15:25         Analyst: 10/29/1           Method: EPA 351.2         Batch ID: W8J1489         Instr: AA06         Prepared: 10/23/18 15:25         Analyst: 10/29/1           Method: EPA 351.2         Batch ID: W8J1490         Instr: AA06         Prepared: 10/23/18 15:26         Analyst: 10/29/1           Method: EPA 351.2         Batch ID: W8J149	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yeed Qualifier ymt 8 20:01 ymt 8 20:01 ymt 8 14:56 ymt 8 14:56
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8/J211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4         Sampled: 10/10/18 10:4           Analyte         Result         MDL         MRL         Units         Dil         Anal           Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:           Method: ***         DEFAULT SPECIFIC         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:           METHOD ***         Dissolved Nitrogen         1.4         0.30         mg/l         1x1         10/29/1           Method: _Various         Batch ID: [CALC]         Instr: (CALC]         Prepared: 10/24/18 14:03         Analyst:           Nitrogen, Total         1.5         0.20         mg/l         1x1         10/29/1           Method: EPA 351.2         Batch ID: W8/1489         Instr: AA06         Prepared: 10/23/18	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner ymt 8 20:01 ymt 8 20:01 ymt 8 14:56 ymt 8 14:56
Phosphorus as P, Total         0.055         0.0014         0.010         mg/l         1x1         10/31/1           Method: EPA 365.1         Batch ID: W8/J211         Instr: Inst         Prepared: 10/18/18 11:18         Analyst:           Phosphorus, Dissolved         0.026         0.0014         0.010         mg/l         1x1         10/31/1           Sample:         TMDL-R1         Sample:         TMDL-R1         Sample:         TMDL-R1         Batch ID: (0.010         MRL         Units         Dil         Analyst:           Analyte         Result         MDL         MRL         Units         Dil         Analyst:           Method: ***         DEFAULT SPECIFIC         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:           Method: Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:           Nitrogen, Total         1.4         0.30         mg/l         1x1         10/29/1           Method: Sall         Batch ID: [CALC]         Instr: [CALC]         Prepared: 10/24/18 14:03         Analyst:           Method: Sall         Batch ID: W8/1489         Instr: AA06         Prepared: 10/23/18 15:25         Analyst:           Method: EPA 351.2         Batch ID:	8 15:34 het 8 17:48 0 by K. Hahs, K.Fortner yzed Qualifier ymt 8 20:01 ymt 8 20:01 ymt 8 14:56 ymt 8 14:56 mnq 8 20:01

Method: EPA 365.1

Phosphorus, Dissolved

Instr: Inst

0.12

0.0014

Batch ID: W8J1211

Prepared: 10/18/18 11:18

mg/l

1x1

0.010

Analyst: het

10/31/18 17:48



FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Project Number: TMDL Study October 2018 P6040555

**Reported:** 12/18/2018 16:20

Project Manager: Kelly Hahs

(Continued)

Sample Results

TMDL-R2

Sampled: 10/10/18 9:30 by K. Hahs, K.Fortner

8J10111-03 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameter	rs by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 10	0/24/18 14:03		Analyst: ymt	
Dissolved Nitrogen		4		0.30	mg/l	1x1	10/29/18 20:02	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 10/24/18 14:03			Analyst: ymt	
Nitrogen, Total		4.1		0.20	mg/l	1x1	10/29/18 20:02	
Method: EPA 351.2	Batch ID: W8J1489	Instr: AA06		Prepared: 10	0/23/18 15:25		Analyst: ymt	
ТКМ		0.85	0.050	0.10 mg/l		1x1	10/29/18 14:56	
Method: EPA 351.2	Batch ID: W8J1490	Instr: AA06		Prepared: 10	0/23/18 15:26		Analyst: ymt	
TKN, Soluble		0.66	0.050	0.10	mg/l	1x1	10/29/18 14:56	
Method: EPA 353.2	Batch ID: W8J1570	Instr: AA01		Prepared: 10	0/24/18 14:03		Analyst: mnq	
NO2+NO3 as N		3.3	0.083	0.20	mg/l	1x1	10/29/18 20:02	
Method: EPA 365.1	Batch ID: W8J0978	Instr: Inst		Prepared: 10	0/15/18 15:59		Analyst: het	
Phosphorus as P, Total		1.0	0.014	0.10	mg/l	10x1	10/31/18 15:34	M-06
Method: EPA 365.1	Batch ID: W8J1211	Instr: Inst		Prenared: 10	0/18/18 11:18		Analyst: het	
Phosphorus, Dissolved		0.57	0.014	0.10	mg/l	1x10	10/31/18 17:48	
Sample: TMDL-R3 8J10111-04 (Water)							/10/18 8:25 by K. Ha	-,
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameter	-							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 10	0/24/18 14:03		Analyst: ymt	
Dissolved Nitrogen				0.30	mg/l	1x1	10/29/18 20:03	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 10	0/24/18 14:03		Analyst: ymt	
Nitrogen, Total				0.20	mg/l	1x1	10/29/18 20:03	
Method: EPA 351.2	Batch ID: W8J1489	Instr: AA06		Prepared: 10	0/23/18 15:25		Analyst: ymt	
TKN		0.063	0.050	0.10	mg/l	1x1	10/29/18 14:56	J
Method: EPA 351.2	Batch ID: W8J1490	Instr: AA06		Prepared: 10	0/23/18 15:26		Analyst: ymt	
TKN, Soluble			0.050	0.10	mg/l	1x1	10/29/18 14:56	
Method: EPA 353.2	Batch ID: W8J1570	Instr: AA01		Prepared: 10	0/24/18 14:03		Analyst: mnq	
NO2+NO3 as N		0.12	0.083	0.20	mg/l	1x1	10/29/18 20:03	J
Method: EPA 365.1	Batch ID: W8J0978	Instr: Inst		Prepared: 10	0/15/18 15:59		Analyst: het	
Phosphorus as P, Total		0.021	0.0014	0.010	mg/l	1x1	10/31/18 15:34	
Method: EPA 365.1	Batch ID: W8J1211	Instr: Inst		Prepared: 10	0/18/18 11:18		Analyst: het	

Phosphorus, Dissolved

0.018

0.0014

0.010

mg/l

1x1



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study October 2018 P6040555

**Reported:** 12/18/2018 16:20

Project Manager: Kelly Hahs

Conventional Chemistry/Physical Pa	rameters by APHA/EPA/AST	M Methoo	ds								
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W8J0978 - EPA 365.1											
Blank (W8J0978-BLK1)	ND	0.0014	0.010		epared: 10/15/18	8 Analyzed:	10/31/18				
Phosphorus as P, Total	• • • • • • • • • • • • • • • • • • •	0.0014	0.010	mg/l							
Blank (W8J0978-BLK2)					epared: 10/18/18	8 Analyzed:	10/31/18				
Phosphorus as P, Total	0.00650	0.0014	0.010	mg/l							J
LCS (W8J0978-BS1)				Pre	epared: 10/15/18	8 Analyzed:	10/31/18				
Phosphorus as P, Total	0.0495	0.0014	0.010	mg/l	0.0500		99	90-110			
LCS (W8J0978-BS2)				Pre	epared: 10/18/18	8 Analyzed:	10/31/18				
Phosphorus as P, Total	0.0513	0.0014	0.010	mg/l	0.0500		103	90-110			
Duplicate (W8J0978-DUP1)	Source: 8	J13021-03		Pro	epared: 10/18/18	R Analyzed.	10/31/18				
Phosphorus as P, Total	ND	0.0014	0.010	mg/l	pureu. 10/10/10	ND	10/51/10			20	
				-			40 /24 /40				
Matrix Spike (W8J0978-MS1) Phosphorus as P, Total		U13021-03 0.0014	0.010	Pre mg/l	epared: 10/15/18 0.0500	8 Analyzed: ND	10/31/18	90-110			
	0.0100	0.0011	0.010	iiig/i	0.0000	нв	100	00 110			
Matrix Spike Dup (W8J0978-MSD1)		J13021-03	0.010		epared: 10/15/18	-			4	00	
Phosphorus as P, Total	0.0492	0.0014	0.010	mg/l	0.0500	ND	98	90-110	1	20	
Batch: W8J1211 - EPA 365.1											
Blank (W8J1211-BLK1)				Pre	epared: 10/18/18	8 Analyzed:	10/31/18				
Phosphorus, Dissolved	ND	0.0014	0.010	mg/l		-					
LCS (W8J1211-BS1)				Pre	epared: 10/18/18	8 Analyzed:	10/31/18				
Phosphorus, Dissolved	0.0522	0.0014	0.010	mg/l	0.0500	, rinaryzeu.	104	90-110			
Durbicate (M/01211 DUD1)	Courses 9	J13019-01		Duo	marade 10/19/19	Analyzadı	10/21/10				
Duplicate (W8J1211-DUP1) Phosphorus, Dissolved		0.0056	0.040	mg/l	epared: 10/18/18	0.274	10/51/10		0.1	20	
•				Ū							
Matrix Spike (W8J1211-MS1) Phosphorus, Dissolved	Source: 8	0.0014	0.010	Pre mg/l	epared: 10/18/18 0.0500	8 Analyzed: 0.0263	<b>10/31/18</b> 106	90-110			
	0.0732	0.0014	0.010	mg/i	0.0000	0.0200	100	50-110			
Matrix Spike Dup (W8J1211-MSD1)		J10111-01	0.010		epared: 10/18/18					00	
Phosphorus, Dissolved	0.0782	0.0014	0.010	mg/l	0.0500	0.0263	104	90-110	1	20	
Batch: W8J1489 - EPA 351.2											
Blank (W8J1489-BLK1)				Pre	epared: 10/23/18	8 Analyzed:	10/29/18				
TKN		0.050	0.10	mg/l		-					
LCS (W8J1489-BS1)				Pre	epared: 10/23/18	8 Analyzed:	10/29/18				
TKN	0.927	0.050	0.10	mg/l	1.00	,	93	90-110			
Matrix Calles (MO11400 MC1)	<b>C</b>			Due		0 A	10/20/10				
Matrix Spike (W8J1489-MS1) TKN		0.050	0.10	mg/l	epared: 10/23/18 1.00	0.0634	96	90-110			
				-							
Matrix Spike Dup (W8J1489-MSD1) TKN	Source: 8	0.050	0.10	Pre mg/l	epared: 10/23/18 1.00	8 Analyzed: 0.0634	10/29/18 102	90-110	5	10	
11518	1.00	0.000	0.10	iiig/i	1.00	0.0004	102	30-110	5	10	
Batch: W8J1490 - EPA 351.2											
Blank (W8J1490-BLK1)				Pre	epared: 10/23/18	8 Analyzed:	10/29/18				
TKN, Soluble		0.050	0.10	mg/l							
LCS (W8J1490-BS1)				Pre	epared: 10/23/18	8 Analyzed:	10/29/18				
	0.913	0.050	0.10	mg/l	1.00		91	90-110			
3J10111											Page 5 of 7



**FINAL REPORT** 

800 South Victoria Avenue		riojec	t Number.	,						12/18	/2018 16:20
Ventura, CA 93009		Project	Manager:	Kelly Hahs							
Quality Control Resu	lts									(Co	ontinued)
Conventional Chemistry/Physical Parameters by	y APHA/EPA/AST	M Method	s (Continue	d)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W8J1490 - EPA 351.2 (Continued)											
LCS (W8J1490-BS1)				•	oared: 10/23/1	•					
Matrix Spike (W8J1490-MS1) TKN, Soluble		<b>J10111-04</b> 0.050	0.10	Prep mg/l	oared: 10/23/1 1.00	18 Analyzed: ND	10/29/18 104	90-110			
Matrix Spike Dup (W8J1490-MSD1)	Source: 8	J10111-04		Prep	oared: 10/23/1	8 Analyzed:	10/29/18	;			
TKN, Soluble	0.988	0.050	0.10	mg/l	1.00	ND	99	90-110	5	10	
Batch: W8J1570 - EPA 353.2											
Blank (W8J1570-BLK1)				Prep	oared: 10/24/1	8 Analyzed:	10/29/18	3			
NO2+NO3 as N	ND	0.050	0.050	mg/l							
LCS (W8J1570-BS1)				Prep	oared: 10/24/1	8 Analyzed:	10/29/18	3			
NO2+NO3 as N	0.993	0.050	0.050	mg/l	1.00		99	90-110			
Matrix Spike (W8J1570-MS1)	Source: 8	J09008-15		Prep	oared: 10/24/1	8 Analyzed:	10/29/18	3			
NO2+NO3 as N	4.07	0.050	0.050	mg/l	2.00	1.93	107	90-110			
Matrix Spike (W8J1570-MS2)		J10012-22		Prep	oared: 10/24/1	-					
NO2+NO3 as N	6.28	0.050	0.050	mg/l	2.00	4.35	97	90-110			
Matrix Spike Dup (W8J1570-MSD1)		J09008-15		-	oared: 10/24/1	-					
NO2+NO3 as N	4.04	0.050	0.050	mg/l	2.00	1.93	106	90-110	0.7	20	
Matrix Spike Dup (W8J1570-MSD2)		J10012-22		-	oared: 10/24/1	-					
NO2+NO3 as N	6.29	0.050	0.050	mg/l	2.00	4.35	97	90-110	0.2	20	
Batch: W8J1759 - EPA 353.2											
Blank (W8J1759-BLK1)				-	oared: 10/29/1	8 Analyzed:	11/05/18	3			
NO2+NO3 as N	ND	0.050	0.050	mg/l							
LCS (W8J1759-BS1)				-	oared: 10/29/1	8 Analyzed:					
NO2+NO3 as N	0.924	0.050	0.050	mg/l	1.00		92	90-110			
Matrix Spike (W8J1759-MS1)		J16016-04			oared: 10/29/1						
NO2+NO3 as N	3.22	0.050	0.050	mg/l	2.00	1.23	100	90-110			
Matrix Spike (W8J1759-MS2)		J16016-05		•	oared: 10/29/1	•					
NO2+NO3 as N	3.82	0.050	0.050	mg/l	2.00	1.80	101	90-110			
Matrix Spike Dup (W8J1759-MSD1)		J16016-04		•	oared: 10/29/1	•					
NO2+NO3 as N	3.21	0.050	0.050	mg/l	2.00	1.23	99	90-110	0.3	20	
Matrix Spike Dup (W8J1759-MSD2)		J16016-05		-	oared: 10/29/1	-					
NO2+NO3 as N	3.80	0.050	0.050	mg/l	2.00	1.80	100	90-110	0.5	20	

Project Number: TMDL Study October 2018 P6040555

**Reported:** 20



FINAL REPORT

Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study October 2018 P6040555

**Reported:** 12/18/2018 16:20

Project Manager: Kelly Hahs

### Notes and Definitions

ltem	Definition
J	Estimated conc. detected <mrl and="">MDL.</mrl>
M-06	Due to the high concentration of analyte inherent in the sample, sample was diluted prior to preparation. The MDL and MRL were raised due to this dilution.
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified. All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

		gae, Eutrop	hic Co (VR)						utrients TMDL	AK1	2005 (
VENILIRA COUNT		Com	brehens	sive	Мо	nito	ring	, Pro	ogram		
CHAIN-OF-CUST	ODY RECORD								1 OF	1	
CLIENT: Ventura	County Watershed	Protection Distri	ct (Master	r Agr	eem	ent V	VEC	<lab< td=""><td>ORATOFY19MA01, I</td><td> Project P60405</td><td>555)</td></lab<>	ORATOFY19MA01, I	 Project P60405	555)
SAMPLING EVENT:		JOVEMBE	R 21	DIE	5						
SAMPLING DATE:		2018	<u></u>								
SAMPLERS:	Larce M	Kellie F	<u> </u>							<u> </u>	
GRAB SAMPLES	<u> </u>				F	ľ	ſ				7
SAMPLE ID		E/TIME	Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen				** FIELD FILTE	RED	
TMDL-Est	11/19/18		<u> </u>	 X	Z X		<u> </u>		NOTES	<b>-</b>	-
TMDL-R1		1500			· · ·						-
· · · · · · · · · · · · · · · · · · ·	11/19/18	1345	X	X	X			•			-
TMDL-R2	11/19/18	1200	X	X	X						_
TMDL-R3	11/19/18	1100	X	X	X		<u> </u>			<u> </u>	4
TMDL-R4			<b>X</b>	X	X				= · · · · · · · · · · · · · · · · · · ·		_
TMDL-CL		•	<u> </u>	Х	х						
TMDL-SA			x	х	x						- -
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Signature: Yan	Man.		Signa	ture:	Ĝ	tur	No -	),	Crean		7
Print Name:	Meeker		Print	Name	ŝ		jen	ς.	Greer.		]
Affiliation: MC			Affilie	tion:	V	Ċω	PD				]
Received Date/Time:	1/19/18		Rece	ived I	)ate/T	ime:	n/	20/2	LOIS OGOO		
Relinquished Date/Time:	11/19/18 18:	40 (infrid		quish	ed Da	te/Tim	ne: //	120	12018		
	11 0-	· · ·	-		- 13				·		-
Signature: Co	Kit	·	Signa								4
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Affiliation: V CC	Lab.	۰.	Affilia					Î.	2 1/2 20 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-
Received Date/Time: 11						ime: (		$\frac{n}{n}$	Kerl (	racived)	4
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Višcellaneous Notes (Haz	ardous Materials, Quick	tum-around time, etc	c.):						· · ·		
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FINAL REPORT

Work Orders:	8K20056	Report Date:	1/11/2019
		Received Date:	11/20/2018
Project:	TMDL Study November 2018 P6040555	Turnaround Time:	Normal
i i ojecti.	,	Phones:	(805) 658-4375
		Fax:	(805) 654-3350
Attn:	Kelly Hahs	P.O. #:	WECKLABORATOFY1 8MA01
Client:	Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	
	Ventura County Watershed Protection District 800 South Victoria Avenue	Fax: P.O. #:	

### ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 11/20/18 with the Chain-of-Custody document. The samples were received in good condition, at 3.6 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

**Reviewed by:** 

Brandon Gee Operations Manager/Senior PM





FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study November 2018 P6040555

**Reported:** 01/11/2019 14:53

Project Manager: Kelly Hahs

#### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	Lara M/ Kellie F	8K20056-01	Water	11/19/18 15:00	
TMDL-R1	Lara M/ Kellie F	8K20056-02	Water	11/19/18 13:45	
TMDL-R2	Lara M/ Kellie F	8K20056-03	Water	11/19/18 12:00	
TMDL-R3	Lara M/ Kellie F	8K20056-04	Water	11/19/18 11:00	



**FINAL REPORT** 

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study November 2018 P6040555

**Reported:** 01/11/2019 14:53

Project Manager: Kelly Hahs

Sample Results	5
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Sample: TMDL-Est					5-	malad <sup>,</sup>	11/19/18 15:00 by Lara	M/Kallia
'					30	impieu.	11/19/10 13.00 Dy Laio	a IVI/ Keille
8K20056-01 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualif
onventional Chemistry/Physical Parameter	-							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 12	2/06/18 22:38		Analyst: mcs	
METHOD *** Dissolved Nitrogen		0.44		0.30	mg/l	1x1	12/12/18 17:52	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prenared: 12	2/06/18 22:38		Analyst: mcs	
Nitrogen, Total	Baten ibt [crite]	0.68		0.20	mg/l	1x1	12/12/18 17:52	
Method: EPA 351.2	Batch ID: W8K1075	Instr: AA06		Prepared: 11	/20/18 14:04		Analyst: mcs	
TKN		0.68	0.050	0.10	mg/l	1x1	11/23/18 11:46	
Method: EPA 351.2	Batch ID: W8K1076	Instr: AA06		Prepared: 11	/20/18 14:07		Analyst: mcs	
TKN, Soluble			0.050	0.10	mg/l	1x1	11/23/18 11:46	
Method: EPA 353.2	Batch ID: W8L0442	Instr: AA01		Prepared: 12	2/06/18 22:38		Analyst: ymt	
NO2+NO3 as N		ND	0.083	0.20	mg/l	1x1	12/12/18 17:52	
		Instr: AA01		Propared: 11	/29/18 15:18		Analyst: YMT	
Method: EDA 365 1		IIISU. AAUT		Fiepareu.	/25/10 15.10			0-
Method: EPA 365.1 Phosphorus as P, Total	Batch ID: W8K1512	0.075	0.0014	0.010	mg/l	1x1	12/18/18 17:19	0-
Phosphorus as P, Total			0.0014		-	1x1		0-
Phosphorus as P, Total         Method: EPA 365.1         Phosphorus, Dissolved         Sample:       TMDL-R1	Batch ID: W8K1512 Batch ID: W8K1598	Instr: AA01	0.0014	0.010 <b>Prepared:</b> 11 0.010	/30/18 14:30 mg/l	1x1	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara	0-1
Phosphorus as P, Total         Method: EPA 365.1         Phosphorus, Dissolved         Sample:       TMDL-R1         8K20056-02 (Water)		Instr: AA01	0.0014	<b>Prepared:</b> 11 0.010	/30/18 14:30 mg/l Sa	1x1 ampled: <sup>-</sup>	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara	<mark>O-</mark> I a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte	Batch ID: W8K1598	Instr: AA01 0.026 Result		Prepared: 11	/30/18 14:30 mg/l	1x1	Analyst: YMT 12/18/18 18:08	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte onventional Chemistry/Physical Parameter	Batch ID: W8K1598	Instr: AA01 0.026 Result	0.0014	Prepared: 11 0.010 MRL	/30/18 14:30 mg/l Sa	1x1 ampled: <sup>-</sup>	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Driventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC	Batch ID: W8K1598	Instr: AA01 0.026 Result	0.0014	Prepared: 11 0.010 MRL	/30/18 14:30 mg/l Sa Units	1x1 ampled: <sup>-</sup>	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Driventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC	Batch ID: W8K1598	Instr: AA01 0.026 Result	0.0014	Prepared: 11 0.010 MRL	/30/18 14:30 mg/l Sa Units	1x1 ampled: <sup>-</sup>	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	Batch ID: W8K1598	Instr: AA01 0.026 Result Instr: [CALC]	0.0014	Prepared: 11 0.010 MRL Prepared: 12	/30/18 14:30 mg/l Sa Units 2/06/18 22:38 mg/l	1x1 ampled: 1 Dil	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed Analyst: mcs	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	Batch ID: W8K1598 rs by APHA/EPA/ASTM Methods Batch ID: [CALC]	Instr: AA01 0.026 Result Instr: [CALC]	0.0014	Prepared: 11           0.010           MRL           Prepared: 12           0.30	/30/18 14:30 mg/l Sa Units 2/06/18 22:38 mg/l	1x1 ampled: 1 Dil	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed Analyst: mcs 12/12/18 17:56	O- a M/ Kellie
Phosphorus as P, Total  Method: EPA 365.1  Phosphorus, Dissolved  Sample: TMDL-R1 8K20056-02 (Water)  Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen  Method: _Various	Batch ID: W8K1598 rs by APHA/EPA/ASTM Methods Batch ID: [CALC]	Instr: AA01 0.026 Result Instr: [CALC] 1 Instr: [CALC]	0.0014	Prepared: 11 0.010 MRL Prepared: 12 0.30 Prepared: 12 0.20	2/30/18 14:30 mg/l Sa Units 2/06/18 22:38 mg/l	1x1 impled: Dil 1x1	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed Analyst: mcs 12/12/18 17:56 Analyst: mcs	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	Batch ID: W8K1598 rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Instr: AA01 0.026 Result Instr: [CALC] 	0.0014	Prepared: 11 0.010 MRL Prepared: 12 0.30 Prepared: 12 0.20	2/30/18 14:30 mg/l Sa Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l	1x1 impled: Dil 1x1	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed Analyst: mcs 12/12/18 17:56 Analyst: mcs 12/12/18 17:56	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Analyte Dissolved Nitrogen Method: -Various Nitrogen, Total Method: EPA 351.2	Batch ID: W8K1598 rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Instr: AA01 0.026 Result Instr: [CALC] 1.1 Instr: AA06	0.0014	Prepared: 11           0.010           MRL           Prepared: 12           0.30           Prepared: 12           0.20           Prepared: 11           0.10	2/30/18 14:30 mg/l Sa Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 2/06/18 14:04	1x1 impled: : Dil 1x1 1x1	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed Analyst: mcs 12/12/18 17:56 Analyst: mcs 12/12/18 17:56 Analyst: mcs	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Noventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	Batch ID: W8K1598  rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075	Instr: AA01 0.026 Result Instr: [CALC] 	0.0014	Prepared: 11           0.010           MRL           Prepared: 12           0.30           Prepared: 12           0.20           Prepared: 11           0.10	2/30/18 14:30 mg/l Sa Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04 mg/l	1x1 impled: : Dil 1x1 1x1	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed Analyst: mcs 12/12/18 17:56 Analyst: mcs 12/12/18 17:56 Analyst: mcs 11/23/18 11:46	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Driventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	Batch ID: W8K1598  rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075	Instr: AA01 0.026 Result Instr: [CALC] 	0.0014 MDL	Prepared: 11           0.010           MRL           Prepared: 12           0.30           Prepared: 12           0.20           Prepared: 11           0.10           Prepared: 11	2/06/18 14:30 mg/l Sa Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04 mg/l 1/20/18 14:07 mg/l	1x1 impled: - 1x1 1x1 1x1	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed Analyst: mcs 12/12/18 17:56 Analyst: mcs 12/12/18 17:56 Analyst: mcs 11/23/18 11:46 Analyst: mcs	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Driventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	Batch ID: W8K1598  rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075 Batch ID: W8K1076	Instr: AA01 0.026 Result Instr: [CALC] Instr: [CALC] Instr: [CALC] Instr: AA06 0.37 Instr: AA06 0.27	0.0014 MDL	Prepared: 11 0.010 MRL Prepared: 12 0.30 Prepared: 12 0.20 Prepared: 11 0.10 Prepared: 11 0.10	2/06/18 14:30 mg/l Sa Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04 mg/l 1/20/18 14:07 mg/l	1x1 impled: - 1x1 1x1 1x1	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed Analyst: mcs 12/12/18 17:56 Analyst: mcs 12/12/18 17:56 Analyst: mcs 11/23/18 11:46 Analyst: mcs 11/23/18 11:46	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 N02+NO3 as N	Batch ID: W8K1598  rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075 Batch ID: W8K1076	Instr: AA01 0.026 Result Instr: [CALC] Instr: [CALC] Instr: [CALC] Instr: AA06 0.37 Instr: AA06 0.27 Instr: AA01	0.0014 MDL 0.050 0.050	Prepared: 11           0.010           MRL           Prepared: 12           0.30           Prepared: 12           0.20           Prepared: 11           0.10           Prepared: 11           0.10           Prepared: 12           0.10	/30/18 14:30 mg/l Sa Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04 mg/l 2/06/18 22:38 mg/l	1x1 impled: : 1x1 1x1 1x1 1x1 1x1	Analyst: YMT 12/18/18 18:08 11/19/18 13:45 by Lara Analyzed Analyst: mcs 12/12/18 17:56 Analyst: mcs 12/12/18 17:56 Analyst: mcs 11/23/18 11:46 Analyst: mcs 11/23/18 11:46	O- a M/ Kellie
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 N02+NO3 as N	Batch ID: W8K1598  rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075 Batch ID: W8K1076 Batch ID: W8K1076	Instr: AA01 0.026 Result Instr: [CALC] 	0.0014 MDL 0.050 0.050	Prepared: 11 0.010 MRL Prepared: 12 0.30 Prepared: 12 0.20 Prepared: 11 0.10 Prepared: 11 0.10 Prepared: 12 0.20	/30/18 14:30 mg/l Sa Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04 mg/l 2/06/18 22:38 mg/l	1x1 impled: : 1x1 1x1 1x1 1x1 1x1	Analyst: YMT 12/18/18 18:08	O- a M/ Kellie Qualif
Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 8K20056-02 (Water) Analyte onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N Method: EPA 365.1	Batch ID: W8K1598  rs by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075 Batch ID: W8K1076 Batch ID: W8K1076	Instr: AA01 0.026 Result Instr: [CALC] Instr: [CALC] Instr: AA06 0.37 Instr: AA06 0.37 Instr: AA06 0.37 Instr: AA06 0.27	0.0014 MDL 0.050 0.050 0.083	Prepared: 11 0.010 MRL Prepared: 12 0.30 Prepared: 12 0.20 Prepared: 11 0.10 Prepared: 11 0.10 Prepared: 11 0.20 Prepared: 12 0.20 Prepared: 11 0.10	(J30/18 14:30 mg/l       January     Sa       Units     Sa       Units     Sa       2/06/18 22:38     mg/l       2/06/18 22:38     mg/l       2/06/18 14:04     mg/l       1/20/18 14:07     mg/l       2/06/18 22:38     mg/l       1/20/18 14:07     mg/l       2/06/18 22:38     mg/l	1x1 mpled: 1 1x1 1x1 1x1 1x1 1x1	Analyst: YMT 12/18/18 18:08	O-(



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Project Number: TMDL Study November 2018 P6040555

**Reported:** 01/11/2019 14:53

Project Manager: Kelly Hahs

(Continued)

Sample Results

TMDL-R2

Sampled: 11/19/18 12:00 by Lara M/ Kellie F

8K20056-03 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 12	2/06/18 22:38		Analyst: mcs	
Dissolved Nitrogen		1.5		0.30	mg/l	1x1	12/12/18 17:58	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 12	2/06/18 22:38		Analyst: mcs	
Nitrogen, Total		1.5		0.20	mg/l	1x1	12/12/18 17:58	
Method: EPA 351.2	Batch ID: W8K1075	Instr: AA06		Prepared: 11	1/20/18 14:04		Analyst: mcs	
ТКМ		0.39	0.050	0.10	mg/l	1x1	11/23/18 11:46	
Method: EPA 351.2	Batch ID: W8K1076	Instr: AA06		Prepared: 11	1/20/18 14:07		Analyst: mcs	
TKN, Soluble		0.37	0.050	0.10	mg/l	1x1	11/23/18 11:46	
Method: EPA 353.2	Batch ID: W8L0442	Instr: AA01		Prepared: 12	2/06/18 22:38		Analyst: ymt	
NO2+NO3 as N		1.1	0.083	0.20	mg/l	1x1	12/12/18 17:58	
<b>Method:</b> EPA 365.1	Batch ID: W8K1512	Instr: AA01		Prepared: 11	1/29/18 15:18		Analyst: YMT	
Phosphorus as P, Total		0.31	0.0070	0.050	mg/l	1x5	12/18/18 17:52	O-04
	B-6-6 ID 10/0//1500	L		Dava de 11	-		Associate MAT	
Method: EPA 365.1 Phosphorus, Dissolved	Batch ID: W8K1598	Instr: AA01 0.28	0.0056	0.040	1/30/18 14:30 mg/l	1x4	Analyst: YMT 12/18/18 18:55	O-04
			0.0000	0.010			12,10,10 10100	
Sample: TMDL-R3					Sa	mpled:	11/19/18 11:00 by Lara	a M/ Kellie F
Sample: TMDL-R3 8K20056-04 (Water)					Sa	impled: 1	11/19/18 11:00 by Lara	a M/ Kellie F
		Result	MDL	MRL	Sa Units	mpled: ´ Dil	11/19/18 11:00 by Lara Analyzed	a M/ Kellie F Qualifier
8K20056-04 (Water)	s by APHA/EPA/ASTM Methods	Result	MDL	MRL				
8K20056-04 (Water) Analyte	s by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result						
8K20056-04 (Water) Analyte Conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC					Units		Analyzed	
8K20056-04 (Water) Analyte Conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	Batch ID: [CALC]	Instr: [CALC]		<b>Prepared:</b> 12	Units 2/06/18 22:38 mg/l	Dil	Analyzed Analyst: mcs 12/12/18 17:59	
8K20056-04 (Water) Analyte Conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD ***		Instr: [CALC]		<b>Prepared:</b> 12	Units 2/06/18 22:38	Dil	Analyzed Analyst: mcs	
8K20056-04 (Water) Analyte Conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	Batch ID: [CALC] Batch ID: [CALC]	Instr: [CALC] ND Instr: [CALC]		Prepared: 12 0.30 Prepared: 12 0.20	Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l	Dil 1x1	Analyzed Analyst: mcs 12/12/18 17:59 Analyst: mcs 12/12/18 17:59	
8K20056-04 (Water) Analyte Conventional Chemistry/Physical Parameters Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	Batch ID: [CALC]	Instr: [CALC] ND Instr: [CALC]		Prepared: 12 0.30 Prepared: 12 0.20	Units 2/06/18 22:38 mg/l 2/06/18 22:38	Dil 1x1	Analyzed Analyst: mcs 12/12/18 17:59 Analyst: mcs	
8K20056-04 (Water)         Analyte         Conventional Chemistry/Physical Parameters         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2         TKN	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075	Instr: [CALC] ND Instr: [CALC] ND Instr: AA06 0.083		Prepared: 12 0.30 Prepared: 12 0.20 Prepared: 11 0.10	Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04 mg/l	Dil 1x1 1x1	Analyzed           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59	
8K20056-04 (Water)         Analyte         Conventional Chemistry/Physical Parameters         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC]	Instr: [CALC] ND Instr: [CALC] ND Instr: AA06		Prepared: 12 0.30 Prepared: 12 0.20 Prepared: 11 0.10	Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04	Dil 1x1 1x1	Analyzed           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59           Analyst: mcs	
8K20056-04 (Water)         Analyte         Conventional Chemistry/Physical Parameters         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2         TKN         Method: EPA 351.2         TKN, Soluble	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075 Batch ID: W8K1076	Instr: [CALC] ND Instr: [CALC] ND Instr: AA06 0.083 Instr: AA06 ND	0.050	Prepared: 12 0.30 Prepared: 12 0.20 Prepared: 11 0.10 Prepared: 11 0.10	Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04 mg/l 1/20/18 14:07 mg/l	Dil 1x1 1x1 1x1	Analyzed           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59           Analyst: mcs           11/23/18 11:46           Analyst: mcs           11/23/18 11:46	
8K20056-04 (Water)         Analyte         Conventional Chemistry/Physical Parameters         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2         TKN         Method: EPA 351.2         TKN, Soluble         Method: EPA 353.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075	Instr: [CALC] ND Instr: [CALC] ND Instr: AA06 0.083 Instr: AA06 ND Instr: AA01	0.050	Prepared: 12 0.30 Prepared: 12 0.20 Prepared: 11 0.10 Prepared: 12 0.10 Prepared: 12	Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04 mg/l 1/20/18 14:07 mg/l 2/06/18 22:38	Dil 1x1 1x1 1x1 1x1 1x1	Analyzed           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59           Analyst: mcs           11/23/18 11:46           Analyst: mcs           11/23/18 11:46           Analyst: ymt	
8K20056-04 (Water)         Analyte         Conventional Chemistry/Physical Parameters         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2         TKN         Method: EPA 351.2         TKN, Soluble         Method: EPA 353.2         NO2+NO3 as N	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075 Batch ID: W8K1076 Batch ID: W8L0442	Instr: [CALC] ND Instr: [CALC] ND Instr: AA06 0.083 Instr: AA06 ND Instr: AA01 ND	0.050	Prepared: 12 0.30 Prepared: 12 0.20 Prepared: 11 0.10 Prepared: 11 0.10 Prepared: 12 0.20	Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04 mg/l 1/20/18 14:07 mg/l 2/06/18 22:38 mg/l	Dil 1x1 1x1 1x1	Analyzed           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59           Analyst: mcs           11/23/18 11:46           Analyst: mcs           11/23/18 11:46           Analyst: mcs           11/23/18 11:46           Analyst: mcs           11/23/18 11:46           Analyst: mcs           11/23/18 11:46	
8K20056-04 (Water)         Analyte         Conventional Chemistry/Physical Parameters         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2         TKN         Method: EPA 351.2         TKN, Soluble         Method: EPA 353.2         NO2+NO3 as N         Method: EPA 365.1	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075 Batch ID: W8K1076	Instr: [CALC]	0.050 0.050 0.083	Prepared: 12 0.30 Prepared: 12 0.20 Prepared: 11 0.10 Prepared: 11 0.10 Prepared: 12 0.20 Prepared: 12	Units	Dil 1x1 1x1 1x1 1x1 1x1 1x1	Analyzed         Analyst: mcs         12/12/18 17:59         Analyst: mcs         12/12/18 17:59         Analyst: mcs         12/12/18 17:59         Analyst: mcs         11/23/18 11:46         Analyst: mcs         11/23/18 11:46         Analyst: mcs         11/23/18 11:46         Analyst: ymt         12/12/18 17:59         Analyst: YMT	Qualifier
8K20056-04 (Water)         Analyte         Conventional Chemistry/Physical Parameters         Method: *** DEFAULT SPECIFIC         METHOD ***         Dissolved Nitrogen         Method: _Various         Nitrogen, Total         Method: EPA 351.2         TKN         Method: EPA 351.2         TKN, Soluble         Method: EPA 353.2         NO2+NO3 as N	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W8K1075 Batch ID: W8K1076 Batch ID: W8L0442	Instr: [CALC] ND Instr: [CALC] ND Instr: AA06 0.083 Instr: AA06 ND Instr: AA01 ND	0.050	Prepared: 12 0.30 Prepared: 12 0.20 Prepared: 11 0.10 Prepared: 11 0.10 Prepared: 12 0.20	Units 2/06/18 22:38 mg/l 2/06/18 22:38 mg/l 1/20/18 14:04 mg/l 1/20/18 14:07 mg/l 2/06/18 22:38 mg/l	Dil 1x1 1x1 1x1 1x1 1x1	Analyzed           Analyst: mcs           12/12/18 17:59           Analyst: mcs           12/12/18 17:59           Analyst: mcs           11/23/18 11:46           Analyst: mcs           11/23/18 11:46           Analyst: mcs           11/23/18 11:46           Analyst: mcs           11/23/18 11:46           Analyst: mcs           11/23/18 11:46	

Phosphorus, Dissolved

0.010

0.0014

0.010

mg/l

1x1

O-04

12/18/18 18:14



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study November 2018 P6040555

**Reported:** 01/11/2019 14:53

Project Manager: Kelly Hahs

Quality	Control	Results
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Conventional Chemistry/Physical Parameters by	APHA/EPA/AST	M Methods	;								
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
Batch: W8K1075 - EPA 351.2											
Blank (W8K1075-BLK1)					Prepared: 11/20/18	Analyzed:	11/23/18				
TKN	ND	0.050	0.10	mg/l							
LCS (W8K1075-BS1)					Prepared: 11/20/18	Analvzed:	11/23/18				
TKN	0.938	0.050	0.10	mg/l	1.00		94	90-110			
					D 144/00/40		44 /00 /40				
Matrix Spike (W8K1075-MS1) TKN		<b>(20056-04</b> 0.050	0.10	mg/l	Prepared: 11/20/18 1.00	<b>Analyzed:</b> 0.0832	95	90-110			
	1.00	0.000	0.10	iiig/i	1.00	0.0002	50	50-110			
Matrix Spike Dup (W8K1075-MSD1)		(20056-04			Prepared: 11/20/18	-					
TKN	1.03	0.050	0.10	mg/l	1.00	0.0832	95	90-110	0.2	10	
Batch: W8K1076 - EPA 351.2											
					Bronarod: 11/20/10	Analyzad	11/22/10				
Blank (W8K1076-BLK1) TKN, Soluble	ND	0.050	0.10	mg/l	Prepared: 11/20/18	Analyzed:	11/23/18				
				-							
LCS (W8K1076-BS1)	0.000	0.050	0.40		Prepared: 11/20/18	Analyzed:					
TKN, Soluble	0.930	0.050	0.10	mg/l	1.00		93	90-110			
Matrix Spike (W8K1076-MS1)	Source: 8	(20056-04			Prepared: 11/20/18	Analyzed:	11/23/18				
TKN, Soluble	0.992	0.050	0.10	mg/l	1.00	ND	99	90-110			
Matrix Spike Dup (W8K1076-MSD1)	Source: 8	(20056-04			Prepared: 11/20/18	Analyzod	11/22/18				
TKN, Soluble		0.050	0.10	mg/l	1.00	ND	100		0.8	10	
				0							
Batch: W8K1512 - EPA 365.1											
Blank (W8K1512-BLK1)					Prepared: 11/29/18	Analyzed:	12/18/18				
Phosphorus as P, Total	0.00149	0.0014	0.010	mg/l							J
LCS (W8K1512-BS1)					Prepared: 11/29/18	Analyzed:	12/18/18				
Phosphorus as P, Total	0.0459	0.0014	0.010	mg/l	0.0500	,	92	90-110			
	<b>C</b>	(27014.04			D	A I I	12/10/10				
Matrix Spike (W8K1512-MS1) Phosphorus as P, Total		<b>(27014-04</b> 0 0014	0.010	mg/l	Prepared: 11/29/18 0.0500	0.0309	12/18/18	90-110			
	0.0010	0.0011	01010		0.0000	0.0000		00 110			
Matrix Spike (W8K1512-MS2)		(27014-05			Prepared: 11/29/18	-					
Phosphorus as P, Total	0.0661	0.0014	0.010	mg/l	0.0500	0.0141	104	90-110			
Matrix Spike Dup (W8K1512-MSD1)	Source: 8	(27014-04			Prepared: 11/29/18	Analyzed:	12/18/18				
Phosphorus as P, Total	0.0814	0.0014	0.010	mg/l	0.0500	0.0309	101	90-110	0.5	20	
Matrix Spike Dup (W9K1512 MSD2)	Source: 9	(27014-05			Prepared: 11/29/18	Analyzada	12/10/10				
Matrix Spike Dup (W8K1512-MSD2) Phosphorus as P, Total	0.0657	0.0014	0.010	mg/l	0.0500	0.0141	103	90-110	0.6	20	
· · · · · · · · · · · · · · · · · · ·											
Batch: W8K1598 - EPA 365.1											
Blank (W8K1598-BLK1)					Prepared: 11/30/18	Analyzed:	12/18/18				
Phosphorus, Dissolved	ND	0.0014	0.010	mg/l							
LCS (W8K1598-BS1)					Prepared: 11/30/18	Analyzed	12/18/19				
Phosphorus, Dissolved	0.0481	0.0014	0.010	mg/l	0.0500		96	90-110			
	_			-							
Matrix Spike (W8K1598-MS1)		<b>(20056-01</b>	0.010		Prepared: 11/30/18	-		90-110			
Phosphorus, Dissolved	0.0713	0.0014	0.010	mg/l	0.0500	0.0260	91	30-110			
Matrix Spike (W8K1598-MS2)	Source: 8	(20056-04			Prepared: 11/30/18	Analyzed:	12/18/18				
Phosphorus, Dissolved	0.0611	0.0014	0.010	mg/l	0.0500	0.0102	102	90-110			
3K20056											Page 5 o



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study November 2018 P6040555

**Reported:** 01/11/2019 14:53

(Continued)

Project Manager: Kelly Hahs

/11/2019 14:53

#### Quality Control Results

Conventional Chemistry/Physical Parameters by API	HA/EPA/AST	M Method	ls (Continue	ed)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W8K1598 - EPA 365.1 (Continued)											
Matrix Spike (W8K1598-MS2)	Source: 8	K20056-04		Pre	oared: 11/30/1	8 Analyzed:	12/18/18	3			
Matrix Spike Dup (W8K1598-MSD1)	Source: 8	K20056-01		Pre	oared: 11/30/1	8 Analyzed:	12/18/18	3			
Phosphorus, Dissolved	0.0299	0.0014	0.010	mg/l	0.0500	0.0260	8	90-110	82	20	A-01
Matrix Spike Dup (W8K1598-MSD2)	Source: 8	К20056-04		Pre	oared: 11/30/1	8 Analyzed:	12/18/18	3			
Phosphorus, Dissolved	0.0601	0.0014	0.010	mg/l	0.0500	0.0102	100	90-110	2	20	
Batch: W8L0442 - EPA 353.2											
Blank (W8L0442-BLK1)				Pre	oared: 12/06/1	8 Analyzed:	12/12/18	3			
NO2+NO3 as N		0.083	0.20	mg/l							
LCS (W8L0442-BS1)				Pre	oared: 12/06/1	8 Analyzed:	12/12/18	3			
NO2+NO3 as N	0.936	0.083	0.20	mg/l	1.00		94	90-110			
Matrix Spike (W8L0442-MS1)	Source: 8	К14059-01	RE1	Pre	oared: 12/06/1	8 Analyzed:	12/12/18	3			
NO2+NO3 as N	3.08	0.083	0.20	mg/l	2.00	1.18	95	90-110			
Matrix Spike (W8L0442-MS2)	Source: 8	К14059-02	RE1	Pre	oared: 12/06/1	8 Analyzed:	12/12/18	3			
NO2+NO3 as N	3.07	0.083	0.20	mg/l	2.00	1.13	97	90-110			
Matrix Spike Dup (W8L0442-MSD1)	Source: 8	К14059-01	RE1	Pre	oared: 12/06/1	8 Analyzed:	12/12/18	3			
NO2+NO3 as N	3.06	0.083	0.20	mg/l	2.00	1.18	94	90-110	0.7	20	
Matrix Spike Dup (W8L0442-MSD2)	Source: 8	K14059-02	RE1	Pre	oared: 12/06/1	8 Analyzed:	12/12/18	3			
NO2+NO3 as N	3.08	0.083	0.20	mg/l	2.00	1.13	98	90-110	0.3	20	



FINAL REPORT

Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study November 2018 P6040555

**Reported:** 01/11/2019 14:53

Project Manager: Kelly Hahs

#### Notes and Definitions

ltem	Definition
A-01	Analyst did not spike into the sample.
J	Estimated conc. detected <mrl and="">MDL.</mrl>
O-04	This analysis was performed outside the EPA recommended holding time.
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

#### Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients TMDL (VR Algae TMDL)

Comprehensive Monitoring Program

CHAIN-OF-CUSTO							1_OF1	
					ent V	VEC P	KLABORATOFY19MA01, Project P6040555	
SAMPLING EVENT: SAMPLING DATE:	DECEMBER		018	\$				
	12/10/18 K. HAHS, K. FORTNER							
GRAB SAMPLES								
SAMPLE ID	DATE/TIME	Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen			** FIELD FILTERED	
TMDL-Est	12/10/18 12:00	x	x	x				
TMDL-R1	11:05	x	x	x				
TMDL-R2	10:00	x	x	x				
TMDL-R3	09:00	x	x	X				
-TMDL-R4		-x-	X	-X-			DRY	
TMDL-GL	and a state of the second state	-x-	-X-	-X-			DRY	
ŦMÐL-SA		-x-	X	-X-	ĺ		DRY	
Signature: Print Name: Heven Affiliation: VCW Received Date/Time: 12	Signature: Ech Rul Print Name: Ebusico Rangel Affiliation: Well Lab Received Date/Time: 12-11-18 10:15 An							
Relinquished Date/Time:		Relin	quish	ed Da	te/Tim	e:		
Signature: Cell- Print Name: Essa 13	R-ce Danaac	Signa Print I		: 7	An	r del	nens la pominguez	
	Lato:	Affilia	tion:	1	wb	U-		
Received Date/Time: 12-	11-18 11:34	Recei	ived D	)ate/T	ime:	12	2/11/10 11:34	
Relinguished Date/Time:	·	Reline	quishe	ed Dat	te/Tim	e:	<i>,</i>	

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

16

BL11033



FINAL REPORT

8L11033	Report Date:	1/24/2019
	Received Date:	12/11/2018
TMDL Study December 2018 P6040555	Turnaround Time:	Normal
,	Phones:	(805) 658-4375
	Fax:	(805) 654-3350
Kelly Hahs	P.O. #:	WECKLABORATOFY1 8MA01
Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	
	TMDL Study December 2018 P6040555 Kelly Hahs Ventura County Watershed Protection District 800 South Victoria Avenue	TMDL Study December 2018 P6040555       Turnaround Time:         TMDL Study December 2018 P6040555       Phones:         Phones:       Fax:         Kelly Hahs       P.O. #:         Ventura County Watershed Protection District       Billing Code:         800 South Victoria Avenue       Fax:

### ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 12/11/18 with the Chain-of-Custody document. The samples were received in good condition, at 1.6 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

**Reviewed by:** 

Brandon Gee Operations Manager/Senior PM





FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study December 2018 P6040555

**Reported:** 01/24/2019 15:10

Project Manager: Kelly Hahs

#### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	K. Hahs/ K, Fortner	8L11033-01	Water	12/10/18 12:00	
TMDL-R1	K. Hahs/ K, Fortner	8L11033-02	Water	12/10/18 11:05	
TMDL-R2	K. Hahs/ K, Fortner	8L11033-03	Water	12/10/18 10:00	
TMDL-R3	K. Hahs/ K, Fortner	8L11033-04	Water	12/10/18 09:00	



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study December 2018 P6040555

**Reported:** 01/24/2019 15:10

Project Manager: Kelly Hahs

Sample I	Results
----------	---------

Sample: TMDL-Est					Samp	oled: 12/	10/18 12:00 by K. Hah	s/ K, Fortne
8L11033-01 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Paramete	rs by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/02/19 11:28		Analyst: mcs	
Dissolved Nitrogen		0.78		0.20	mg/l	1x1	01/05/19 11:44	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/02/19 11:24		Analyst: mcs	
Nitrogen, Total		1		0.20	mg/l	1x1	01/05/19 11:44	
Method: EPA 351.2	Batch ID: W9A0027	Instr: AA06		Prepared: 0	1/02/19 11:24		Analyst: mcs	
TKN		0.59	0.050	0.10	mg/l	1x1	01/05/19 11:44	
Method: EPA 351.2	Batch ID: W9A0028	Instr: AA06		Prepared: 0	1/02/19 11:28		Analyst: mcs	
TKN, Soluble		0.34	0.050	0.10	mg/l	1x1	01/05/19 11:44	
Method: EPA 353.2	Batch ID: W8L1484	Instr: AA01		Prepared: 1	2/26/18 10:34		Analyst: het	
NO2+NO3 as N		0.44	0.083	0.20	mg/l	1x1	12/31/18 14:18	
Method: EPA 365.1	Batch ID: W8L1489	Instr: AA01		Prepared: 1	2/26/18 11:09		Analyst: HET	
Phosphorus, Dissolved		0.092	0.0014	0.010	mg/l	1x1	12/28/18 11:18	
Method: EPA 365.1	Batch ID: W8L1653	Instr: AA01		Prepared: 1	2/28/18 13:01		Analyst: HET	
Phosphorus as P, Total		0.14	0.0014	0.010	mg/l	1x1	01/02/19 14:28	
Sample: TMDL-R1					Samp	oled: 12/	10/18 11:05 by K. Hah	s/ K, Fortne
8L11033-02 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
Conventional Chemistry/Physical Paramete	rs by APHA/EPA/ASTM Methods						-	
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/02/19 11:28		Analyst: mcs	
Dissolved Nitrogen		1.6		0.20	mg/l	1x1	01/05/19 11:44	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/02/19 11:24		Analyst: mcs	
Nitrogen, Total		1.8		0.20	mg/l	1x1	01/05/19 11:44	
Method: EPA 351.2	Batch ID: W9A0027	Instr: AA06		Prepared: 0	1/02/19 11:24		Analyst: mcs	
TKN		0.64	0.050	0.10	mg/l	1x1	01/05/19 11:44	
Method: EPA 351.2	Batch ID: W9A0028	Instr: AA06		Prepared: 0	1/02/19 11:28		Analyst: mcs	
TKN, Soluble		0.44	0.050	0.10	mg/l	1x1	01/05/19 11:44	
Method: EPA 353.2	Batch ID: W8L1484	Instr: AA01		Prepared: 1	2/26/18 10:34		Analyst: het	
				•			-	

NO2+NO3 as N

Method: EPA 365.1

Method: EPA 365.1

Phosphorus, Dissolved

Phosphorus as P, Total

0.083

0.0014

0.0028

1.2

0.17

0.16

Instr: AA01

Instr: AA01

Batch ID: W8L1489

Batch ID: W8L1653

0.20

0.010

0.020

M-06

12/31/18 14:20

12/28/18 11:20

01/02/19 14:57

Analyst: HET

Analyst: HET

1x1

1x1

2x1

mg/l

mg/l

mg/l

Prepared: 12/26/18 11:09

Prepared: 12/28/18 13:01



FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Project Number: TMDL Study December 2018 P6040555

**Reported:** 01/24/2019 15:10

Project Manager: Kelly Hahs

(Continued)

Sample Results

TMDL-R2

Sampled: 12/10/18 10:00 by K. Hahs/ K, Fortner

8L11033-03 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/02/19 11:28		Analyst: mcs	
Dissolved Nitrogen		1.1		0.20	mg/l	1x1	01/05/19 11:44	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/02/19 11:24		Analyst: mcs	
Nitrogen, Total		1.1		0.20	mg/l	1x1	01/05/19 11:44	
Method: EPA 351.2	Batch ID: W9A0027	Instr: AA06		Prepared: 0	1/02/19 11:24		Analyst: mcs	
ТКМ		0.29	0.050	0.10	mg/l	1x1	01/05/19 11:44	
Method: EPA 351.2	Batch ID: W9A0028	Instr: AA06		Prepared: 0	1/02/19 11:28		Analyst: mcs	
TKN, Soluble		0.31	0.050	0.10	mg/l	1x1	01/05/19 11:44	
Method: EPA 353.2	Batch ID: W8L1484	Instr: AA01		Prepared: 1	2/26/18 10:34		Analyst: het	
NO2+NO3 as N		0.77	0.083	0.20	mg/l	1x1	12/31/18 13:57	
Method: EPA 365.1	Batch ID: W8L1489	Instr: AA01		Prepared: 1	2/26/18 11:09		Analyst: HET	
Phosphorus, Dissolved		0.14	0.0014	0.010	mg/l	1x1	12/28/18 11:21	
Method: EPA 365.1	Batch ID: W8L1653	Instr: AA01		Prepared: 1	2/28/18 13:01		Analyst: HET	
Phosphorus as P, Total		0.14	0.0014	0.010	mg/l	1x1	01/02/19 14:59	
Sample: TMDL-R3					Sam	oled: 12/	10/18 9:00 by K. Hahs	s/ K, Fortner
8L11033-04 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/02/19 11:28		Analyst: mcs	
Dissolved Nitrogen		0.27		0.20	mg/l	1x1	01/05/19 11:44	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/02/19 11:24		Analyst: mcs	
Nitrogen, Total		0.27		0.20	mg/l	1x1	01/05/19 11:44	
Method: EPA 351.2	Batch ID: W9A0027	Instr: AA06		Prepared: 0	1/02/19 11:24		Analyst: mcs	
TKN		0.071	0.050	0.10	mg/l	1x1	01/05/19 11:44	J

					0		
Method: EPA 351.2	Batch ID: W9A0028	Instr: AA06		Prepared: 0	1/02/19 11:28		Analyst: mcs
TKN, Soluble		0.073	0.050	0.10	mg/l	1x1	01/05/19 11:44
Method: EPA 353.2	Batch ID: W8L1484	Instr: AA01		Prepared: 12	2/26/18 10:34		Analyst: het
NO2+NO3 as N		0.20	0.083	0.20	mg/l	1x1	12/31/18 14:21
Method: EPA 365.1	Batch ID: W8L1489	Instr: AA01		Prepared: 12	2/26/18 11:09		Analyst: HET
Phosphorus, Dissolved		0.026	0.0014	0.010	mg/l	1x1	12/28/18 11:07
Method: EPA 365.1	Batch ID: W8L1653	Instr: AA01		Prepared: 12	2/28/18 13:01		Analyst: HET
Phosphorus as P, Total		0.038	0.0014	0.010	mg/l	1x1	01/02/19 14:37



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study December 2018 P6040555

**Reported:** 01/24/2019 15:10

Project Manager: Kelly Hahs

Conventional Chemistry/Physical Parameters by	APHA/EPA/AST	M Method	s								
					Spike	Source		%REC		RPD	
Analyte Batch: W8L1484 - EPA 353.2	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
				_							
Blank (W8L1484-BLK1) NO2+NO3 as N	ND	0.083	0.20	Pre mg/l	pared: 12/26/18	Analyzed:	12/31/18				
				-							
LCS (W8L1484-BS1) NO2+NO3 as N	0.943	0.083	0.20	Pre mg/l	pared: 12/26/18 1.00	Analyzed:	12/31/18 94	90-110			
			0.20	-							
Matrix Spike (W8L1484-MS1) NO2+NO3 as N	Source: 8	0.083	0.20	Pre mg/l	pared: 12/26/18 2.00	Analyzed: 0.0870	12/31/18 97	90-110			
			0.20	Ū							
Matrix Spike (W8L1484-MS2) NO2+NO3 as N	Source: 8	0.083	0.20	Pre mg/l	pared: 12/26/18 2.00	Analyzed: 0.773	12/31/18 98	90-110			
	2.14	0.000	0.20	mg/i	2.00	0.110	50	50-110			
Matrix Spike Dup (W8L1484-MSD1) NO2+NO3 as N		L07128-01 0.083	0.20	Pre mg/l	pared: 12/26/18 2.00	Analyzed: 0.0870	12/31/18 96	90-110	0.5	20	
	2.01	0.005	0.20	ing/i	2.00	0.0070	90	90-110	0.5	20	
Matrix Spike Dup (W8L1484-MSD2) NO2+NO3 as N	Source: 8	L11033-03 0.083	0.20		pared: 12/26/18 2.00	Analyzed: 0.773	12/31/18 96	90-110	2	20	
NO2+NO3 as N	2.09	0.065	0.20	mg/l	2.00	0.773	90	90-110	Z	20	
Batch: W8L1489 - EPA 365.1											
Blank (W8L1489-BLK1)					pared: 12/26/18	Analyzed:	12/28/18				
Phosphorus, Dissolved	ND	0.0014	0.010	mg/l							
Blank (W8L1489-BLK2)					pared: 12/28/18	Analyzed:	01/02/19				
Phosphorus, Dissolved	• • • • ND	0.0014	0.010	mg/l							
LCS (W8L1489-BS1)				Pre	pared: 12/26/18	Analyzed:	12/28/19				
Phosphorus, Dissolved	0.0520	0.0014	0.010	mg/l	0.0500		104	90-110			
LCS (W8L1489-BS2)				Pre	pared: 12/28/18	Analyzed:	01/02/19				
Phosphorus, Dissolved	0.0537	0.0014	0.010	mg/l	0.0500		107	90-110			
Matrix Spike (W8L1489-MS1)	Source: 8	L11033-04		Pre	pared: 12/26/18	Analyzed:	12/28/18				
Phosphorus, Dissolved	0.0875	0.0014	0.010	mg/l	0.0500	0.0263	122	90-110			MS-01
Matrix Spike (W8L1489-MS2)	Source: 8	L11033-04		Pre	pared: 12/28/18	Analyzed:	01/02/19				
Phosphorus, Dissolved	0.0924	0.0014	0.010	mg/l	0.0500	0.0263	132	90-110			MS-03
Matrix Spike Dup (W8L1489-MSD1)	Source: 8	L11033-04		Pre	pared: 12/26/18	Analyzed:	12/28/18				
Phosphorus, Dissolved	0.0966	0.0014	0.010	mg/l	0.0500	0.0263	141	90-110	10	20	MS-01
Matrix Spike Dup (W8L1489-MSD2)	Source: 8	L11033-04		Pre	pared: 12/28/18	Analyzed:	01/02/19				
Phosphorus, Dissolved	0.0897	0.0014	0.010	mg/l	0.0500	0.0263	127	90-110	3	20	MS-03
Batch: W8L1653 - EPA 365.1											
Blank (W8L1653-BLK1)				Pre	pared: 12/28/18	Analyzed:	01/02/19				
Phosphorus as P, Total		0.0014	0.010	mg/l							
LCS (W8L1653-BS1)				Pre	pared: 12/28/18	Analyzed:	01/02/19				
Phosphorus as P, Total	0.0537	0.0014	0.010	mg/l	0.0500		107	90-110			
Matrix Spike (W8L1653-MS1)	Source: 8	L11033-01		Pre	pared: 12/28/18	Analyzed:	01/02/19				
Phosphorus as P, Total	0.202	0.0014	0.010	mg/l	0.0500	0.139	126	90-110			MS-02
Matrix Spike (W8L1653-MS2)	Source: 8	L11033-04		Pre	pared: 12/28/18	Analvzed:	01/02/19				
Phosphorus as P, Total		0.0014	0.010	mg/l	0.0500	0.0379	126	90-110			MS-01
Matrix Spike Dup (W8L1653-MSD1)	Source <sup>,</sup> 8	L11033-01		Pre	pared: 12/28/18	Analyzed	01/02/19				
BL11033	234100.0			. 10		,	.,,.				Page 5 of



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study December 2018 P6040555

**Reported:** 01/24/2019 15:10

Project Manager: Kelly Hahs

01/2 1/2019 10110

(Continued)

#### Quality Control Results

Conventional Chemistry/Physical Parameters	by APHA/EPA/AST	M Method	ls (Continue	d)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
Batch: W8L1653 - EPA 365.1 (Continued)											
Matrix Spike Dup (W8L1653-MSD1)	Source: 8	L11033-01		Pre	pared: 12/28/1	8 Analyzed:	01/02/19	)			
Phosphorus as P, Total	0.208	0.0014	0.010	mg/l	0.0500	0.139	138	90-110	3	20	MS-02
Matrix Spike Dup (W8L1653-MSD2)	Source: 8	L11033-04		Pre	pared: 12/28/1	8 Analyzed:	01/02/19	•			
Phosphorus as P, Total	0.103	0.0014	0.010	mg/l	0.0500	0.0379	130	90-110	2	20	MS-01
Batch: W9A0027 - EPA 351.2											
Blank (W9A0027-BLK1)				Pre	pared: 01/02/1	9 Analyzed:	01/05/19	)			
TKN	• • • • • • • • • • • • • • ND	0.050	0.10	mg/l							
LCS (W9A0027-BS1)				Pre	pared: 01/02/1	Result         % REC         Limits         RPD         Limit           2/28/18         Analyzed: 01/02/19 0.0.139         3         20         3         20           2/28/18         Analyzed: 01/02/19 0.0.379         130         90-110         3         20           2/28/18         Analyzed: 01/02/19 0.0.379         130         90-110         2         20           2/02/19         Analyzed: 01/05/19 0.285         0         90-110         2         20           0         Analyzed: 01/05/19 0.285         90-110         2         20           0         Analyzed: 01/05/19 0.285         90-110         10         10           0         Analyzed: 01/05/19 0.285         90-110         0.1         10           0         Analyzed: 01/05/19 0.285         90-110         0.1         10           0         Analyzed: 01/05/19 0.310         90-110         0.1         10           0         Analyzed: 01/05/19 0.310         90-110         1         1					
TKN	0.960	0.050	0.10	mg/l	1.00		96	90-110			
Matrix Spike (W9A0027-MS1)	Source: 8	L11033-03		Pre	pared: 01/02/1	9 Analyzed:	01/05/19	)			
TKN	1.35	0.050	0.10	mg/l	1.00	0.285	106	90-110			
Matrix Spike Dup (W9A0027-MSD1)	Source: 8	L11033-03		Pre	pared: 01/02/1	9 Analyzed:	01/05/19	)			
TKN	1.35	0.050	0.10	mg/l	1.00	0.285	106	90-110	0.1	10	
Batch: W9A0028 - EPA 351.2											
Blank (W9A0028-BLK1)				Pre	pared: 01/02/1	9 Analyzed:	01/05/19	)			
TKN, Soluble	ND	0.050	0.10	mg/l							
LCS (W9A0028-BS1)				Pre	pared: 01/02/1	9 Analyzed:	01/05/19	)			
TKN, Soluble	0.948	0.050	0.10	mg/l	1.00		95	90-110			
Matrix Spike (W9A0028-MS1)	Source: 8	L11033-03		Pre	pared: 01/02/1	9 Analyzed:	01/05/19	9			
TKN, Soluble	1.51	0.050	0.10	mg/l	1.00	0.310	120	90-110			MS-01
Matrix Spike Dup (W9A0028-MSD1)	Source: 8	L11033-03		Pre	pared: 01/02/1	9 Analyzed:	01/05/19	•			
TKN, Soluble	1.28	0.050	0.10	mg/l	1.00	0.310	97	90-110	16	10	MS-01



FINAL REPORT

Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study December 2018 P6040555

**Reported:** 01/24/2019 15:10

Project Manager: Kelly Hahs

#### Notes and Definitions

ltem	Definition
J	Estimated conc. detected <mrl and="">MDL.</mrl>
M-06	Due to the high concentration of analyte inherent in the sample, sample was diluted prior to preparation. The MDL and MRL were raised due to this dilution.
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
MS-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
MS-03	Multiple analyses indicate the percent recovery is out of acceptance limits due to a possible matrix effect.
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

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			Compre	hens	sive	Мо	nito	oring	л у Р	rogram	
CHAIN-OF-CUSTO	DY RE	CORD								1 OF 1	
CLIENT: Ventura Co	ounty W	atershed Pr	otection District (I	Maste	r Agı	reem	ent \	NEC	KLA	BORATOFY19MA01, Project P6040555	)
SAMPLING EVENT:			ANUARY 2	· · ·							
SAMPLING DATE:			0/19							······································	
	Kor	ORTNE	<u>=R</u>			<u> </u>				· · · · · · · · · · · · · · · · · · ·	
GRAB SAMPLES				<u> </u>		1			1		
				Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen				** FIELD FILTERED	
SAMPLE ID		DATE/		₽	Dis	1	<u> </u>		_	NOTES	
TMDL-Est	01/1	0/19	12:00	X	X	X		ļ		· · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·  .  .	
TMDL-R1			11:10	X	x	X					
TMDL-R2			10:10	X	x	x					
TMDL-R3			09:10	x	x	x					
TMDL-R4			08:25	x	Х	x					
TMDL-CL			07:25	x	x	x					
TMDL-SA		1	08:10	X	X	x					
Signature:	- <u> </u>	é	ningga e	Signa	iture:	 	Ì	$\leq$		p	
Print Name: Stevens	Gre	ev		Print	Name			1/1	le le	s Navano	
Affiliation: Vour C	1	. (9		Affilia				Ne	~4c		
Relinquished Date/Time:	15/20	1 810	:@2pm	Recei					<u>1</u> ]]	5/19 102	
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Signature:		2-7		Signa	ture:		فتي	H	M	/	
Print Name:	pe	Navar	1/0	Print I	Name	:			L	cster Abad	
Affiliation: Ule-e	K I	lehos.		Affilia	tion:					helo	in 1
Received Date/Time: 1	15/1	ig 3	46	Recei	ved D	ate/Ti	ime:			1-15-19 15:46 .	2.4"
Relinquished Date/Time:	· ·			Relind	quishe	ed Dat	e/Tim	e:			

(

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):



**FINAL REPORT** 

Work Orders:	9A15047	Report Date:	2/19/2019
		Received Date:	1/15/2019
Project:	TMDL Study Jan. 2019 P6040555	Turnaround Time:	Normal
i lojecu		Phones:	(805) 658-4375
		Fax:	(805) 654-3350
Attn:	Kelly Hahs	P.O. #:	WECKLABORATOFY1 9MA01
Client:	Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	

### ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 1/15/19 with the Chain-of-Custody document. The samples were received in good condition, at 2.4 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

**Reviewed by:** 

Brandon Gee Operations Manager/Senior PM





FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Jan. 2019 P6040555

**Reported:** 02/19/2019 17:42

Project Manager: Kelly Hahs

### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	K, Fortner	9A15047-01	Water	01/10/19 12:00	
TMDL-R1	K, Fortner	9A15047-02	Water	01/10/19 11:10	
TMDL-R2	K, Fortner	9A15047-03	Water	01/10/19 10:10	
TMDL-R3	K, Fortner	9A15047-04	Water	01/10/19 09:10	
TMDL-R4	K, Fortner	9A15047-05	Water	01/10/19 08:25	
TMDL-CL	K, Fortner	9A15047-06	Water	01/10/19 07:25	
TMDL-SA	K, Fortner	9A15047-07	Water	01/10/19 08:10	



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Jan. 2019 P6040555

**Reported:** 02/19/2019 17:42

Project Manager: Kelly Hahs

Sample	Results
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						-		
Sample: TMDL-Est						Samp	oled: 01/10/19 12:00 ł	by K, Fortne
9A15047-01 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
onventional Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 01	/22/19 19:08		Analyst: mcs	
METHOD ***								
Dissolved Nitrogen		0.92		0.20	mg/l	1x1	01/26/19 11:53	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 01	/22/19 19:06		Analyst: mcs	
Nitrogen, Total		1.2		0.20	mg/l	1x1	01/26/19 11:43	
Method: EPA 351.2	Batch ID: W9A1289	Instr: AA06		Prepared: 01	/22/19 19:06		Analyst: mcs	
TKN		0.80	0.050	0.10	mg/l	1x1	01/26/19 11:43	
Method: EPA 351.2	Batch ID: W9A1290	Instr: AA06		Prepared: 01	/22/19 19:08		Analyst: mcs	
TKN, Soluble		0.52	0.050	0.10	mg/l	1x1	01/26/19 11:53	
Method: EPA 353.2	Batch ID: W9A0918	Instr: AA01		Prepared: 01	/16/19 11:50		Analyst: mat	
NO2+NO3 as N		0.40	0.083	0.20	mg/l	1x1	01/23/19 13:03	
Method: EPA 365.1		Inches 0.001		Droporod: 01	/22/10 10:41		Amplyst MAT	
Welliou: EPA 505.1	Batch ID: W9A1347	Instr: AA01 0.12	0.0014	0.010	/23/19 18:41 mg/l	1x1	Analyst: MAT 02/01/19 11:43	
				0.0.0			02/01/10 11110	
Phosphorus as P, Total								
Phosphorus as P, Total         Method: EPA 365.1         Phosphorus, Dissolved         Sample:       TMDL-R1	Batch ID: W9A1348	Instr: AA01	0.0014	<b>Prepared:</b> 01 0.010	/23/19 18:46 mg/l	1x1 Samp	Analyst: MAT 02/01/19 12:40 oled: 01/10/19 11:10 H	oy K, Fortn
Phosphorus as P, Total         Method: EPA 365.1         Phosphorus, Dissolved         Sample:       TMDL-R1         9A15047-02 (Water)	Batch ID: W9A1348	0.077		0.010	mg/l	Samp	02/01/19 12:40	
Phosphorus as P, Total       Method: EPA 365.1       Phosphorus, Dissolved       Sample:     TMDL-R1 9A15047-02 (Water)       Analyte			0.0014 MDL	-			02/01/19 12:40	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte onventional Chemistry/Physical Parameter	ers by APHA/EPA/ASTM Methods	Result	MDL	0.010	mg/l Units	Samp	02/01/19 12:40 bled: 01/10/19 11:10 H Analyzed	-
Phosphorus as P, Total         Method: EPA 365.1         Phosphorus, Dissolved         Sample:       TMDL-R1         9A15047-02 (Water)         Analyte         conventional Chemistry/Physical Parameter         Method: *** DEFAULT SPECIFIC		0.077	MDL	0.010	mg/l	Samp	02/01/19 12:40	-
Phosphorus as P, Total         Method: EPA 365.1         Phosphorus, Dissolved         Sample:       TMDL-R1         9A15047-02 (Water)         Analyte         conventional Chemistry/Physical Parameter         Method: *** DEFAULT SPECIFIC	ers by APHA/EPA/ASTM Methods	Result	MDL	0.010	mg/l Units	Samp	02/01/19 12:40 bled: 01/10/19 11:10 H Analyzed	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC]	MDL	0.010 MRL Prepared: 01 0.20	mg/l Units 1/22/19 19:08 mg/l	Samp Dil	02/01/19 12:40 oled: 01/10/19 11:10 E Analyzed Analyst: mcs 01/26/19 11:53	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	ers by APHA/EPA/ASTM Methods	Result	MDL	0.010 MRL Prepared: 01	mg/l Units 1/22/19 19:08 mg/l	Samp Dil	02/01/19 12:40 oled: 01/10/19 11:10 H Analyzed Analyst: mcs	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result           Instr:         [CALC]           1.3         Instr:           Instr:         [CALC]	MDL	0.010 MRL Prepared: 01 0.20 Prepared: 01 0.20	mg/l Units //22/19 19:08 mg/l //22/19 19:06 mg/l	Samp Dil 1x1	02/01/19 12:40 oled: 01/10/19 11:10 B Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]	0.077           Result           Instr: [CALC]           1.3           Instr: [CALC]           1.4           Instr: AA06	MDL	0.010 MRL Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01	mg/l Units //22/19 19:08 mg/l //22/19 19:06 mg/l	Samp Dil 1x1 1x1	02/01/19 12:40 oled: 01/10/19 11:10 H Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289	Result           Instr:         [CALC]           1.3         1.3           Instr:         [CALC]           1.4         1.4           Instr:         AA06           0.46         0.46	MDL	0.010 MRL Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01 0.20	mg/l Units //22/19 19:08 mg/l //22/19 19:06 mg/l //22/19 19:06 mg/l	Samp Dil 1x1	02/01/19 12:40 oled: 01/10/19 11:10 B Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Analyte Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	0.077           Result           Instr: [CALC]           1.3           Instr: [CALC]           1.4           Instr: AA06           0.46           Instr: AA06	<b>MDL</b>	0.010 MRL Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01	mg/l Units //22/19 19:08 mg/l /22/19 19:06 mg/l /22/19 19:06 mg/l	Samp Dil 1x1 1x1 1x1	02/01/19 12:40 oled: 01/10/19 11:10 B Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43 Analyst: mcs	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289	Result           Instr:         [CALC]           1.3         1.3           Instr:         [CALC]           1.4         1.4           Instr:         AA06           0.46         0.46	MDL	0.010 MRL Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.10	mg/l Units //22/19 19:08 mg/l //22/19 19:06 mg/l //22/19 19:06 mg/l //22/19 19:08 mg/l	Samp Dil 1x1 1x1	02/01/19 12:40 oled: 01/10/19 11:10 B Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289		MDL 0.050 0.050	0.010 MRL Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01	mg/l Units Units U22/19 19:08 mg/l U22/19 19:06 mg/l U22/19 19:06 mg/l U22/19 19:08 mg/l U22/19 19:08 mg/l U22/19 19:08	Samp Dil 1x1 1x1 1x1 1x1	02/01/19 12:40 oled: 01/10/19 11:10 H Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53 Analyst: mat	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289 Batch ID: W9A1290	0.077           Result           Instr: [CALC]           1.3           Instr: [CALC]           1.4           Instr: AA06           0.46           Instr: AA05           0.35	<b>MDL</b>	0.010 MRL Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.10	mg/l Units //22/19 19:08 mg/l //22/19 19:06 mg/l //22/19 19:06 mg/l //22/19 19:08 mg/l	Samp Dil 1x1 1x1 1x1	02/01/19 12:40 oled: 01/10/19 11:10 b Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N Method: EPA 365.1	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289 Batch ID: W9A1290		MDL 0.050 0.050	0.010 MRL Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.20 Prepared: 01 Prepared: 01	mg/l Units Units U22/19 19:08 mg/l U22/19 19:06 mg/l U22/19 19:06 mg/l U22/19 19:08	Samp Dil 1x1 1x1 1x1 1x1 1x1 1x1	02/01/19 12:40 oled: 01/10/19 11:10 H Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:53 Analyst: mat 01/23/19 13:04 Analyst: MAT	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 N02+NO3 as N	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289 Batch ID: W9A1290 Batch ID: W9A0918	0.077           Result           Instr: [CALC]           1.3           Instr: [CALC]           1.4           Instr: AA06           0.46           Instr: AA06           0.35           Instr: AA01	MDL 0.050 0.050	0.010 MRL Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.20	mg/l Units Units //22/19 19:08 mg/l //22/19 19:06 mg/l //22/19 19:06 mg/l //22/19 19:08 mg/l //10/19 11:50 mg/l	Samp Dil 1x1 1x1 1x1 1x1	02/01/19 12:40 oled: 01/10/19 11:10 H Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:53	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-R1 9A15047-02 (Water) Analyte Onventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: LVArious Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 N02+NO3 as N Method: EPA 365.1	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289 Batch ID: W9A1290 Batch ID: W9A0918		MDL 0.050 0.050	0.010 MRL Prepared: 01 0.20 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.10 Prepared: 01 0.20 Prepared: 01 0.10 Prepared: 01 0.20 Prepared: 02 Prepared: 02 Prepared: 02 Prepared: 02	mg/l Units Units U22/19 19:08 mg/l U22/19 19:06 mg/l U22/19 19:06 mg/l U22/19 19:08	Samp Dil 1x1 1x1 1x1 1x1 1x1 1x1	02/01/19 12:40 oled: 01/10/19 11:10 H Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:53 Analyst: mat 01/23/19 13:04 Analyst: MAT	oy K, Fortna Qualifi

# WECK LABORATORIES, INC.

# **Certificate of Analysis**

**FINAL REPORT** 

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Jan. 2019 P6040555

**Reported:** 02/19/2019 17:42

Project Manager: Kelly Hahs

(Continued)

Sample Results

Sample:	TMDL-R2						Sam	oled: 01/10/19 10:10 b	y K, Fortner
	9A15047-03 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional	Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/22/19 19:08		Analyst: mcs	
METHOD ***									
Dissolved	Nitrogen		0.77		0.20	mg/l	1x1	01/26/19 11:53	
Method: _Va	rious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/22/19 19:06		Analyst: mcs	
Nitrogen,	Total		0.80		0.20	mg/l	1x1	01/26/19 11:43	
Method: EPA	351.2	Batch ID: W9A1289	Instr: AA06		Prepared: 0	1/22/19 19:06		Analyst: mcs	
TKN			0.23	0.050	0.10	mg/l	1x1	01/26/19 11:43	
Method: EPA	351.2	Batch ID: W9A1290	Instr: AA06		Prepared: 0	1/22/19 19:08		Analyst: mcs	
TKN, Solu	ble		0.20	0.050	0.10	mg/l	1x1	01/26/19 11:53	
Method: EPA	353.2	Batch ID: W9A0918	Instr: AA01		Prepared: 0	1/16/19 11:50		Analyst: mat	
NO2+NO3	as N		0.57	0.083	0.20	mg/l	1x1	01/23/19 13:05	
Method: EPA	365.1	Batch ID: W9A1347	Instr: AA01		Prepared: 0	1/23/19 18:41		Analyst: MAT	
Phosphor	us as P, Total		0.038	0.0014	0.010	mg/l	1x1	02/01/19 11:57	
Method: EPA	365.1	Batch ID: W9A1348	Instr: AA01		Prepared: 0	1/23/19 18:46		Analyst: MAT	
Phosphor	us, Dissolved		0.034	0.0014	0.010	mg/l	1x1	02/01/19 12:35	
Sample:	TMDL-R3						Sam	pled: 01/10/19 9:10 b	y K, Fortner
	9A15047-04 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional	Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/22/19 19:08		Analyst: mcs	
METHOD ***									
Dissolved	Nitrogen		0.31		0.20	mg/l	1x1	01/26/19 11:53	
Method: _Va	rious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/22/19 19:06		Analyst: mcs	

0.46

0.15

ND

0.31

0.050

0.050

0.083

Instr: AA06

Instr: AA06

Instr: AA01

Batch ID: W9A1289

Batch ID: W9A1290

Batch ID: W9A0918

01/23/19 12:41	
Analyst: MAT	
02/01/19 12:01	
	Analyst: MAT

01/26/19 11:43

01/26/19 11:43

01/26/19 11:53

Analyst: mcs

Analyst: mcs

Analyst: mat

Nitrogen, Total

Method: EPA 351.2

Method: EPA 351.2

TKN, Soluble

Method: EPA 353.2

NO2+NO3 as N

TKN

0.20

0.10

0.10

0.20

0.010

0.010

mg/l

mg/l

mg/l

mg/l

mg/l

mg/l

Prepared: 01/22/19 19:06

Prepared: 01/22/19 19:08

Prepared: 01/16/19 11:50

Prepared: 01/23/19 18:41

Prepared: 01/23/19 18:46

1x1

1x1

1x1

1x1

# WECK LABORATORIES, INC.

# Certificate of Analysis

FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Jan. 2019 P6040555

**Reported:** 02/19/2019 17:42

Project Manager: Kelly Hahs

(Continued)

Sample Results

Sample: TMDL-R4						Sam	pled: 01/10/19 8:25 b	by K, Fortner
9A15047-05 (Water)	)							
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional Chemistry/Physical Para	ameters by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 01,	/22/19 19:08		Analyst: mcs	
METHOD ***								
Dissolved Nitrogen		0.54		0.20	mg/l	1x1	01/26/19 11:53	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 01,	/22/19 19:06		Analyst: mcs	
Nitrogen, Total		0.72		0.20	mg/l	1x1	01/26/19 11:43	
Method: EPA 351.2	Batch ID: W9A1289	Instr: AA06		Prepared: 01,	/22/19 19:06		Analyst: mcs	
TKN		0.27	0.050	0.10	mg/l	1x1	01/26/19 11:43	
Method: EPA 351.2	Batch ID: W9A1290	Instr: AA06		Prepared: 01,	/22/19 19:08		Analyst: mcs	
TKN, Soluble		0.094	0.050	0.10	mg/l	1x1	01/26/19 11:53	J
Method: EPA 353.2	Batch ID: W9A0918	Instr: AA01		Prepared: 01,	/16/10 11.50		Analyst: mat	
NO2+NO3 as N	Batti ID. W9A0918	0.45	0.083	0.20	mg/l	1x1	01/23/19 13:06	
					Ū			
Method: EPA 365.1 Phosphorus as P, Total	Batch ID: W9A1347	Instr: AA01	0.0014	Prepared: 01, 0.010	/23/19 18:41 mg/l	1x1	Analyst: MAT 02/01/19 12:03	
Filosphorus as F, Total		0.030	0.0014	0.010	шgл		02/01/19 12:03	
Method: EPA 365.1	Batch ID: W9A1348	Instr: AA01		Prepared: 01,	/23/19 18:46		Analyst: MAT	
Phosphorus, Dissolved		0.025	0.0014	0.010	ma/l	1x1	02/01/19 12:45	
Phosphorus, Dissolved		0.025	0.0014	0.010	mg/l	1x1	02/01/19 12:45	
Phosphorus, Dissolved Sample: TMDL-CL 9A15047-06 (Water)	)	0.025	0.0014	0.010	mg/l		02/01/19 12:45 pled: 01/10/19 7:25 b	oy K, Fortner
Sample: TMDL-CL	)	0.025 Result	0.0014 MDL	0.010 MRL	mg/l			oy K, Fortner <b>Qualifier</b>
Sample: TMDL-CL 9A15047-06 (Water) Analyte	) ameters by APHA/EPA/ASTM Methods				_	Sam	pled: 01/10/19 7:25 t	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC					Units	Sam	pled: 01/10/19 7:25 t	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD ***	ameters by APHA/EPA/ASTM Methods	Result Instr: [CALC]		MRL Prepared: 01,	Units /22/19 19:08	Sam Dil	pled: 01/10/19 7:25 b Analyzed Analyst: mcs	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC	ameters by APHA/EPA/ASTM Methods	Result		MRL	Units	Sam	pled: 01/10/19 7:25 b Analyzed	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	ameters by APHA/EPA/ASTM Methods	Result           Instr:         [CALC]		MRL Prepared: 01, 0.20 Prepared: 01,	Units /22/19 19:08 mg/l	Sam Dil 1x1	pled: 01/10/19 7:25 b Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result Instr: [CALC] 0.48		MRL Prepared: 01, 0.20	Units /22/19 19:08 mg/l	Sam Dil	pled: 01/10/19 7:25 b Analyzed Analyst: mcs 01/26/19 11:53	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result           Instr:         [CALC]		MRL Prepared: 01, 0.20 Prepared: 01,	Units /22/19 19:08 mg/l /22/19 19:06 mg/l	Sam Dil 1x1	pled: 01/10/19 7:25 b Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result           Instr: [CALC]           0.48           Instr: [CALC]           0.56		MRL Prepared: 01, 0.20 Prepared: 01, 0.20	Units /22/19 19:08 mg/l /22/19 19:06 mg/l	Sam Dil 1x1	pled: 01/10/19 7:25 b Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Result           Instr: [CALC]           0.48           Instr: [CALC]           0.56           Instr: AA06	MDL	MRL Prepared: 01, 0.20 Prepared: 01, 0.20 Prepared: 01, 0.10	Units /22/19 19:08 mg/l /22/19 19:06 mg/l /22/19 19:06 mg/l	Sam Dil 1x1 1x1	pled: 01/10/19 7:25 k Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289	Result           Instr: [CALC]           0.48           Instr: [CALC]           0.56           Instr: AA06           0.56	MDL	MRL Prepared: 01, 0.20 Prepared: 01, 0.20 Prepared: 01,	Units /22/19 19:08 mg/l /22/19 19:06 mg/l /22/19 19:06 mg/l	Sam Dil 1x1 1x1	pled: 01/10/19 7:25 k Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289 Batch ID: W9A1290	Result           Instr: [CALC]	<b>MDL</b>	MRL Prepared: 01, 0.20 Prepared: 01, 0.20 Prepared: 01, 0.10 Prepared: 01, 0.10	Units /22/19 19:08 mg/l /22/19 19:06 mg/l /22/19 19:06 mg/l /22/19 19:08 mg/l	Sam Dil 1x1 1x1 1x1	pled: 01/10/19 7:25 k Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte onventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289	Result           Instr: [CALC]           0.48           Instr: [CALC]           0.56           Instr: AA06           0.56           Instr: AA06	<b>MDL</b>	MRL Prepared: 01, 0.20 Prepared: 01, 0.20 Prepared: 01, 0.10 Prepared: 01,	Units /22/19 19:08 mg/l /22/19 19:06 mg/l /22/19 19:06 mg/l /22/19 19:08 mg/l	Sam Dil 1x1 1x1 1x1	pled: 01/10/19 7:25 k Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43 Analyst: mcs	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289 Batch ID: W9A1290 Batch ID: W9A0918	Result           Instr:         [CALC]           0.48         Instr:           Instr:         [CALC]           0.56         Instr:           Instr:         AA06           0.56         0.48           Instr:         AA06           0.56         Instr:           Instr:         AA06           0.56         ND	<b>MDL</b> 0.050 0.050	MRL Prepared: 01, 0.20 Prepared: 01, 0.20 Prepared: 01, 0.10 Prepared: 01, 0.10 Prepared: 01, 0.20	Units /22/19 19:08 mg/l /22/19 19:06 mg/l /22/19 19:06 mg/l /22/19 19:08 mg/l /16/19 11:50 mg/l	Sam Dil 1x1 1x1 1x1 1x1	pled: 01/10/19 7:25 k Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53 Analyst: mat 01/23/19 13:08	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte onventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N Method: EPA 365.1	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289 Batch ID: W9A1290	Result           Instr:         [CALC]	MDL 0.050 0.050 0.083	MRL           Prepared: 01,           0.20           Prepared: 01,           0.20           Prepared: 01,           0.10           Prepared: 01,           0.10           Prepared: 01,           0.10           Prepared: 01,           0.10           Prepared: 01,           0.20	Units /22/19 19:08 mg/l /22/19 19:06 mg/l /22/19 19:06 mg/l /22/19 19:08 mg/l /16/19 11:50 mg/l /23/19 18:41	Sam Dil 1x1 1x1 1x1 1x1 1x1 1x1	pled: 01/10/19 7:25 k Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53 Analyst: mat 01/23/19 13:08 Analyst: MAT	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte conventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N Method: EPA 365.1 Phosphorus as P, Total	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289 Batch ID: W9A1290 Batch ID: W9A0918 Batch ID: W9A1347	Result           Instr:         [CALC]           0.48         Instr:           Instr:         [CALC]           0.56         Instr:           Instr:         AA06           0.56         Instr:           Instr:         AA06           Instr:         AA06           Instr:         AA06           Instr:         AA06           Instr:         AA06           Instr:         AA06           Instr:         AA01           Instr:         AA01           O.078         O.078	<b>MDL</b> 0.050 0.050	MRL Prepared: 01, 0.20 Prepared: 01, 0.20 Prepared: 01, 0.10 Prepared: 01, 0.10 Prepared: 01, 0.20 Prepared: 01, 0.10 Prepared: 01, 0.10	Units /22/19 19:08 mg/l /22/19 19:06 mg/l /22/19 19:06 mg/l /22/19 19:08 mg/l /16/19 11:50 mg/l /23/19 18:41 mg/l	Sam Dil 1x1 1x1 1x1 1x1	pled: 01/10/19 7:25 k Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:53 Analyst: mat 01/23/19 13:08 Analyst: MAT 02/01/19 12:11	-
Sample:       TMDL-CL         9A15047-06 (Water)         Analyte         conventional Chemistry/Physical Para         Method:       *** DEFAULT SPECIFIC         METHOD ***       Dissolved Nitrogen         Method:       _Various         Mitrogen, Total	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289 Batch ID: W9A1290 Batch ID: W9A0918	Result           Instr:         [CALC]	MDL 0.050 0.050 0.083 0.0014	MRL Prepared: 01, 0.20 Prepared: 01, 0.20 Prepared: 01, 0.10 Prepared: 01, 0.10 Prepared: 01, 0.20 Prepared:	Units /22/19 19:08 mg/l /22/19 19:06 mg/l /22/19 19:06 mg/l /22/19 19:08 mg/l /16/19 11:50 mg/l /23/19 18:41 mg/l	Sam Dil 1x1 1x1 1x1 1x1 1x1 1x1 1x1	pled: 01/10/19 7:25 k Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53 Analyst: mat 01/23/19 13:08 Analyst: MAT 02/01/19 12:11	-
Sample: TMDL-CL 9A15047-06 (Water) Analyte onventional Chemistry/Physical Para Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: LVarious Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N Method: EPA 365.1 Phosphorus as P, Total	ameters by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9A1289 Batch ID: W9A1290 Batch ID: W9A0918 Batch ID: W9A1347	Result           Instr:         [CALC]           0.48         Instr:           Instr:         [CALC]           0.56         Instr:           Instr:         AA06           0.56         Instr:           Instr:         AA06           Instr:         AA06           Instr:         AA06           Instr:         AA06           Instr:         AA06           Instr:         AA06           Instr:         AA01           Instr:         AA01           O.078         O.078	MDL 0.050 0.050 0.083	MRL Prepared: 01, 0.20 Prepared: 01, 0.20 Prepared: 01, 0.10 Prepared: 01, 0.10 Prepared: 01, 0.20 Prepared: 01, 0.10 Prepared: 01, 0.10	Units /22/19 19:08 mg/l /22/19 19:06 mg/l /22/19 19:06 mg/l /22/19 19:08 mg/l /16/19 11:50 mg/l /23/19 18:41 mg/l	Sam Dil 1x1 1x1 1x1 1x1 1x1 1x1	pled: 01/10/19 7:25 k Analyzed Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:43 Analyst: mcs 01/26/19 11:53 Analyst: mcs 01/26/19 11:53 Analyst: mat 01/23/19 13:08 Analyst: MAT 02/01/19 12:11	



FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Jan. 2019 P6040555

**Reported:** 02/19/2019 17:42

Project Manager: Kelly Hahs

(Continued)

#### Sample Results

	-								
Sample: TI	MDL-SA						Sam	pled: 01/10/19 8:10 b	y K, Fortner
9/	A15047-07 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional Chen	nistry/Physical Parameters by	APHA/EPA/ASTM Methods							
Method: *** DEFA METHOD ***	AULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/22/19 19:08		Analyst: mcs	
Dissolved Nitre	ogen		0.27		0.20	mg/l	1x1	01/26/19 11:53	
Method: _Various		Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	1/22/19 19:06		Analyst: mcs	
Nitrogen, Total			0.42		0.20	mg/l	1x1	01/26/19 11:43	
Method: EPA 351	.2	Batch ID: W9A1289	Instr: AA06		Prepared: 0	1/22/19 19:06		Analyst: mcs	
TKN			0.21	0.050	0.10	mg/l	1x1	01/26/19 11:43	
Method: EPA 351	.2	Batch ID: W9A1290	Instr: AA06		Prepared: 0	1/22/19 19:08		Analyst: mcs	
TKN, Soluble			0.064	0.050	0.10	mg/l	1x1	01/26/19 11:53	J
Method: EPA 353	.2	Batch ID: W9A0918	Instr: AA01		Prepared: 0	1/16/19 11:50		Analyst: mat	
NO2+NO3 as N	•		0.21	0.083	0.20	mg/l	1x1	01/23/19 13:09	
Method: EPA 365	.1	Batch ID: W9A1347	Instr: AA01		Prepared: 0	1/23/19 18:41		Analyst: MAT	
Phosphorus as	s P, Total		0.078	0.0014	0.010	mg/l	1x1	02/01/19 12:39	
Method: EPA 365	.1	Batch ID: W9A1348	Instr: AA01		Prepared: 0	1/23/19 18:46		Analyst: MAT	
Phosphorus, D	Dissolved		0.062	0.0014	0.010	mg/l	1x1	02/01/19 12:48	



FINAL REPORT

#### Ventura County Watershed Protection District

**Quality Control Results** 

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Jan. 2019 P6040555

**Reported:** 02/19/2019 17:42

Project Manager: Kelly Hahs

Conventional Chemistry/Physical Parameters by API	HA/EPA/AST	M Methods	;								
Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifie
atch: W9A0918 - EPA 353.2	Result	WIDL	WINL	Units	LEVEI	Result	JOILEC	LIIIIUS	Νřυ	Linit	Quanfie
Blank (W9A0918-BLK1)				Pi	repared: 01/16/19	Analyzed (	)1/23/19				
NO2+NO3 as N	ND	0.083	0.20	mg/l			.,,,				
LCS (W9A0918-BS1)				Pi	repared: 01/16/19	Analyzed: (	1/23/19				
NO2+NO3 as N	1.01	0.083	0.20	mg/l	1.00	,	101	90-110			
Matrix Spike (W9A0918-MS1)	Source: 9	A15047-04		Pi	repared: 01/16/19	Analyzed: (	)1/23/19				
NO2+NO3 as N		0.083	0.20	mg/l	2.00	0.314	98	90-110			
Matrix Spike (W9A0918-MS2)	Source: 9	A15077-03		Pr	repared: 01/16/19	Analyzed: (	)1/23/19				
NO2+NO3 as N		0.083	0.20	mg/l	2.00	0.227	98	90-110			
Matrix Spike Dup (W9A0918-MSD1)	Source: 9	A15047-04		Pr	repared: 01/16/19	Analyzed: (	)1/23/19				
NO2+NO3 as N		0.083	0.20	mg/l	2.00	0.314	98	90-110	0	20	
Matrix Spike Dup (W9A0918-MSD2)	Source: 9	A15077-03		Pi	repared: 01/16/19	Analyzed	)1/23/19				
NO2+NO3 as N		0.083	0.20	mg/l	2.00	0.227	98	90-110	0	20	
atch: W9A1289 - EPA 351.2											
Blank (W9A1289-BLK1)				P	repared: 01/22/19	Analyzed (	1/26/19				
TKN		0.050	0.10	mg/l	-cparca. 01/22/13	, maryzeu. (	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
LCS (W9A1289-BS1)				Pi	repared: 01/22/19	Analyzed: (	1/26/19				
TKN	0.988	0.050	0.10	mg/l	1.00	/maryzea.	99	90-110			
Matrix Spike (W9A1289-MS1)	Source: 9	A15047-03		P	repared: 01/22/19	Analyzed: (	1/26/19				
TKN		0.050	0.10	mg/l	1.00	0.227	101	90-110			
Matrix Spike Dup (W9A1289-MSD1)	Source: 9	A15047-03		Pi	repared: 01/22/19	Analyzed (	1/26/19				
TKN		0.050	0.10	mg/l	1.00	0.227	107	90-110	5	10	
atch: W9A1290 - EPA 351.2											
Blank (W9A1290-BLK1)				P	repared: 01/22/19	Analyzed (	1/26/19				
TKN, Soluble	ND	0.050	0.10	mg/l	repared. 01/22/15	Analyzeu.	,,,20,13				
LCE (MOA1200 BE1)				D	remarked: 01/22/10	Analyzada	1/26/10				
LCS (W9A1290-BS1) TKN, Soluble	0.996	0.050	0.10	mg/l	repared: 01/22/19 1.00	Analyzed: 0	100	90-110			
				-							
Matrix Spike (W9A1290-MS1) TKN, Soluble		A15047-03 0.050	0.10	Pr mg/l	repared: 01/22/19 1.00						
			-								
Matrix Spike Dup (W9A1290-MSD1) TKN, Soluble	Source: 9	A15047-03 0.050	0.10	Pr mg/l	repared: 01/22/19 1.00	Analyzed: 0 0.196	01/26/19 116	90-110	8	10	MS-0
									-	-	
atch: W9A1347 - EPA 365.1											
Blank (W9A1347-BLK1) Phosphorus as P, Total	0.00163	0.0014	0.010	Pı mg/l	repared: 01/23/19	Analyzed: (	02/01/19				
·	0.00100	5.0014	0.010								
LCS (W9A1347-BS1) Phosphorus as P, Total	0.0512	0.0014	0.010	Pı mg/l	repared: 01/23/19 0.0500	Analyzed: (	<b>02/01/19</b> 102	90-110			
·	0.0012	0.0014	0.010	ing/i	0.0000		102	00-110			
		A15047-01 0.0014	0.010	Pr mg/l	repared: 01/23/19 0.0500	Analyzed: 0 0.122					Meior
Matrix Spike (W9A1347-MS1)		0.0014	0.010	110/1	0.0500	0.122	112	90-110			MS-02
Phosphorus as P, Total	0.178	0.0011	01010								
• • •	Source: 9	<b>A15047-03</b> 0.0014	0.010	-	repared: 01/23/19 0.0500	Analyzed: ( 0.0378	<b>02/01/19</b> 128	90-110			MS-0 <sup>7</sup>



**FINAL REPORT** 

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Jan. 2019 P6040555

Reported:

Project Manager: Kelly Hahs

02/19/2019 17:42

(Continued)

#### **Quality Control Results**

Conventional Chemistry/Physical Parameters by APH	IA/EPA/AST	M Methods	(Continue	ed)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W9A1347 - EPA 365.1 (Continued)											
Matrix Spike (W9A1347-MS2)	Source: 9	A15047-03		Prep	ared: 01/23/1	9 Analyzed:	02/01/1	9			
Matrix Spike Dup (W9A1347-MSD1)	Source: 9	A15047-01		Prep	ared: 01/23/1	9 Analyzed:	02/01/19	9			
Phosphorus as P, Total	0.179	0.0014	0.010	mg/l	0.0500	0.122	114	90-110	0.6	20	MS-02
Matrix Spike Dup (W9A1347-MSD2)	Source: 9	A15047-03		Prep	ared: 01/23/1	9 Analyzed:	02/01/1	9			
Phosphorus as P, Total	0.0914	0.0014	0.010	mg/l	0.0500	0.0378	107	90-110	11	20	
Batch: W9A1348 - EPA 365.1											
Blank (W9A1348-BLK1)				Prep	oared: 01/23/1	9 Analyzed:	02/01/1	9			
Phosphorus, Dissolved	0.00196	0.0014	0.010	mg/l		-					J
LCS (W9A1348-BS1)				Prep	oared: 01/23/1	9 Analyzed:	02/01/1	9			
Phosphorus, Dissolved	0.0529	0.0014	0.010	mg/l	0.0500	-	106	90-110			
Matrix Spike (W9A1348-MS1)	Source: 9	A15047-03		Prep	ared: 01/23/1	9 Analyzed:	02/01/1	9			
Phosphorus, Dissolved	0.0874	0.0014	0.010	mg/l	0.0500	0.0335	108	90-110			
Matrix Spike Dup (W9A1348-MSD1)	Source: 9	A15047-03		Prep	oared: 01/23/1	9 Analyzed:	02/01/1	9			
Phosphorus, Dissolved	0.107	0.0014	0.010	mg/l	0.0500	0.0335	147	90-110	20	20	MS-01



FINAL REPORT

Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Jan. 2019 P6040555

**Reported:** 02/19/2019 17:42

Project Manager: Kelly Hahs

#### Notes and Definitions

ltem	Definition
J	Estimated conc. detected <mrl and="">MDL.</mrl>
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
MS-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
١R	Not Reportable
ГIС	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified. All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

Ventura River and Tributaries         Algae, Eutrophic Conditions, and Nutrients TMDL         (VR Algae TMDL)         OBI9048         Comprehensive Monitoring Program										
CHAIN-OF-CUSTO	DY RECORD					-	1 OF 1			
CLIENT: Ventura County Watershed Protection District (Master Agreement WECKLABORATOFY19MA01, Project P6040555)										
SAMPLING EVENT:	FEBRUARY 201		<u>, 'g</u>				D 10101101 1100001, 110ject 10040555)			
SAMPLING DATE: 2/12/19										
SAMPLERS:K.HAHS, K FORTNER										
GRAB SAMPLES			<b>_</b>		r		······			
		Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen			** FIELD FILTERED			
SAMPLE ID	DATE/TIME	Tota	Diss	Nitra			NOTES			
TMDL-Est	2/12/19 12:40	x	x	x						
TMDL-R1	12:00	x	x	x						
TMDL-R2	10:50	x	x	x						
TMDL-R3	10:00	x	x	x		_				
TMDL-R4	09:00	x	x	x						
TMDL-CL	07:30	x	x	x						
TMDL-SA	V 08:25	x	x	x						
		- <b>-</b> -								
Signature:	st. 62-3	Signa	ature:		to	Á	l			
Print Name: Steven	S.F.reer	Print	Name	);		A	a: Alarkano			
Affiliation: VCWP		Affilia	tion:		Ī.	a				
	119/2019 12:24		ived E				efig/19 1224			
Relinquished Date/Time: 7	19/2019 12:24	Relind	quishe	ed Da	te/Tim	8:	,			
Signature:	10	Signa			~~~~		a lune A			
	es Navara	Print I				*	ghrers Deme Gomez			
Affiliation:	- who weres		·	-	6					
Received Date/Time:	2/19/19 3/2		Affiliation: WOUL (9b) Received Date/Time: 2/19/19 /S12							
Relinguished Date/Time:		Relino	quishe	ed Dat	e/Tim	9:				

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Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

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FINAL REPORT

Work Orders:	9B19048	Report Date:	3/20/2019
		Received Date:	2/19/2019
Project:	TMDL Study Feb. 2019 P6040555	Turnaround Time:	Normal
		Phones:	(805) 658-4375
		Fax:	(805) 654-3350
Attn:	Kelly Hahs	P.O. #:	WECKLABORATOFY1 9MA01
Client:	Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	

### ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 2/19/19 with the Chain-of-Custody document. The samples were received in good condition, at 2.0 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Brandon Gee Operations Manager/Senior PM





FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Feb. 2019 P6040555

**Reported:** 03/20/2019 14:18

Project Manager: Kelly Hahs

#### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	K. Hahs, K.Fortner	9B19048-01	Water	02/12/19 12:40	
TMDL-R1	K. Hahs, K.Fortner	9B19048-02	Water	02/12/19 12:00	
TMDL-R2	K. Hahs, K.Fortner	9B19048-03	Water	02/12/19 10:50	
TMDL-R3	K. Hahs, K.Fortner	9B19048-04	Water	02/12/19 10:00	
TMDL-R4	K. Hahs, K.Fortner	9B19048-05	Water	02/12/19 09:00	
TMDL-CL	K. Hahs, K.Fortner	9B19048-06	Water	02/12/19 07:30	
TMDL-SA	K. Hahs, K.Fortner	9B19048-07	Water	02/12/19 08:25	



FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Feb. 2019 P6040555

**Reported:** 03/20/2019 14:18

Project Manager: Kelly Hahs

Sample	Results
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Sample:	TMDL-Est					Sam	pled: 02,	/12/19 12:40 by K. Hał	ns, K.Fortner
	9B19048-01 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional	Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods							
	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 03/	01/19 10:13		Analyst: mcs	
METHOD *** Dissolved			1.2		0.20	mg/l	1x1	03/06/19 13:01	
Method: _Va	rious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 03/	01/19 10.15		Analyst: mcs	
Nitrogen,			1.4		0.20	mg/l	1x1	03/06/19 13:01	
Method: EPA	351.2	Batch ID: W9C0024	Instr: AA06		Prepared: 03/	01/19 10:13		Analyst: mcs	
TKN, Solu	ble		1.2	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA	351.2	Batch ID: W9C0026	Instr: AA06		Prepared: 03/	01/19 10:15		Analyst: mcs	
<b>TKN</b>			1.4	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA	A 353.2	Batch ID: W9B1523	Instr: AA01		Prepared: 02/	27/19 10:39		Analyst: mat	
NO2+NO3	as N		ND	0.083	0.20	mg/l	1x1	02/27/19 20:14	
Method: EPA	A 365.1	Batch ID: W9B1341	Instr: AA01		Prepared: 03/	05/19 12:00		Analyst: mat	
Phosphor	us as P, Total		0.13	0.0028	0.020	mg/l	2x1	03/08/19 16:50	M-06
Method: EPA	A 365.1	Batch ID: W9B1344	Instr: AA01		Prepared: 02/	25/19 10:17		Analyst: mat	
Phosphor	us, Dissolved		0.013	0.0014	0.010	mg/l	1x1	03/08/19 16:24	
Sample:	TMDL-R1					Sam	pled: 02,	/12/19 12:00 by K. Hał	ns, K.Fortner
	9B19048-02 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional	Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods							
	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 03/	01/19 10:13		Analyst: mcs	
METHOD *** Dissolved			2.2		0.20	mg/l	1x1	03/06/19 13:01	
Method: _Va	rious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 03/	01/19 10.15		Analyst: mcs	
Nitrogen,		buten ibt [crite]	<b>2.1</b>		0.20	mg/l	1x1	03/06/19 13:01	
Method: EPA	351.2	Batch ID: W9C0024	Instr: AA06		Prepared: 03/	01/19 10:13		Analyst: mcs	
TKN, Solu			0.20	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA	351.2	Batch ID: W9C0026	Instr: AA06		Prepared: 03/	01/19 10:15		Analyst: mcs	
TKN			0.11	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA	353.2	Batch ID: W9B1523	Instr: AA01		Prepared: 02/	27/19 10:39		Analyst: mat	
NO2+NO3			2.0	0.083	0.20	mg/l	1x1	02/27/19 20:34	
Method: EPA	365.1	Batch ID: W9B1341	Instr: AA01		Prepared: 03/	05/19 12:00		Analyst: mat	
Phosphor	us as P, Total		0.19	0.0028	0.020	mg/l	2x1	03/08/19 16:52	M-06

Prepared: 02/25/19 10:17

mg/l

0.010

Method: EPA 365.1

Phosphorus, Dissolved

0.0014

Instr: AA01

0.044

Batch ID: W9B1344

# WECK LABORATORIES, INC.

# Certificate of Analysis

FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Feb. 2019 P6040555

**Reported:** 03/20/2019 14:18

Project Manager: Kelly Hahs

(Continued)

Sample Results

Sample: TMDL-R2					Sam	pled: 02,	/12/19 10:50 by K. Hah	ns, K.Fortner
9B19048-03 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional Chemistry/Physical Parame	eters by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/01/19 10:13		Analyst: mcs	
METHOD ***								
Dissolved Nitrogen		2.1		0.20	mg/l	1x1	03/06/19 13:01	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/01/19 10:15		Analyst: mcs	
Nitrogen, Total		2.2		0.20	mg/l	1x1	03/06/19 13:01	
Method: EPA 351.2	Batch ID: W9C0024	Instr: AA06		Prepared: 0	3/01/19 10:13		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA 351.2	Batch ID: W9C0026	Instr: AA06		Prepared: 0	3/01/19 10:15		Analyst: mcs	
TKN		0.13	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA 353.2	Batch ID: W9B1523	Instr: AA01		Prepared: 0	2/27/19 10:39		Analyst: mat	
NO2+NO3 as N		2.1	0.083	0.20	mg/l	1x1	02/27/19 20:35	
Method: EPA 365.1	Batch ID: W9B1341	Instr: AA01		Prepared: 0	3/05/19 12:00		Analyst: mat	
Phosphorus as P, Total		0.16	0.0028	0.020	mg/l	2x1	03/08/19 16:53	M-0
Method: EPA 365.1	Batch ID: W9B1344	Instr: AA01		Prepared: 0	2/25/19 10:17		Analyst: mat	
Phosphorus, Dissolved		0.042	0.0014	0.010	mg/l	1x1	03/08/19 16:20	
Sample: TMDL-R3					Sam	pled: 02/	/12/19 10:00 by K. Hah	ns, K.Fortne
' 9B19048-04 (Water)							,	
· · · ·								
Analyte		Result	MDL	MRI	Units	Dil	Analyzed	Qualifie

Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameter	ters by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/01/19 10:13		Analyst: mcs	
METHOD ***								
Dissolved Nitrogen		2.1		0.20	mg/l	1x1	03/06/19 13:01	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/01/19 10:15		Analyst: mcs	
Nitrogen, Total		2.3		0.20	mg/l	1x1	03/06/19 13:01	
Method: EPA 351.2	Batch ID: W9C0024	Instr: AA06		Prepared: 0	3/01/19 10:13		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	03/06/19 13:01	
<b>Method:</b> EPA 351.2	Batch ID: W9C0026	Instr: AA06		Prepared: 0	3/01/19 10:15		Analyst: mcs	
ТКМ		0.20	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA 353.2	Batch ID: W9B1523	Instr: AA01		Prepared: 0	2/27/19 10:39		Analyst: mat	
NO2+NO3 as N		2.1	0.083	0.20	mg/l	1x1	02/27/19 20:17	
Method: EPA 365.1	Batch ID: W9B1341	Instr: AA01		Prepared: 0	3/05/19 12:00		Analyst: mat	
Phosphorus as P, Total		0.17	0.0028	0.020	mg/l	2x1	03/08/19 16:55	M-06
Method: EPA 365.1	Batch ID: W9B1344	Instr: AA01		Prepared: 0	2/25/19 10:17		Analyst: mat	
Phosphorus, Dissolved		0.035	0.0014	0.010	mg/l	1x1	03/08/19 16:27	

# WECK LABORATORIES, INC.

# Certificate of Analysis

FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Feb. 2019 P6040555

**Reported:** 03/20/2019 14:18

Project Manager: Kelly Hahs

(Continued)

Sample Results

Sample:	TMDL-R4					Sam	npled: 02	/12/19 9:00 by K. Hał	ns, K.Fortner
	9B19048-05 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
onventional	Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: *** METHOD ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/01/19 10:13		Analyst: mcs	
Dissolved	Nitrogen		1.8		0.20	mg/l	1x1	03/06/19 13:01	
Method: _Va	rious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/01/19 10:15		Analyst: mcs	
Nitrogen,	Total		1.8		0.20	mg/l	1x1	03/06/19 13:01	
Method: EPA	351.2	Batch ID: W9C0024	Instr: AA06		Prepared: 0	3/01/19 10:13		Analyst: mcs	
TKN, Solul	ble		ND	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA	351.2	Batch ID: W9C0026	Instr: AA06		Prepared: 0	3/01/19 10:15		Analyst: mcs	
TKN			ND	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA	353.2	Batch ID: W9B1523	Instr: AA01		Prepared: 0	2/27/19 10:39		Analyst: mat	
NO2+NO3	as N		1.8	0.083	0.20	mg/l	1x1	02/27/19 20:37	
Method: EPA	365.1	Batch ID: W9B1341	Instr: AA01		Prepared: 0	3/05/19 12:00		Analyst: mat	
Phosphor	us as P, Total		0.22	0.0028	0.020	mg/l	2x1	03/08/19 16:56	M-06
Method: EPA	365.1	Batch ID: W9B1344	Instr: AA01		Prepared: 0	2/25/19 10:17		Analyst: mat	
	us, Dissolved		0.030	0.0014	0.010	mg/l	1x1	03/08/19 16:29	

Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifie
Conventional Chemistry/Physical Parame	ters by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/01/19 10:13		Analyst: mcs	
METHOD ***								
Dissolved Nitrogen		2.4		0.20	mg/l	1x1	03/06/19 13:01	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/01/19 10:15		Analyst: mcs	
Nitrogen, Total		2.8		0.20	mg/l	1x1	03/06/19 13:01	
Method: EPA 351.2	Batch ID: W9C0024	Instr: AA06		Prepared: 0	3/01/19 10:13		Analyst: mcs	
TKN, Soluble		0.90	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA 351.2	Batch ID: W9C0026	Instr: AA06		Prepared: 0	3/01/19 10:15		Analyst: mcs	
ТКМ		1.3	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA 353.2	Batch ID: W9B1523	Instr: AA01		Prepared: 0	2/27/19 10:39		Analyst: mat	
NO2+NO3 as N		1.5	0.083	0.20	mg/l	1x1	02/27/19 20:38	
Method: EPA 365.1	Batch ID: W9B1341	Instr: AA01		Prepared: 0	3/05/19 12:00		Analyst: mat	
Phosphorus as P, Total		0.72	0.011	0.080	mg/l	4x2	03/08/19 17:24	M-06
Method: EPA 365.1	Batch ID: W9B1344	Instr: AA01		Prepared: 0	02/25/19 10:17		Analyst: mat	
Phosphorus, Dissolved		0.095	0.0014	0.010	mg/l	1x1	03/08/19 16:30	



FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Project Number: TMDL Study Feb. 2019 P6040555

**Reported:** 03/20/2019 14:18

Project Manager: Kelly Hahs

(Continued)

Sample Results

TMDL-SA

Sampled: 02/12/19 8:25 by K. Hahs, K.Fortner

9B19048-07 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Paramet	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/01/19 10:13		Analyst: mcs	
		2.6		0.20	mg/l	1x1	03/06/19 13:01	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/01/19 10:15		Analyst: mcs	
Nitrogen, Total		2.8		0.20	mg/l	1x1	03/12/19 11:43	
Method: EPA 351.2	Batch ID: W9C0024	Instr: AA06		Prepared: 0	3/01/19 10:13		Analyst: mcs	
TKN, Soluble		0.11	0.050	0.10	mg/l	1x1	03/06/19 13:01	
Method: EPA 351.2	Batch ID: W9C0026	Instr: AA06		Prepared: 0	3/01/19 10:15		Analyst: mcs	
ТКМ		0.31	0.050	0.10	mg/l	1x1	03/12/19 11:43	
Method: EPA 353.2	Batch ID: W9B1523	Instr: AA01		Prepared: 0	2/27/19 10:39		Analyst: mat	
NO2+NO3 as N		2.5	0.083	0.20	mg/l	1x1	02/27/19 20:39	
Method: EPA 365.1	Batch ID: W9B1341	Instr: AA01		Prepared: 0	3/05/19 12:00		Analyst: mat	
Phosphorus as P, Total		0.47	0.011	0.080	mg/l	2x4	03/08/19 17:27	M-06
Method: EPA 365.1	Batch ID: W9B1344	Instr: AA01		Prepared: 0	2/25/19 10:17		Analyst: mat	
Phosphorus, Dissolved		0.056	0.0014	0.010	mg/l	1x1	03/08/19 16:32	



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

9B19048

Project Number: TMDL Study Feb. 2019 P6040555

**Reported:** 03/20/2019 14:18

Project Manager: Kelly Hahs

Conventional Chemistry/Physical Parameters	s by APHA/EPA/AST	M Method	S								
Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W9B1341 - EPA 365.1	Kesun	MDL	WIKE	Units	Level	Nesun	June	Linits	N D	Linin	Quanner
Blank (W9B1341-BLK1)				Pre	epared: 03/05/19	Analyzed:	03/08/19				
Phosphorus as P, Total	ND	0.0014	0.010	mg/l	.p		,,				
LCS (W9B1341-BS1)				Pre	epared: 03/05/19	Analyzed:	03/08/19				
Phosphorus as P, Total	0.0501	0.0014	0.010	mg/l	0.0500	,	100	90-110			
Matrix Spike (W9B1341-MS1)	Source: 9	B20012-01		Pre	epared: 03/05/19	Analyzed:	03/08/19				
Phosphorus as P, Total	0.0834	0.0014	0.010	mg/l	0.0500	0.0417	83	90-110			MS-01
Matrix Spike (W9B1341-MS2)	Source: 9	B20012-03		Pre	epared: 03/05/19	Analvzed:	03/08/19				
Phosphorus as P, Total		0.0014	0.010	mg/l	0.0500	0.0775	79	90-110			MS-01
Matrix Spike Dup (W9B1341-MSD1)	Source: 9	B20012-01		Pre	epared: 03/05/19	Analyzed:	03/08/19				
Phosphorus as P, Total		0.0014	0.010	mg/l	0.0500	0.0417	83	90-110	0.2	20	MS-01
Matrix Spike Dup (W9B1341-MSD2)	Source: 9	B20012-03		Pre	epared: 03/05/19	Analyzed:	03/08/19				
Phosphorus as P, Total	0.116		0.010	mg/l	0.0500	0.0775	77	90-110	0.9	20	MS-01
Batch: W9B1344 - EPA 365.1											
					1 02/25/40	A	00/00/40				
Blank (W9B1344-BLK1) Phosphorus, Dissolved	ND	0.0014	0.010	mg/l	epared: 02/25/19	Analyzed:	03/08/19				
				-							
LCS (W9B1344-BS1) Phosphorus, Dissolved		0.0014	0.010	Pre mg/l	epared: 02/25/19 0.0500	Analyzed:	03/08/19 104	90-110			
				-							
Matrix Spike (W9B1344-MS1) Phosphorus, Dissolved		<b>B19048-03</b> 0.0014	0.010	Pre mg/l	epared: 02/25/19 0.0500	Analyzed: 0.0417	03/08/19 103	90-110			
• •			0.010	-							
Matrix Spike Dup (W9B1344-MSD1) Phosphorus, Dissolved	Source: 9	<b>B19048-03</b> 0.0014	0.010	Pre mg/l	epared: 02/25/19 0.0500	Analyzed: 0.0417	03/08/19 102	90-110	0.5	20	
• •	0.0020	0.0014	0.010	mg/i	0.0000	0.0417	102	50-110	0.0	20	
Batch: W9B1523 - EPA 353.2											
Blank (W9B1523-BLK1)	ND	0.083	0.20	ma/l	Prepared & An	alyzed: 02/2	27/19				
NO2+NO3 as N	ND	0.083	0.20	mg/l							
LCS (W9B1523-BS1)	0.077	0.000	0.00		Prepared & An	alyzed: 02/2		00.440			
NO2+NO3 as N	0.977	0.083	0.20	mg/l	1.00		98	90-110			
Matrix Spike (W9B1523-MS1)		B19048-01	0.00		Prepared & An	-		00.440			
NO2+NO3 as N	2.03	0.083	0.20	mg/l	2.00	ND	102	90-110			
Matrix Spike (W9B1523-MS2)		B19048-04			Prepared & An	-					
NO2+NO3 as N	4.03	0.083	0.20	mg/l	2.00	2.13	95	90-110			
Matrix Spike Dup (W9B1523-MSD1)		B19048-01			Prepared & An						
NO2+NO3 as N	2.04	0.083	0.20	mg/l	2.00	ND	102	90-110	0.5	20	
Matrix Spike Dup (W9B1523-MSD2)		B19048-04			Prepared & An						
NO2+NO3 as N	4.01	0.083	0.20	mg/l	2.00	2.13	94	90-110	0.5	20	
Batch: W9C0024 - EPA 351.2											
Blank (W9C0024-BLK1)				Pre	epared: 03/01/19	Analyzed:	03/06/19				
TKN, Soluble	ND	0.050	0.10	mg/l							
Blank (W9C0024-BLK2)				Pre	epared: 03/01/19	Analyzed:	03/06/19				
TKN, Soluble	ND	0.050	0.10	mg/l		-					



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Feb. 2019 P6040555

**Reported:** 03/20/2019 14:18

Project Manager: Kelly Hahs

(Continued)

#### Quality Control Results

Conventional Chemistry/Physical Parameters by	APHA/EPA/AST	M Method	s (Continue	d)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W9C0024 - EPA 351.2 (Continued)											
Blank (W9C0024-BLK2)				Prej	oared: 03/01/1	9 Analyzed:	03/06/19	)			
LCS (W9C0024-BS1)				Pre	oared: 03/01/1	9 Analyzed:	03/06/19	•			
TKN, Soluble	0.968	0.050	0.10	mg/l	1.00		97	90-110			
LCS (W9C0024-BS2)				Prej	oared: 03/01/1	9 Analyzed:	03/06/19	•			
TKN, Soluble	0.931	0.050	0.10	mg/l	1.00		93	90-110			
Matrix Spike (W9C0024-MS1)	Source: 9	B19048-01		Pre	oared: 03/01/1	9 Analyzed:	03/06/19	9			
TKN, Soluble	2.27	0.050	0.10	mg/l	1.00	1.23	104	90-110			
Matrix Spike Dup (W9C0024-MSD1)	Source: 9	B19048-01		Pre	oared: 03/01/1	9 Analyzed:	03/06/19	)			
TKN, Soluble	2.25	0.050	0.10	mg/l	1.00	1.23	103	90-110	0.5	10	
Batch: W9C0026 - EPA 351.2											
Blank (W9C0026-BLK1)				Pre	oared: 03/01/1	9 Analyzed:	03/06/19	)			
ТКМ		0.050	0.10	mg/l							
Blank (W9C0026-BLK2)				Pre	oared: 03/01/1	9 Analyzed:	03/12/19	•			
ТКМ		0.050	0.10	mg/l							
LCS (W9C0026-BS1)				Prej	oared: 03/01/1	9 Analyzed:	03/06/19	•			
ТКМ	0.979	0.050	0.10	mg/l	1.00		98	90-110			
LCS (W9C0026-BS2)				Prej	oared: 03/01/1	9 Analyzed:	03/12/19	•			
ТКМ	0.969	0.050	0.10	mg/l	1.00		97	90-110			
Matrix Spike (W9C0026-MS1)	Source: 9	B19048-01		Pre	oared: 03/01/1	9 Analyzed:	03/06/19	)			
TKN	2.36	0.050	0.10	mg/l	1.00	1.35	101	90-110			
Matrix Spike Dup (W9C0026-MSD1)	Source: 9	B19048-01		Pre	oared: 03/01/1	9 Analyzed:	03/06/19	)			
ΤΚΝ	2.34	0.050	0.10	mg/l	1.00	1.35	98	90-110	1	10	



FINAL REPORT

Ventura County Watershed Protection District

#### 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study Feb. 2019 P6040555

**Reported:** 03/20/2019 14:18

Project Manager: Kelly Hahs

#### Notes and Definitions

ltem	Definition
M-06	Due to the high concentration of analyte inherent in the sample, sample was diluted prior to preparation. The MDL and MRL were raised due to this dilution.
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified. All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

			ic Co (VR	ond R Alg	itio gae	ns, a TM	and DL)	Nutrients TMDL
VENTURA COUNTY			ehens	sive	Мо	nitor	ing P	Program
CHAIN-OF-CUST						_		OF1
SAMPLING EVENT: SAMPLING DATE:	3/1	ed Protection District MARCI+ 201 3/19 C. FORTNER		r Agr		ent WI		ABORATOFY19MA01, Project P6040555)
SAMPLE ID	D	ATE/TIME	Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen			** FIELD FILTERED
TMDL-Est	3/13/19	1320	X	X	1			
TMDL-R1		1230		x				Please and sample time from
TMDL-R2		1130	x	x				bothe.
TMDL-R3		1040	x	X				
TMDL-R4		0915	x	x				
TMDL-CL		0730	x	x	x			
TMDL-SA		0845	T x	x	x			
			+^	<u> </u>				
					t			
Signature:	11. Hers		Signa	ature:				
Print Name:		LY HATS	Print	Name	):			
Affiliation:	Vendo		Affilia					
Received Date/Time:	3titles		Rece	ived D	Date/T	me:		
Relinquished Date/Time:	3/14	19	Relin	quishe	ed Dat	e/Time:		
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Print Name:	-Kenil	7. 10		Name	 	70	~ .292	1 Hard 2.3-
Affiliation:	MS	dearing	Affilia		-		- 57 6	Kharel 2.3"
Received Date/Time:	<u> </u>	GIU			)ate/Ti	 me:	3	14-19 10:00
Relinquished Date/Time:	and the second s	- 1 Struct						



FINAL REPORT

Work Orders:	9C14011	Report Date:	4/17/2019
		Received Date:	3/14/2019
Proiect:	TMDL Study March. 2019 P6040555	Turnaround Time:	Normal
,		Phones:	(805) 658-4375
		Fax:	(805) 654-3350
Attn:	Kelly Hahs	P.O. #:	WECKLABORATOFY1 9MA01
Client:	Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	

### EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 3/14/19 with the Chain-of-Custody document. The samples were received in good condition, at 2.3 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

**Reviewed by:** 

Brandon Gee Operations Manager/Senior PM



# WECK LABORATORIES, INC.

## **Certificate of Analysis**

FINAL REPORT

Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study March. 2019 P6040555

**Reported:** 04/17/2019 15:03

Project Manager: Kelly Hahs

### **Case Narrative**

SUPP report generated to correct sampling date. BG

### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	K. Hahs, K.Fortner	9C14011-01	Water	03/13/19 13:20	
TMDL-R1	K. Hahs, K.Fortner	9C14011-02	Water	03/13/19 12:30	
TMDL-R2	K. Hahs, K.Fortner	9C14011-03	Water	03/13/19 11:30	
TMDL-R3	K. Hahs, K.Fortner	9C14011-04	Water	03/13/19 10:40	
TMDL-R4	K. Hahs, K.Fortner	9C14011-05	Water	03/13/19 09:15	
TMDL-CL	K. Hahs, K.Fortner	9C14011-06	Water	03/13/19 07:30	
TMDL-SA	K. Hahs, K.Fortner	9C14011-07	Water	03/13/19 08:45	



FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study March. 2019 P6040555

**Reported:** 04/17/2019 15:03

Project Manager: Kelly Hahs

Sample	Results
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Sample:	TMDL-Est					Sam	pled: 03/	(13/19 13:20 by K. Hah	ns, K.Fortner
	9C14011-01 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional	Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 03	/19/19 17:50		Analyst: mcs	
METHOD *** Dissolved	Nitrogen		1.8		0.20	mg/l	1x1	03/22/19 12:44	
	-					Ū			
Method: _Va Nitrogen,		Batch ID: [CALC]	Instr: [CALC]		Prepared: 03 0.20	mg/l	1x1	Analyst: mcs 03/22/19 12:13	
Nitrogen,	Iotal		1.3		0.20	mg/i	IXI	03/22/19 12.13	
Method: EPA	351.2	Batch ID: W9C1070	Instr: AA06	0.050	Prepared: 03		4.4	Analyst: mcs	
TKN			0.13	0.050	0.10	mg/l	1x1	03/22/19 12:13	
Method: EPA		Batch ID: W9C1072	Instr: AA06		Prepared: 03			Analyst: mcs	
TKN, Solul	ble		ND	0.050	0.10	mg/l	1x1	03/22/19 12:44	
Method: EPA		Batch ID: W9C0813	Instr: AA01		Prepared: 03	/14/19 15:34		Analyst: het	
NO2+NO3	as N		1.8	0.083	0.20	mg/l	1x1	03/15/19 12:53	
Method: EPA	A 365.1	Batch ID: W9C0859	Instr: AA01		Prepared: 03	/15/19 12:30		Analyst: het	
Phosphore	us as P, Total		0.15	0.0014	0.010	mg/l	1x1	03/20/19 12:59	
Method: EPA	A 365.1	Batch ID: W9C0861	Instr: AA01		Prepared: 03	/15/19 12:34		Analyst: het	
Phosphor	us, Dissolved		0.041	0.0014	0.010	mg/l	1x1	03/20/19 13:35	
Sample:	TMDL-R1					Sam	pled: 03/	/13/19 12:30 by K. Hał	ns, K.Fortner
	9C14011-02 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional (	Chemistry/Physical Parameters	by APHA/EPA/ASTM Methods							
Method: ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 03	/19/19 17:50		Analyst: mcs	
METHOD ***					0.00		4.4	00/00/40 40 04	
Dissolved	Nitrogen		2.2		0.20	mg/l	1x1	03/28/19 12:01	
Method: _Va		Batch ID: [CALC]	Instr: [CALC]		Prepared: 03			Analyst: mcs	
Nitrogen,	Iotal		2.3		0.20	mg/l	1x1	03/28/19 11:37	
Method: EPA	351.2	Batch ID: W9C1070	Instr: AA06		Prepared: 03			Analyst: mcs	
TKN			0.29	0.050	0.10	mg/l	1x1	03/28/19 11:37	
Method: EPA	351.2	Batch ID: W9C1072	Instr: AA06		Prepared: 03	6/19/19 17:50		Analyst: mcs	
TKN, Solu	ble		0.18	0.050	0.10	mg/l	1x1	03/28/19 12:01	

Method: EPA 353.2	Batch ID: W9C0813	Instr: AA01		Prepared: 03	/14/19 15:34		Analyst: het
NO2+NO3 as N		2.0	0.083	0.20	mg/l	1x1	03/15/19 12:57
Method: EPA 365.1	Batch ID: W9C0859	Instr: AA01		Prepared: 03	/15/19 12:30		Analyst: het
Phosphorus as P, Total		<b>0.16</b> (	0.0014	0.010	mg/l	1x1	03/20/19 13:00
Method: EPA 365.1	Batch ID: W9C0861	Instr: AA01		Prepared: 03	/15/19 12:34		Analyst: het
Phosphorus, Dissolved		0.042	0.0014	0.010	mg/l	1x1	03/20/19 13:36

9C14011



FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Project Number: TMDL Study March. 2019 P6040555

**Reported:** 04/17/2019 15:03

Project Manager: Kelly Hahs

(Continued)

Sample Results

9C14011-03 (Water)

TMDL-R2

Sampled: 03/13/19 11:30 by K. Hahs, K.Fortner

5C14011 05 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Parameters b	by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 03	3/19/19 17:50		Analyst: mcs	
Dissolved Nitrogen		2.0		0.20	mg/l	1x1	03/22/19 12:44	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 03	3/19/19 17:49		Analyst: mcs	
Nitrogen, Total		2.2		0.20	mg/l	1x1	03/22/19 12:13	
Method: EPA 351.2	Batch ID: W9C1070	Instr: AA06		Prepared: 03	3/19/19 17:49		Analyst: mcs	
TKN		0.13	0.050	0.10	mg/l	1x1	03/22/19 12:13	
Method: EPA 351.2	Batch ID: W9C1072	Instr: AA06		Prepared: 03	3/19/19 17:50		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	03/22/19 12:44	
Method: EPA 353.2	Batch ID: W9C0813	Instr: AA01		Prepared: 03	3/14/19 15:34		Analyst: het	
NO2+NO3 as N		2.0	0.083	0.20	mg/l	1x1	03/15/19 12:58	
Method: EPA 365.1	Batch ID: W9C0859	Instr: AA01		Prepared: 03	3/15/19 12:30		Analyst: het	
Phosphorus as P, Total		0.14	0.0014	0.010	mg/l	1x1	03/20/19 13:02	
Method: EPA 365.1	Batch ID: W9C0861	Instr: AA01		Prepared: 03	3/15/19 12:34		Analyst: het	
Dhaanhama Disaahaad		0.036	0.0014	0.010	mg/l	1x1	03/20/19 13:38	
Phosphorus, Dissolved		0.000		0.010			00/20/10 10:00	
Sample: TMDL-R3 9C14011-04 (Water)					-		/13/19 10:40 by K. Hał	hs, K.Fortner
Sample: TMDL-R3		Result	MDL	MRL	-			hs, K.Fortner <b>Qualifier</b>
Sample: TMDL-R3 9C14011-04 (Water)	by APHA/EPA/ASTM Methods				Sam	pled: 03/	/13/19 10:40 by K. Hał	
Sample: TMDL-R3 9C14011-04 (Water) Analyte	by APHA/EPA/ASTM Methods Batch ID: [CALC]			MRL	Sam	pled: 03/	/13/19 10:40 by K. Hał	
Sample: TMDL-R3 9C14011-04 (Water) Analyte Conventional Chemistry/Physical Parameters & Method: *** DEFAULT SPECIFIC	-	Result		MRL	Sam	pled: 03/	/13/19 10:40 by K. Hał Analyzed	
Sample: TMDL-R3 9C14011-04 (Water) Analyte Conventional Chemistry/Physical Parameters to Method: *** DEFAULT SPECIFIC METHOD ***	-	Result Instr: [CALC]		MRL Prepared: 03 0.20	Sam Units 3/19/19 17:50	pled: 03/ Dil	/13/19 10:40 by K. Hał Analyzed Analyst: mcs	
Sample: TMDL-R3 9C14011-04 (Water) Analyte Conventional Chemistry/Physical Parameters to Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	Batch ID: [CALC]	Result Instr: [CALC] 2.0		MRL Prepared: 03 0.20	Sam Units 3/19/19 17:50 mg/l	pled: 03/ Dil	/13/19 10:40 by K. Hał Analyzed Analyst: mcs 03/22/19 12:44	
Sample: TMDL-R3 9C14011-04 (Water) Analyte Conventional Chemistry/Physical Parameters & Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	Batch ID: [CALC]	Result Instr: [CALC] 		MRL Prepared: 03 0.20 Prepared: 03 0.20	Sam Units 3/19/19 17:50 mg/l 3/19/19 17:49	pled: 03/ Dil 1x1	(13/19 10:40 by K. Hał Analyzed Analyst: mcs 03/22/19 12:44 Analyst: mcs	
Sample: TMDL-R3 9C14011-04 (Water) Analyte Conventional Chemistry/Physical Parameters & Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	Batch ID: [CALC] Batch ID: [CALC]	Result           Instr:         [CALC]		MRL Prepared: 03 0.20 Prepared: 03 0.20	Sam Units 3/19/19 17:50 mg/l 3/19/19 17:49 mg/l	pled: 03/ Dil 1x1	/13/19 10:40 by K. Hal Analyzed Analyst: mcs 03/22/19 12:44 Analyst: mcs 03/22/19 12:13	
Sample: TMDL-R3 9C14011-04 (Water) Analyte Conventional Chemistry/Physical Parameters & Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC]	Result           Instr:         [CALC]           2.0         Instr:           Instr:         [CALC]           2.0         Instr:           Instr:         [CALC]           2.0         Instr:	MDL	MRL Prepared: 03 0.20 Prepared: 03 0.20 Prepared: 03 0.20	Sam Units 3/19/19 17:50 mg/l 3/19/19 17:49 mg/l 3/19/19 17:49	pled: 03/ Dil 1x1 1x1	(13/19 10:40 by K. Hal Analyzed Analyst: mcs 03/22/19 12:44 Analyst: mcs 03/22/19 12:13 Analyst: mcs	
Sample: TMDL-R3 9C14011-04 (Water) Analyte Conventional Chemistry/Physical Parameters & Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9C1070	Result           Instr:         [CALC]	MDL	MRL Prepared: 03 0.20 Prepared: 03 0.20 Prepared: 03 0.20	Sam Units 3/19/19 17:50 mg/l 3/19/19 17:49 mg/l 3/19/19 17:49 mg/l	pled: 03/ Dil 1x1 1x1	<ul> <li>/13/19 10:40 by K. Hall</li> <li>Analyzed</li> <li>Analyst: mcs</li> <li>03/22/19 12:44</li> <li>Analyst: mcs</li> <li>03/22/19 12:13</li> <li>Analyst: mcs</li> <li>03/22/19 12:13</li> </ul>	
Sample: TMDL-R3 9C14011-04 (Water) Analyte Conventional Chemistry/Physical Parameters & Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9C1070	Result           Instr:         [CALC]           2.0         1.0           Instr:         [CALC]           2.0         1.0           Instr:         AA06           ND         1.05tr:           Instr:         AA06	<b>MDL</b>	MRL Prepared: 03 0.20 Prepared: 03 0.20 Prepared: 03 0.10 Prepared: 03 0.10	Sam Units 3/19/19 17:50 mg/l 3/19/19 17:49 mg/l 3/19/19 17:49 mg/l 3/19/19 17:50	pled: 03/ Dil 1x1 1x1 1x1	<ul> <li>/13/19 10:40 by K. Hal</li> <li>Analyzed</li> <li>Analyst: mcs</li> <li>03/22/19 12:44</li> <li>Analyst: mcs</li> <li>03/22/19 12:13</li> <li>Analyst: mcs</li> <li>03/22/19 12:13</li> <li>Analyst: mcs</li> <li>03/22/19 12:13</li> </ul>	
Sample: TMDL-R3 9C14011-04 (Water) Analyte Conventional Chemistry/Physical Parameters & Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9C1070 Batch ID: W9C1072	Result           Instr:         [CALC]           Instr:         2.0           Instr:         [CALC]           Instr:         AA06           ND         Instr:           Instr:         AA06           ND         ND	<b>MDL</b>	MRL Prepared: 03 0.20 Prepared: 03 0.20 Prepared: 03 0.10 Prepared: 03 0.10	Sam Units 3/19/19 17:50 mg/l 3/19/19 17:49 mg/l 3/19/19 17:49 mg/l 3/19/19 17:50 mg/l	pled: 03/ Dil 1x1 1x1 1x1	<ul> <li>/13/19 10:40 by K. Hall</li> <li>Analyzed</li> <li>Analyst: mcs</li> <li>03/22/19 12:44</li> <li>Analyst: mcs</li> <li>03/22/19 12:13</li> <li>Analyst: mcs</li> <li>03/22/19 12:13</li> <li>Analyst: mcs</li> <li>03/22/19 12:44</li> </ul>	
Sample: TMDL-R3 9C14011-04 (Water) Analyte Conventional Chemistry/Physical Parameters & Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9C1070 Batch ID: W9C1072	Result           Instr:         [CALC]           Instr:         2.0           Instr:         [CALC]           Instr:         A06           ND         ND           Instr:         AA06           ND         ND           Instr:         AA016           ND         ND           Instr:         AA016           ND         ND           Instr:         AA016	<b>MDL</b> 0.050	MRL Prepared: 03 0.20 Prepared: 03 0.20 Prepared: 03 0.10 Prepared: 03 0.10 Prepared: 03 0.10 Prepared: 03 0.20 Prepared: 03 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0	Sam Units 3/19/19 17:50 mg/l 3/19/19 17:49 mg/l 3/19/19 17:49 mg/l 3/19/19 17:50 mg/l 3/14/19 15:34	pled: 03/ Dil 1x1 1x1 1x1 1x1 1x1	/13/19 10:40 by K. Hall Analyzed Analyst: mcs 03/22/19 12:44 Analyst: mcs 03/22/19 12:13 Analyst: mcs 03/22/19 12:13 Analyst: mcs 03/22/19 12:14 Analyst: mcs 03/22/19 12:44 Analyst: het	

Method: EPA 365.1

Phosphorus, Dissolved

Analyst: het 03/20/19 13:39

1x1



FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Project Number: TMDL Study March. 2019 P6040555

**Reported:** 04/17/2019 15:03

Project Manager: Kelly Hahs

(Continued)

Sample Results

9C14011-05 (Water)

TMDL-R4

Sampled: 03/13/19 9:15 by K. Hahs, K.Fortner

AnalysitResultMotileMotileMotileMotileMotileMotileMotileConversional Construct/PHA/EPHA/EPHA/EPHA/EPHA/EPHA/EPHA/EPHA/									
Method: *** DEFAULT SPECIFC       Bach D: [CALC]       Inst: [CALC]       Prepared: 3/19/19 739       Majyst: mc         Disolved Mitrogen       1.7       0.20       mgl       1x1       03/22/19 12:43         Method: [Various]       Bath DD: [CALC]       Inst: [CALC]       0.20       mgl       1x1       03/22/19 12:43         Method: [Various]       Bath DD: WOCION       Inst: [CALC]       0.20       mgl       1x1       03/22/19 12:43         Method: [PA 351]       Bath DD: WOCION       Inst: AND       0.00       0.10       mgl       1x1       03/22/19 12:43         Method: [PA 351]       Bath DD: WOCION       Inst: AND       0.00       0.10       mgl       1x1       03/22/19 12:43         Method: [PA 351]       Bath DD: WOCION       Inst: AND       0.000       mgl       1x1       03/25/19:12:43         Method: [PA 351]       Bath DD: WOCION       Inst: AND       0.010       mgl       1x1       03/25/19:12:43         Method: [PA 351]       Bath DD: WOCION       Inst: AND       0.010       mgl       1x1       03/25/19:12:44         Method: [PA 351]       Bath D: WOCION       Inst: AND       0.010       mgl       1x1       03/25/19:12:44         Method: [PA 351]       Bath D: WOCION <td< th=""><th>Analyte</th><th></th><th>Result</th><th>MDL</th><th>MRL</th><th>Units</th><th>Dil</th><th>Analyzed</th><th>Qualifier</th></td<>	Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: Wirkowa         Batch ID: [CACC]         Instr: [CACC]         Prepared: 03/19/19 17/39         Analyst: mes           Method: Wirkowa         Batch ID: W9C1070         Instr: [CACC]         Prepared: 03/19/19 17/39         Instr: 03/22/19 12:13           Method: Wirkowa         Batch ID: W9C1070         Instr: AMO         Prepared: 03/19/19 17/39         Instr: 03/02/19 12:13           Method: EPA 351.2         Batch ID: W9C1070         Instr: AMO         Prepared: 03/19/19 17/30         Analyst: mes           TKN, Soukhoe         0.00         0.10         mg/d         1x1         03/22/19 12:44           Method: EPA 351.2         Batch ID: W9C0072         Instr: AMO         Prepared: 03/19/19 17:50         Analyst: mes           Method: EPA 353.2         Batch ID: W9C0081         Instr: AMO         Prepared: 03/16/19 12:34         Analyst: het           Phosphorus as P. Total         Batch ID: W9C0870         Instr: AMO         Prepared: 03/15/19 12:34         Analyst: het           Phosphorus as P. Total         Batch ID: W9C0861         Instr: AMO         Prepared: 03/15/19 12:34         Analyst: het           Phosphorus as P. Total         Batch ID: W9C0861         Instr: AMO         Prepared: 03/15/19 12:34         Analyst: het           Phosphorus as P. Total         Batch ID: W9C0861         Instr: AMO         Prepared: 03/15/19	Conventional Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods							
Disolved Nitrogen       1.7       0.20       ngll       1x1       03/22/19 12.44         Nitrogen, Yorkow       Batch ID; (GALC)       Instr: (GALC)       Peppared: 03/19/19/17/49       1x1       03/02/19 12.13         Nitrogen, Total       Batch ID; W9(1070       1.8       0.00       mgll       1x1       03/22/19 12.13         Method: EPA 351.2       Batch ID; W9(1072       Instr: AA05       Peppared: 03/19/19 17.50       Analyst: mcs         TKN       Soluble       ND       0.00       0.10       mgll       1x1       03/22/19 12.13         Method: EPA 351.2       Batch ID; W9(0172       Instr: AA05       Peppared: 03/19/19 17.50       Analyst: mcs         ND       0.000       0.010       mgll       1x1       03/22/19 12.44         Method: EPA 351.2       Batch ID; W9(0879       Instr: AA01       Peppared: 03/19/19 15.30       Analyst: mcs         ND2+NO2 AN SA       Batch ID; W9(0879       Instr: AA01       0.001       mgll       1x1       03/20/19 12.57         Method: EPA 365.1       Batch ID; W9(0859       Instr: AA01       Peppared: 03/15/19 12.24       Analyst: mcs         Phosphorus, Disolved       Instr: AA01       Instr: AA01       0.010       mgll       1x1       03/20/19 12.57         Sample: <td>Method: *** DEFAULT SPECIFIC</td> <td>Batch ID: [CALC]</td> <td>Instr: [CALC]</td> <td></td> <td>Prepared: 0</td> <td>3/19/19 17:50</td> <td></td> <td>Analyst: mcs</td> <td></td>	Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/19/19 17:50		Analyst: mcs	
Method:         Markin ID:         CALC         Instr:         Prepared:         OVERATION         Analyst:         Malayst:         Malayst: <t< td=""><td>METHOD ***</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	METHOD ***								
Nitrogen, Total         1.8         0.20         mgl         1x1         0322/1912:13           Method: EPA 351.2         Batch ID: W9C1070         Instr: A006         Prepared: 03/19/191740         Analyst: mcs           TKN         0.12         Method: EPA 351.2         Batch ID: W9C1070         Instr: A006         Prepared: 03/19/191750         Xnalyst: mcs           TKN, Solubic         Batch ID: W9C0031         Instr: A006         Prepared: 03/19/191750         Xnalyst: mcs         303221912:24           Method: EPA 353.2         Batch ID: W9C0081         Instr: A001         0.00         mgl         1x1         033221912:24           Method: EPA 355.1         Batch ID: W9C0081         Instr: A001         0.00         mgl         1x1         03321912:24           Method: EPA 355.1         Batch ID: W9C0085         Instr: A001         0.00         mgl         1x1         03321912:24           Method: EPA 355.1         Batch ID: W9C0085         Instr: A001         0.010         mgl         1x1         033201912:35           Method: EPA 355.1         Batch ID: W9C085         Instr: A001         0.010         mgl         1x1         032201912:35           Method: EPA 350.1         Batch ID: W9C085         Instr: A001         0.010         mgl         1x1         03	Dissolved Nitrogen		1.7		0.20	mg/l	1x1	03/22/19 12:44	
Method:         EPA 251.2         Batch ID:         WegC1070         Instr: AA06         Prepared:         0.10         mg/l         1/1         03/22/19 12:13           Method:         EPA 251.2         Batch ID:         WG1072         Instr: AA06         Prepared:         03/19/19 17:50         Analyst: mcs           TKN         Soluble          ND         0.050         0.10         mg/l         1x1         03/22/19 12:43           Method:         EPA 353.2         Batch ID:         WG20813         Instr: AA01          Method:         Mg/l         1x1         03/15/19 13:52           Method:         EPA 365.1         Batch ID:         WG20859         Instr: AA01         Prepared:         0.010         mg/l         1x1         03/20/19 12:57           Method:         EPA 265.1         Batch ID:         WG20661         Instr: AA01         Prepared:         0.010         mg/l         1x1         03/20/19 12:57           Method:         EPA 265.1         Batch ID:         WG20661         Instr: AA01         O.010         mg/l         1x1         03/20/19 12:57           Method:         FPA 255.1         Batch ID:         WG20617         Instr: AA01         O.010         mg/l         1x1         03/2	Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/19/19 17:49		Analyst: mcs	
TKN       0.12       0.50       0.10       mg/l       1x1       03/22/19 12:3         Method: EPA 351.2       Batch ID: W9C1072       instr: AA06       Prepared: 03/19/19 17:50       Analyst: mcs         TKN, Soluble       ND       0.50       0.10       mg/l       1x1       03/22/19 12:34         Method: EPA 353.2       Batch ID: W9C0813       instr: AA01       Prepared: 03/19/19 13:54       Analyst: het       03/67/19 13:53         Method: EPA 365.1       Batch ID: W9C0859       Instr: AA01       0.010       mg/l       1x1       03/20/19 12:57         Method: EPA 365.1       Batch ID: W9C0859       Instr: AA01       0.010       mg/l       1x1       03/20/19 12:57         Method: EPA 365.1       Batch ID: W9C0850       Instr: AA01       0.010       mg/l       1x1       03/20/19 12:57         Method: EPA 365.1       Batch ID: W9C0861       Instr: AA01       0.010       mg/l       1x1       03/20/19 12:57         Method: EPA 365.1       Batch ID: W9C0861       Instr: AA01       0.010       mg/l       1x1       03/20/19 12:57         Method: EPA 365.1       Batch ID: W9C0861       Instr: EAL01       0.010       mg/l       1x1       03/20/19 12:57         Method: W1D-CL       Seconic       Instr: AA01	Nitrogen, Total		1.8		0.20	mg/l	1x1	03/22/19 12:13	
Method:         First:         AADO         Prepared:         03/19/19         Total         Analyst:         Analyst:           Method:         EPA 351.2         Batch ID:         Mod 201072         Instr:         AADO         0.050         0.10         mg/l         1x1         03/22/19         12.44           Method:         EPA 353.2         Batch ID:         Mod 2000         mg/l         1x1         03/22/19         12.44           Method:         EPA 353.2         Batch ID:         Mod 2000         mg/l         1x1         03/22/19         13.45         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15/19         13.53         03/15	Method: EPA 351.2	Batch ID: W9C1070	Instr: AA06		Prepared: 0	3/19/19 17:49		Analyst: mcs	
TKN, Soluble       ND       0.050       0.10       mgl       1x1       03/22/19 12:44         Method: EPA 353.2       Batch ID: W900813       instr: AA01       Prepared: 03/14/19 15:34       Analyst: het         NO2-NO3 as N       1.7       0.083       0.20       mgl       1x1       03/20/19 13:52         Method: EPA 365.1       Batch ID: W900859       Instr: AA01       Prepared: 03/15/19 12:30       Analyst: het         Phosphorus, Bissolved       0.010       mgl       1x1       03/20/19 12:57         Method: EPA 365.1       Batch ID: W900811       instr: AA01       Prepared: 03/15/19 12:30       Analyst: het         Phosphorus, Dissolved       0.010       mgl       1x1       03/20/19 12:37         Sample:       TMDL-CL       Sample:       Sample:       Sample:       TML       Disolved Mitrogen       0.010       mgl       1x1       03/20/19 13:33         Method: *** DEFAULT SPECIFIC       Batch ID: (CALC)       Instr: [CALC]       Prepared: 03/19/19 17:59       Analyst: mcs       Analyst: mcs         Disolved Nitrogen       2.3       0.20       mgl       1x1       03/22/19 12:41       Method: *** DEFAULT SPECIFIC       Batch ID: (CALC)       Instr: [CALC]       Prepared: 03/19/19 17:59       Analyst: mcs       Analyst: mcs	ТКМ		0.12	0.050	0.10	mg/l	1x1	03/22/19 12:13	
Method: EPA 353.2         Batch ID: W9C0813         Instr: AA01         Prepared: 03/14/19 15.34         Analyst: het 0.028         Malyst: het 0.010         majy: het main           Method: EPA 365.1         Batch ID: W9C0859         Instr: AA01         Prepared: 03/15/19 12.30         Analyst: het 0.028         0.010         mg/l         1x1         03/20/19 12.57           Method: EPA 365.1         Batch ID: W9C0861         Instr: AA01         Prepared: 03/15/19 12.34         Analyst: het 0.010         mg/l         1x1         03/20/19 12.57           Method: EPA 365.1         Batch ID: W9C0861         Instr: AA01         Prepared: 03/15/19 12.34         Analyst: het 0.012         0.014         0.010         mg/l         1x1         03/20/19 13.33           Sample:         TMDL-CL         Batch ID: W9C0861         Instr: (A001         Mg/l         Mg/l         0.01         mg/l         1x1         03/20/19 13.33           Sample:         TMDL-CL         Batch ID: W9C0861         Instr: (A001         Mg/l         Mg/l         Malyst: mcs         Mg/l           Method: *** DEFAULT SPECIFIC         Batch ID: (CALC]         Instr: (CALC]         Prepared: 03/19/19 17.50         Analyst: mcs           Method: _Various         Batch ID: (MCD)         Instr: AA06         Prepared: 03/19/19 17.50         Analyst: mcs <t< td=""><td>Method: EPA 351.2</td><td>Batch ID: W9C1072</td><td>Instr: AA06</td><td></td><td>Prepared: 0</td><td>3/19/19 17:50</td><td></td><td>Analyst: mcs</td><td></td></t<>	Method: EPA 351.2	Batch ID: W9C1072	Instr: AA06		Prepared: 0	3/19/19 17:50		Analyst: mcs	
NO2+NO3 as N         1.7         0.083         0.20         mg/l         1x1         0.3/15/19 13:52           Method: EPA 365.1         Batch ID: W9C0859         Instr: AA01         0.010         mg/l         1x1         03/20/19 12:57           Method: EPA 365.1         Batch ID: W9C0861         Instr: AA01         0.010         mg/l         1x1         03/20/19 12:57           Method: EPA 365.1         Batch ID: W9C0861         Instr: AA01         Prepared: 03/15/19 12:34         Analyst: het 0.010         mg/l         1x1         03/20/19 13:33           Sample:         TMDL-CL         Batch ID: W9C0861         Instr: AA01         Prepared: 03/15/19 12:34         Analyst: het 0.010         mg/l         1x1         03/20/19 13:33           Method: EPA 365.1         Batch ID: W9C0861         Instr: AA01         Outo         mg/l         1x1         03/20/19 12:44           Sample:         TMDL-CL         Execute         Sample:         Disolved Nitrogen         Sample:         CAualyst: mcs           Nitrogen, Total         Eath ID: W9C1070         Instr: CALCI         Prepared: 03/19/19 17:49         Analyst: mcs           Nitrogen, Total	TKN, Soluble		ND	0.050	0.10	mg/l	1x1	03/22/19 12:44	
Method:         EPA 365.1         Batch ID:         W9C0859         Instr: A001         Prepared:         0.01/15/19         1.2.3         Analyst: het           Phosphorus as P, Total         0.028         0.0014         0.010         mg/l         1.x1         0.020/19         12.30           Method:         EPA 365.1         Batch ID:         W9C0861         Instr: A001         mg/l         1.x1         0.03/20/19         13.33           Sample:         TMDL-CL         Sample:         TMDL-CL         Sample:         Sample:         TMDL-CL         Sample:         Sample:         TMDL-CL         Sample:         Sample:         TMDL-CL         Sample:         Sample:         Sample:         TMDL-CL         Sample:	Method: EPA 353.2	Batch ID: W9C0813	Instr: AA01		Prepared: 0	3/14/19 15:34		Analyst: het	
Phosphorus as P, Total         0.028         0.014         0.010         mg/l         1x1         03/20/19 12:57           Method: EPA 365.1         Batch ID: W9C0861         Instr: A001         0.010         mg/l         1x1         03/20/19 12:57           Sample:         TMDL-CL         Sample:         TMDL-CL         Sample:         TMDL-CL         Sample:         Samp	NO2+NO3 as N		1.7	0.083	0.20	mg/l	1x1	03/15/19 13:52	
Method: EPA 365.1         Batch ID: W9C0861         Instr: AA01 0.012         OO14         Prepared: 03/15/19 12:34 0.010         Analyst: het 03/20/19 13:33           Sample:         TMDL-CL 9C14011-06 (Water)         TMDL-CL         Sample:	Method: EPA 365.1	Batch ID: W9C0859	Instr: AA01		Prepared: 0	3/15/19 12:30		Analyst: het	
Phosphorus, Dissolved         0.012         0.014         0.010         mg/l         1x1         03/20/19 13:33           Sample:         TMDL-CL 9C14011-06 (Water)         Sample:         TMDL-CL         Sample::         Sample:: <td>Phosphorus as P, Total</td> <td></td> <td>0.028</td> <td>0.0014</td> <td>0.010</td> <td>mg/l</td> <td>1x1</td> <td>03/20/19 12:57</td> <td></td>	Phosphorus as P, Total		0.028	0.0014	0.010	mg/l	1x1	03/20/19 12:57	
Phosphorus, Dissolved         0.012         0.012         0.010         mg/l         1x1         0.3/20/19 13:33           Sample:         TMDL-CL 9C14011-06 (Water)         Sample:         TMDL-CL         Sample::         Sample:: <td>Method: EPA 365.1</td> <td>Batch ID: W9C0861</td> <td>Instr: AA01</td> <td></td> <td>Prepared: 0</td> <td>3/15/19 12:34</td> <td></td> <td>Analyst: het</td> <td></td>	Method: EPA 365.1	Batch ID: W9C0861	Instr: AA01		Prepared: 0	3/15/19 12:34		Analyst: het	
9C14011-06 (Water)         Analyte       Result       MDL       MRL       Units       Dil       Analyzed       Qualifier         Conventional Chemistry/Physical Parameters by APHA/EPA/ASTM Methods       Instr: [CALC]       Prepared: 03/19/19 17:50       Analyst: mcs       Analyst: mcs         Method: *** DEFAULIT SPECIFIC METHOD ***       Batch ID: [CALC]       Instr: [CALC]       Prepared: 03/19/19 17:50       Analyst: mcs       Analyst: mcs         Method: _Various       Batch ID: [CALC]       Instr: [CALC]       Prepared: 03/19/19 17:49       Analyst: mcs         Method: _Various       Batch ID: [CALC]       Instr: [CALC]       Prepared: 03/19/19 17:49       Analyst: mcs         Method: EPA 351.2       Batch ID: W9C1070       Instr: AA06       Prepared: 03/19/19 17:49       Analyst: mcs         Method: EPA 351.2       Batch ID: W9C1072       Instr: AA06       Prepared: 03/19/19 17:49       Analyst: mcs         Method: EPA 351.2       Batch ID: W9C1072       Instr: AA06       Prepared: 03/19/19 17:50       Analyst: mcs         Method: EPA 351.2       Batch ID: W9C01072       Instr: AA06       Prepared: 03/19/19 17:50       Analyst: mcs         Method: EPA 351.2       Batch ID: W9C01072       Instr: AA06       Prepared: 03/19/19 17:50       Analyst: mcs         Method: EPA 353.2       Batch	Phosphorus, Dissolved		0.012	0.0014	-		1x1		
Conventional Chemistry/Physical Parameters by HA/EPA/ASTM Methods         Method: *** DEFAULT SPECIFIC       Batch ID: [CALC]       Instr: [CALC]       Prepared: 03/19/19 17:50       Analyst: mcs         Dissolved Nitrogen       2.3       0.20       mg/l       1x1       03/22/19 12:44         Method: _Various       Batch ID: [CALC]       Instr: [CALC]       Prepared: 03/19/19 17:49       Analyst: mcs         Method: _Various       Batch ID: [CALC]       Instr: [CALC]       Prepared: 03/19/19 17:49       Analyst: mcs         Method: _Various       Batch ID: W9C1070       Instr: A006       Prepared: 03/19/19 17:49       Analyst: mcs         Method: EPA 351.2       Batch ID: W9C1072       Instr: A006       0.100       mg/l       1x1       03/22/19 12:13         Method: EPA 351.2       Batch ID: W9C1072       Instr: A006       0.100       mg/l       1x1       03/22/19 12:13         Method: EPA 351.2       Batch ID: W9C1072       Instr: A006       0.100       mg/l       1x1       03/22/19 12:13         Method: EPA 351.2       Batch ID: W9C0813       Instr: A001       mg/l       1x1       03/22/19 12:13         Method: EPA 351.2       Batch ID: W9C0813       Instr: A001       mg/l       1x1       03/22/19 12:44         Method: EPA 353.2       Batch ID:	9C14011-06 (Water)								
Method: *** DEFAULT SPECIFIC         Batch ID: [CALC]         Instr: [CALC]         Prepared: 03/19/19 17:50         Analyst: mcs           Dissolved Nitrogen         2.3         0.20         mg/l         1x1         03/22/19 12:44           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 03/19/19 17:49         Analyst: mcs           Nitrogen, Total         2.8         0.20         mg/l         1x1         03/22/19 12:13           Method: EPA 351.2         Batch ID: W9C1070         Instr: AA06         Prepared: 03/19/19 17:49         Analyst: mcs           TKN         -         -         1.3         0.050         0.10         mg/l         1x1         03/22/19 12:13           Method: EPA 351.2         Batch ID: W9C1070         Instr: AA06         Prepared: 03/19/19 17:49         Analyst: mcs           TKN, Soluble         -         -         0.50         0.10         mg/l         1x1         03/22/19 12:13           Method: EPA 353.2         Batch ID: W9C0072         Instr: AA06         Prepared: 03/19/19 17:50         Analyst: mcs           Method: EPA 353.2         Batch ID: W9C0813         Instr: AA01         Prepared: 03/19/19 15:34         Analyst: het           Method: EPA 355.1         Batch ID: W9C0859         Instr: AA01         Prep	Analyte		Pocult	МП	MPI	Unite	Dil	Analyzed	Qualifier
METHOD ***         2.3         0.20         mg/l         1x1         03/22/19 12:44           Method: _Various         Batch ID: [CALC]         Instr: [CALC]         Prepared: 03/19/19 17:49         Analyst: mcs           Nitrogen, Total         2.8         0.20         mg/l         1x1         03/22/19 12:13           Method: EPA 351.2         Batch ID: W9C1070         Instr: AA06         Prepared: 03/19/19 17:49         Analyst: mcs           TKN         1.3         0.050         0.10         mg/l         1x1         03/22/19 12:13           Method: EPA 351.2         Batch ID: W9C1070         Instr: AA06         Prepared: 03/19/19 17:49         Analyst: mcs           TKN         0.050         0.10         mg/l         1x1         03/22/19 12:13           Method: EPA 351.2         Batch ID: W9C1072         Instr: AA06         Prepared: 03/19/19 17:50         Analyst: mcs           TKN, Soluble         0.050         0.10         mg/l         1x1         03/22/19 12:44           Method: EPA 353.2         Batch ID: W9C0813         Instr: AA01         Prepared: 03/14/19 15:34         Analyst: het           NO2+NO3 as N         Instr: AA01         0.083         0.20         mg/l         1x1         03/15/19 13:00           Method: EPA 355.1		ers by APHA/EPA/ASTM Methods	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Dissolved Nitrogen       2.3       0.20       mg/l       1x1       03/22/19 12:44         Method: _Various       Batch ID: [CALC]       Instr: [CALC]       Prepared: 03/19/19 17:49       Analyst: mcs         Nitrogen, Total       2.8       0.20       mg/l       1x1       03/22/19 12:13         Method: EPA 351.2       Batch ID: W9C1070       Instr: AA06       Prepared: 03/19/19 17:49       Analyst: mcs         Method: EPA 351.2       Batch ID: W9C1072       Instr: AA06       0.10       mg/l       1x1       03/22/19 12:13         Method: EPA 351.2       Batch ID: W9C1072       Instr: AA06       Prepared: 03/19/19 17:50       Analyst: mcs         Method: EPA 351.2       Batch ID: W9C1072       Instr: AA06       0.10       mg/l       1x1       03/22/19 12:13         Method: EPA 353.2       Batch ID: W9C1072       Instr: AA06       O.650       0.10       mg/l       1x1       03/22/19 12:44         Method: EPA 353.2       Batch ID: W9C0813       Instr: AA01       Prepared: 03/19/19 15:34       Analyst: het         Mo2+NO3 as N       Batch ID: W9C0859       Instr: AA01       Prepared: 03/15/19 12:30       Analyst: het         Method: EPA 365.1       Batch ID: W9C0859       Instr: AA01       Prepared: 03/15/19 12:30       Analyst: het <td>Conventional Chemistry/Physical Paramete</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td>Dil</td> <td></td> <td>Qualifier</td>	Conventional Chemistry/Physical Paramete	-					Dil		Qualifier
Nitrogen, Total         2.8         0.20         mg/l         1x1         03/22/19 12:13           Method: EPA 351.2         Batch ID: W9C1070         Instr: AA06         Prepared: 03/19/19 17:49         Analyst: mcs           TKN         1.3         0.050         0.10         mg/l         1x1         03/22/19 12:13           Method: EPA 351.2         Batch ID: W9C1072         Instr: AA06         Prepared: 03/19/19 17:50         Analyst: mcs           TKN, Soluble         Batch ID: W9C0813         Instr: AA06         0.050         0.10         mg/l         1x1         03/22/19 12:44           Method: EPA 353.2         Batch ID: W9C0813         Instr: AA01         Prepared: 03/14/19 15:34         Analyst: het 0.20         0.30/15/19 13:00           Method: EPA 365.1         Batch ID: W9C0859         Instr: AA01         Prepared: 03/15/19 12:30         Analyst: het	Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC	-					Dil		Qualifier
Method: EPA 351.2         Batch ID: W9C1070         Instr: AA06         Prepared: 03/19/19 17:49         Analyst: mcs           Method: EPA 351.2         Batch ID: W9C1072         Instr: AA06         Prepared: 03/19/19 17:50         Analyst: mcs           TKN, Soluble         Batch ID: W9C1072         Instr: AA06         Prepared: 03/19/19 17:50         Analyst: mcs           Method: EPA 353.2         Batch ID: W9C0813         Instr: AA01         Prepared: 03/14/19 15:34         Analyst: het           NO2+NO3 as N         Batch ID: W9C0859         Instr: AA01         Prepared: 03/15/19 12:30         Analyst: het	Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD ***	-	Instr: [CALC]		Prepared: 0	03/19/19 17:50		Analyst: mcs	Qualifier
TKN         1.3         0.050         0.10         mg/l         1x1         03/22/19 12:13           Method: EPA 351.2         Batch ID: W9C1072         Instr: AA06         Prepared: 03/19/19 17:50         Analyst: mcs           TKN, Soluble         0.050         0.050         0.10         mg/l         1x1         03/22/19 12:44           Method: EPA 353.2         Batch ID: W9C0813         Instr: AA01         Prepared: 03/14/19 15:34         Analyst: het 03/15/19 13:00           Method: EPA 365.1         Batch ID: W9C0859         Instr: AA01         Prepared: 03/15/19 12:30         Analyst: het 03/15/19 13:00	Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	Batch ID: [CALC]	Instr: [CALC]		<b>Prepared:</b> 0 0.20	)3/19/19 17:50 mg/l		<b>Analyst:</b> mcs 03/22/19 12:44	Qualifier
Method: EPA 351.2         Batch ID: W9C1072         Instr: AA06         Prepared: 03/19/19 17:50         Analyst: mcs           Method: EPA 353.2         Batch ID: W9C0813         Instr: AA01         0.050         0.10         mg/l         1x1         03/22/19 12:44           Method: EPA 353.2         Batch ID: W9C0813         Instr: AA01         Prepared: 03/14/19 15:34         Analyst: het 03/15/19 13:00           Method: EPA 365.1         Batch ID: W9C0859         Instr: AA01         Prepared: 03/15/19 12:30         Analyst: het 03/15/19 13:00	Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	Batch ID: [CALC]	Instr: [CALC] 2.3 Instr: [CALC]		Prepared: 0 0.20 Prepared: 0	13/19/19 17:50 mg/l 13/19/19 17:49	1x1	<b>Analyst:</b> mcs 03/22/19 12:44 <b>Analyst:</b> mcs	Qualifier
TKN, Soluble       0.76       0.050       0.10       mg/l       1x1       03/22/19 12:44         Method: EPA 353.2       Batch ID: W9C0813       Instr: AA01       Prepared: 03/14/19 15:34       Analyst: het         NO2+NO3 as N       1.5       0.083       0.20       mg/l       1x1       03/15/19 13:00         Method: EPA 365.1       Batch ID: W9C0859       Instr: AA01       Prepared: 03/15/19 12:30       Analyst: het	Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	Batch ID: [CALC] Batch ID: [CALC]	Instr: [CALC] 2.3 Instr: [CALC] 2.8		Prepared: 0 0.20 Prepared: 0 0.20	)3/19/19 17:50 mg/l )3/19/19 17:49 mg/l	1x1	Analyst: mcs 03/22/19 12:44 Analyst: mcs 03/22/19 12:13	Qualifier
Method: EPA 365.1         Batch ID: W9C0813         Instr: AA01         Prepared: 03/14/19 15:34         Analyst: het           Method: EPA 365.1         Batch ID: W9C0859         Instr: AA01         Prepared: 03/15/19 12:30         Analyst: het	Conventional Chemistry/Physical Paramete Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC]	Instr: [CALC] 2.3 Instr: [CALC] 2.8 Instr: AA06		Prepared: 0 0.20 Prepared: 0 0.20 Prepared: 0	13/19/19 17:50 mg/l 13/19/19 17:49 mg/l 13/19/19 17:49	1x1 1x1	Analyst: mcs 03/22/19 12:44 Analyst: mcs 03/22/19 12:13 Analyst: mcs	Qualifier
NO2+NO3 as N         1.5         0.083         0.20         mg/l         1x1         03/15/19 13:00           Method: EPA 365.1         Batch ID: W9C0859         Instr: AA01         Prepared: 03/15/19 12:30         Analyst: het	Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9C1070	Instr: [CALC] 2.3 Instr: [CALC] 2.8 Instr: AA06 		Prepared: 0 0.20 Prepared: 0 0.20 Prepared: 0 0.10	03/19/19 17:50 mg/l 03/19/19 17:49 mg/l 03/19/19 17:49 mg/l	1x1 1x1	Analyst: mcs 03/22/19 12:44 Analyst: mcs 03/22/19 12:13 Analyst: mcs 03/22/19 12:13	Qualifier
Method: EPA 365.1         Batch ID: W9C0859         Instr: AA01         Prepared: 03/15/19 12:30         Analyst: het	Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9C1070	Instr: [CALC] 2.3 Instr: [CALC] 2.8 Instr: AA06 1.3 Instr: AA06	0.050	Prepared: 0           0.20           Prepared: 0           0.20           Prepared: 0           0.10           Prepared: 0	)3/19/19 17:50 mg/l )3/19/19 17:49 mg/l )3/19/19 17:49 mg/l )3/19/19 17:50	1x1 1x1 1x1	Analyst: mcs 03/22/19 12:44 Analyst: mcs 03/22/19 12:13 Analyst: mcs 03/22/19 12:13 Analyst: mcs	Qualifier
	Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9C1070 Batch ID: W9C1072	Instr: [CALC] 2.3 Instr: [CALC] 2.8 Instr: AA06 1.3 Instr: AA06 0.76	0.050	Prepared: 0           0.20           Prepared: 0           0.20           Prepared: 0           0.10	03/19/19 17:50 mg/l 03/19/19 17:49 mg/l 03/19/19 17:49 mg/l 03/19/19 17:50 mg/l	1x1 1x1 1x1	Analyst: mcs 03/22/19 12:44 Analyst: mcs 03/22/19 12:13 Analyst: mcs 03/22/19 12:13 Analyst: mcs 03/22/19 12:44	Qualifier
Phosphorus as P, Total         1.0         0.014         0.10         mg/l         5x2         03/20/19 13:20         M-06	Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9C1070 Batch ID: W9C1072	Instr: [CALC] 2.3 Instr: [CALC] 2.8 Instr: AA06 1.3 Instr: AA06 0.76 Instr: AA01	0.050	Prepared: 0           0.20           Prepared: 0           0.20           Prepared: 0           0.10           Prepared: 0           0.10           Prepared: 0           0.10	13/19/19 17:50 mg/l 13/19/19 17:49 mg/l 13/19/19 17:49 mg/l 13/19/19 17:50 mg/l	1x1 1x1 1x1 1x1 1x1	Analyst: mcs         03/22/19 12:44         Analyst: mcs         03/22/19 12:13         Analyst: mcs         03/22/19 12:13         Analyst: mcs         03/22/19 12:14         Analyst: mcs         03/22/19 12:13         Analyst: mcs         03/22/19 12:14         Analyst: het	Qualifier
	Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN Method: EPA 351.2 TKN, Soluble Method: EPA 353.2 NO2+NO3 as N	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9C1070 Batch ID: W9C1072 Batch ID: W9C0813	Instr: [CALC] 2.3 Instr: [CALC] 2.8 Instr: AA06 1.3 Instr: AA06 0.76 Instr: AA01 1.5	0.050	Prepared:         0           0.20         Prepared:         0           Prepared:         0         0.20           Prepared:         0         0.10           Prepared:         0         0.10           Prepared:         0         0.20           Prepared:         0         0.20	)3/19/19 17:50 mg/l )3/19/19 17:49 mg/l )3/19/19 17:49 mg/l )3/19/19 17:50 mg/l )3/14/19 15:34 mg/l	1x1 1x1 1x1 1x1 1x1	Analyst: mcs 03/22/19 12:44 Analyst: mcs 03/22/19 12:13 Analyst: mcs 03/22/19 12:13 Analyst: mcs 03/22/19 12:44 Analyst: het 03/15/19 13:00	Qualifier

 0.10
 mg/l
 5x2
 03/20/19 13:20

 Prepared:
 03/15/19 12:34
 Analyst: het

 0.010
 mg/l
 1x1
 03/20/19 13:41

Method: EPA 365.1

Phosphorus, Dissolved

Instr: AA01

0.10

0.0014

Batch ID: W9C0861



FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Project Number: TMDL Study March. 2019 P6040555

**Reported:** 04/17/2019 15:03

Project Manager: Kelly Hahs

(Continued)

Sample Results

TMDL-SA

Sampled: 03/13/19 8:45 by K. Hahs, K.Fortner

9C14011-07 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Paramet	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/19/19 17:50		Analyst: mcs	
METHOD *** Dissolved Nitrogen		2.2		0.20	mg/l	1x1	03/22/19 12:44	
		<b>L.L</b>		0.20	Шġл	141	05/22/19 12:44	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 0	3/19/19 17:49		Analyst: mcs	
Nitrogen, Total		2.5		0.20	mg/l	1x1	03/22/19 12:13	
Method: EPA 351.2	Batch ID: W9C1070	Instr: AA06		Prepared: 0	3/19/19 17:49		Analyst: mcs	
TKN		0.32	0.050	0.10	mg/l	1x1	03/22/19 12:13	
Method: EPA 351.2	Batch ID: W9C1072	Instr: AA06		Prepared: 0	3/19/19 17:50		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	03/22/19 12:44	
Method: EPA 353.2	Batch ID: W9C0813	Instr: AA01		Prepared: 0	3/14/19 15:34		Analyst: het	
NO2+NO3 as N		2.2	0.083	0.20	mg/l	1x1	03/15/19 12:42	
Method: EPA 365.1	Batch ID: W9C0859	Instr: AA01		Prepared: 0	3/15/19 12:30		Analyst: het	
Phosphorus as P, Total		0.13	0.0014	0.010	mg/l	1x1	03/20/19 13:06	
Method: EPA 365.1	Batch ID: W9C0861	Instr: AA01		Prepared: 0	3/15/19 12:34		Analyst: het	
Phosphorus, Dissolved		0.040	0.0014	0.010	mg/l	1x1	03/20/19 13:42	



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study March. 2019 P6040555

**Reported:** 04/17/2019 15:03

Project Manager: Kelly Hahs

Conventional Chemistry/Physical Parameters by APH.	A/EPA/AS	M Methods									
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
Batch: W9C0813 - EPA 353.2											
Blank (W9C0813-BLK1)					Prepared: 03/14/19	Analyzed:	03/15/19	)			
NO2+NO3 as N		0.083	0.20	mg/l							
LCS (W9C0813-BS1)					Prepared: 03/14/19	Analyzed:	03/15/19	)			
NO2+NO3 as N	0.940	0.083	0.20	mg/l	1.00		94	90-110			
Matrix Spike (W9C0813-MS1) NO2+NO3 as N	Source: 9	0.083	0.20	mg/l	Prepared: 03/14/19 2.00	Analyzed: 1.71	100	90-110			
NO2 1100 US 11	0.72	0.000	0.20	ing/i	2.00	1.7 1	100	50-110			
Matrix Spike (W9C0813-MS2)		C14011-07			Prepared: 03/14/19	-					
NO2+NO3 as N	4.23	0.083	0.20	mg/l	2.00	2.23	100	90-110			
Matrix Spike Dup (W9C0813-MSD1)	Source: 9	C14011-05			Prepared: 03/14/19	Analyzed:	03/15/19	1			
NO2+NO3 as N	3.75	0.083	0.20	mg/l	2.00	1.71	102	90-110	0.8	20	
Matrix Spike Dup (W9C0813-MSD2)	Source: 0	C14011-07			Proparad: 02/14/10	Applyzod	02/15/10				
NO2+NO3 as N	4.24	0.083	0.20	mg/l	Prepared: 03/14/19 2.00	2.23	100	90-110	0.2	20	
Batch: W9C0859 - EPA 365.1											
Blank (W9C0859-BLK1)					Prepared: 03/15/19	Analyzed:	03/20/19	1			
Phosphorus as P, Total		0.0014	0.010	mg/l							
LCS (W9C0859-BS1)					Prepared: 03/15/19	Analyzed:	03/20/19				
Phosphorus as P, Total	0.0489	0.0014	0.010	mg/l	0.0500	/illuly2cu.	98	90-110			
Matrix Spike (W9C0859-MS1) Phosphorus as P, Total		0.0014	0.010	mg/l	Prepared: 03/15/19 0.0500	Analyzed: 0.0275	03/20/19 103	90-110			
Filospilorus as F, Total	0.0790	0.0014	0.010	mg/i	0.0300	0.0275	105	90-110			
Matrix Spike Dup (W9C0859-MSD1)		C14011-05			Prepared: 03/15/19	-					
Phosphorus as P, Total	0.0796	0.0014	0.010	mg/l	0.0500	0.0275	104	90-110	0.8	20	
Batch: W9C0861 - EPA 365.1											
Blank (W9C0861-BLK1)					Prepared: 03/15/19	Analuzada	02/20/10				
Phosphorus, Dissolved	ND	0.0014	0.010	mg/l	riepareu. 03/13/13	Analyzeu.	03/20/19				
•				-							
LCS (W9C0861-BS1)	0.0405	0.0014	0.040		Prepared: 03/15/19	Analyzed:					
Phosphorus, Dissolved	0.0495	0.0014	0.010	mg/l	0.0500		99	90-110			
Matrix Spike (W9C0861-MS1)	Source: 9	C14011-05			Prepared: 03/15/19	Analyzed:	03/20/19	)			
Phosphorus, Dissolved	0.0630	0.0014	0.010	mg/l	0.0500	0.0119	102	90-110			
Matrix Spike Dup (W9C0861-MSD1)	Source: 9	C14011-05			Prepared: 03/15/19	Analyzed:	03/20/19				
Phosphorus, Dissolved	0.0628	0.0014	0.010	mg/l	0.0500	0.0119	102	90-110	0.3	20	
				-							
Batch: W9C1070 - EPA 351.2											
Blank (W9C1070-BLK1)		0.055	0.45		Prepared: 03/19/19	Analyzed:	03/22/19	1			
TKN	ND	0.050	0.10	mg/l							
Blank (W9C1070-BLK2)					Prepared: 03/19/19	Analyzed:	03/28/19				
TKN		0.050	0.10	mg/l		-					
LCS (W9C1070-BS1)					Pronarod. 02/10/10	Analuzad	03/22/10				
TKN	1.04	0.050	0.10	mg/l	Prepared: 03/19/19 1.00	Analyzed:	104				
LCS (W9C1070-BS2)	0.004	0.050	0.40		Prepared: 03/19/19	Analyzed:					
ΤΚΝ	- 0.901	0.050	0.10	mg/l	1.00		90	90-110			
9C14011											Page 7 o



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study March. 2019 P6040555

**Reported:** 04/17/2019 15:03

Project Manager: Kelly Hahs

(Continued)

### Quality Control Results

Conventional Chemistry/Physical Parameters b	y APHA/EPA/AST	M Methods	(Continue	ed)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W9C1070 - EPA 351.2 (Continued)											
LCS (W9C1070-BS2)				Prep	ared: 03/19/1	9 Analyzed:	03/28/19	Ð			
Matrix Spike (W9C1070-MS1)	Source: 90	14011-05		Prep	ared: 03/19/1	9 Analyzed:	03/22/19	Ð			
ТКМ	0.887	0.050	0.10	mg/l	1.00	0.120	77	90-110			MS-01
Matrix Spike Dup (W9C1070-MSD1)	Source: 9C14011-05 Prepared: 03/19/19 Analyzed: 03/22/19										
TKN	1.11	0.050	0.10	mg/l	1.00	0.120	99	90-110	23	10	MS-01
Batch: W9C1072 - EPA 351.2											
Blank (W9C1072-BLK1)				Prep	ared: 03/19/1	9 Analyzed:	03/22/19	Ð			
TKN, Soluble	ND	0.050	0.10	mg/l							
Blank (W9C1072-BLK2)				Prep	ared: 03/19/1	9 Analyzed:	03/28/19	Ð			
TKN, Soluble	ND	0.050	0.10	mg/l							
LCS (W9C1072-BS1)				Prep	ared: 03/19/1	9 Analyzed:	03/22/19	Ð			
TKN, Soluble	0.973	0.050	0.10	mg/l	1.00		97	90-110			
LCS (W9C1072-BS2)				Prep	ared: 03/19/1	9 Analyzed:	03/28/19				
TKN, Soluble	0.907	0.050	0.10	mg/l	1.00		91	90-110			
Matrix Spike (W9C1072-MS1)	Source: 90	214011-02		Prep	ared: 03/19/1	9 Analyzed:	03/22/19				
TKN, Soluble	1.24	0.050	0.10	mg/l	1.00	0.181	105	90-110			
Matrix Spike Dup (W9C1072-MSD1)	Source: 90	214011-02		Prep	ared: 03/19/1	9 Analyzed:	03/22/19	Ð			
TKN, Soluble	0.989	0.050	0.10	mg/l	1.00	0.181	81	90-110	22	10	MS-01



FINAL REPORT

Ventura County Watershed Protection District

#### 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study March. 2019 P6040555

**Reported:** 04/17/2019 15:03

Project Manager: Kelly Hahs

### Notes and Definitions

ltem	Definition
M-06	Due to the high concentration of analyte inherent in the sample, sample was diluted prior to preparation. The MDL and MRL were raised due to this dilution.
MS-01	The spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
Dil	Dilution
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
MDA	Minimum Detectable Activity
NR	Not Reportable
TIC	Tentatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal standard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified. All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.

### Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients TMDL (VR Algae TMDL)

**Comprehensive Monitoring Program** 

	9209052
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### CHAIN-OF-CUSTODY RECORD

CLIENT:	Ventura County Watershed Protection District (Master Agreement WECKLABORATOFY19MA01, Project P6040555)

SAMPLING EVENT:	APRIL 2019	
SAMPLING DATE:	4/8/2019	
SAMPLERS:	K. HAHS E. LOMELI	
	· · · · ·	

### **GRAB SAMPLES**

SAMPLE ID	DATE	/TIME	Total Nitrogen, Total Phosphorus	Dissolved Nitrogen, Dissolved Phosphorus **	Nitrate + Nitrite as Nitrogen		** FIELD FILTERED
TMDL-Est	4/8/19	14:15	x	x	x		
TMDL-R1		13:15	x	x	x		
TMDL-R2		12:20	x	x	x		
TMDL-R3		11:20	х	x	x		
TMDL-R4		09:20	x	x	x		
TMDL-CL		08:10	x	x	x		•
TMDL-SA		09:55	x	x	x		

Signature: Sturn J. Com	Signature:
Print Name: Steven S. Green	Print Name: 1 las AVG. Varsa
Affiliation: VCWPD	Affiliation: MARICE Coly
Received Date/Time: 4/@/ 2019 090	Received Date/Time: 4/9/14 1200
Relinquished Date/Time: 4/9/2019 12:00pm	Relinquished Date/Time:

	1
Signature in the second	Signature: Tolimiputh
Print Name: ( hor Marano.	Print Name: JAIMCGONEL
Affiliation: MMA	Affiliation: Walk Labs
Received Date/Time: 4/8/19 405	Received Date/Time: 4/9/9 /ULS
Relinguished Date/Time:	Relinquished Date/Time:

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):



**FINAL REPORT** 

Work Orders:	9D09052	Report Date:	5/01/2019
		Received Date:	4/9/2019
Proiect:	TMDL Study April. 2019 P6040555	Turnaround Time:	Normal
,		Phones:	(805) 658-4375
		Fax:	(805) 654-3350
Attn:	Kelly Hahs	P.O. #:	WECKLABORATOFY1 9MA01
Client:	Ventura County Watershed Protection District 800 South Victoria Avenue Ventura, CA 93009	Billing Code:	JMAGI

### EPA-UCMR #CA00211 • HW-DOH # • ISO 17025 #L2457.01 • LACSD #10143 • NELAP-CA #04229CA • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Kelly Hahs,

Enclosed are the results of analyses for samples received 4/09/19 with the Chain-of-Custody document. The samples were received in good condition, at 2.8 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

**Reviewed by:** 

Brandon Gee Operations Manager/Senior PM





FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study April. 2019 P6040555

**Reported:** 05/01/2019 12:07

Project Manager: Kelly Hahs

### Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
TMDL-Est	K. Hahs, E. Lomeli	9D09052-01	Water	04/09/19 14:15	
TMDL-R1	K. Hahs, E. Lomeli	9D09052-02	Water	04/09/19 13:15	
TMDL-R2	K. Hahs, E. Lomeli	9D09052-03	Water	04/09/19 12:20	
TMDL-R3	K. Hahs, E. Lomeli	9D09052-04	Water	04/09/19 11:20	
TMDL-R4	K. Hahs, E. Lomeli	9D09052-05	Water	04/09/19 09:20	
TMDL-CL	K. Hahs, E. Lomeli	9D09052-06	Water	04/09/19 08:10	
TMDL-SA	K. Hahs, E. Lomeli	9D09052-07	Water	04/09/19 09:55	



FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study April. 2019 P6040555

**Reported:** 05/01/2019 12:07

Project Manager: Kelly Hahs

Sample Results	5
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Sample:	TMDL-Est					Sam	pled: 04,	/09/19 14:15 by K. Hal	hs, E. Lomeli
	9D09052-01 (Water)								
Analyte			Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional	Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods							
Method: *** METHOD ***	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 04/	15/19 11:31		Analyst: mcs	
Dissolved	l Nitrogen		1.6		0.20	mg/l	1x1	04/17/19 13:31	
Method: _Va	arious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 04/	15/19 11:31		Analyst: mcs	
Nitrogen,	Total		2.9		0.20	mg/l	1x1	04/17/19 13:04	
Method: EPA	A 351.2	Batch ID: W9D0594	Instr: AA06		Prepared: 04/	09/19 15:15		Analyst: mcs	
TKN, Solu	ıble		0.059	0.050	0.10	mg/l	1x1	04/17/19 13:31	J
Method: EPA	A 351.2	Batch ID: W9D0595	Instr: AA06		Prepared: 04/	09/19 15:17		Analyst: mcs	
TKN			1.3	0.050	0.10	mg/l	1x1	04/17/19 13:04	
Method: EP/	A 353.2	Batch ID: W9D0908	Instr: AA01		Prepared: 04/	15/19 11:31		Analyst: mat	
NO2+NO3	as N		1.6	0.083	0.20	mg/l	1x1	04/16/19 11:06	
Method: EPA	A 365.1	Batch ID: W9D0857	Instr: AA01		Prepared: 04/	12/19 16:12		Analyst: het	
Phosphor	rus as P, Total		0.17	0.0028	0.020	mg/l	2x1	04/22/19 16:38	M-06
Method: EPA	A 365 1	Batch ID: W9D0858	Instr: AA01		Prepared: 04/	12/19 16:20		Analyst: het	
	rus, Dissolved			0.0014	0.010	mg/l	1x1	04/22/19 16:57	
Analyte	9D09052-02 (Water)		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional	Chemistry/Physical Parameters	s by APHA/EPA/ASTM Methods						-	
	DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 04/	15/19 11:31		Analyst: mcs	
	l Nitrogen		1.9		0.20	mg/l	1x1	04/17/19 13:31	
Method: _Va	arious	Batch ID: [CALC]	Instr: [CALC]		Prepared: 04/	15/19 11:31		Analyst: mcs	
Nitrogen,	Total		1.9		0.20	mg/l	1x1	04/17/19 13:04	
Method: EP/	A 351.2	Batch ID: W9D0594	Instr: AA06		Prepared: 04/	09/19 15:15		Analyst: mcs	
TKN, Solu	iple		0.26	0.050	0.10	mg/l	1x1	04/17/19 13:31	
Method: EPA	A 351.2	Batch ID: W9D0595	Instr: AA06		Prepared: 04/	09/19 15:17		Analyst: mcs	
TKN			0.28	0.050	0.10	mg/l	1x1	04/17/19 13:04	
Method: EPA	A 353.2	Batch ID: W9D0908	Instr: AA01		Prepared: 04/	15/19 11:31		Analyst: mat	
NO2+NO3			1.6	0.083	0.20	mg/l	1x1	04/16/19 11:03	
Method: EPA	A 365.1	Batch ID: W9D0857	Instr: AA01		Prepared: 04/	12/19 16:12		Analyst: het	
	rus as P, Total			0.0014	0.010	mg/l	1x1	04/22/19 16:34	
Method: EPA	A 365.1	Batch ID: W9D0858	Instr: AA01		Prepared: 04/	12/19 16·20		Analyst: het	
						,			

Phosphorus, Dissolved

0.011

0.0014

0.010

mg/l

1x1

04/22/19 17:01



FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Project Number: TMDL Study April. 2019 P6040555

**Reported:** 05/01/2019 12:07

Project Manager: Kelly Hahs

(Continued)

Sample Results

TMDL-R2

Sampled: 04/09/19 12:20 by K. Hahs, E. Lomeli

9D09052-03 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Paramet	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC METHOD ***	Batch ID: [CALC]	Instr: [CALC]		Prepared: 04	/15/19 11:31		Analyst: mcs	
Dissolved Nitrogen		2.0		0.20	mg/l	1x1	04/17/19 13:31	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		Prepared: 04	l/15/19 11:31		Analyst: mcs	
Nitrogen, Total		2.0		0.20	mg/l	1x1	04/17/19 13:04	
Method: EPA 351.2	Batch ID: W9D0594	Instr: AA06		Prepared: 04	1/09/19 15:15		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	04/17/19 13:31	
Method: EPA 351.2	Batch ID: W9D0595	Instr: AA06		Prepared: 04	4/09/19 15:17		Analyst: mcs	
TKN		ND	0.050	0.10	mg/l	1x1	04/17/19 13:04	
Method: EPA 353.2	Batch ID: W9D0908	Instr: AA01		Prepared: 04	l/15/19 11:31		Analyst: mat	
NO2+NO3 as N		2.0	0.083	0.20	mg/l	1x1	04/16/19 11:07	
<b>Method:</b> EPA 365.1	Batch ID: W9D0857	Instr: AA01		Prepared: 04	l/12/19 16:12		Analyst: het	
Phosphorus as P, Total		0.037	0.0014	0.010	mg/l	1x1	04/22/19 16:40	
Method: EPA 365.1	Batch ID: W9D0858	Instr: AA01		Prepared: 04	/12/19 16:20		Analyst: het	
Phosphorus, Dissolved		0.027	0.0014	0.010	mg/l	1x1	04/22/19 17:03	
Sample: TMDL-R3 9D09052-04 (Water)					Sam	pled: 04/	′09/19 11:20 by K. Hah	ıs, E. Lomeli
Analyte								
		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Paramet	ers by APHA/EPA/ASTM Methods	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Paramet Method: *** DEFAULT SPECIFIC METHOD ***	ters by APHA/EPA/ASTM Methods Batch ID: [CALC]	Result	MDL		<b>Units</b>	Dil	Analyzed Analyst: mcs	Qualifier
Method: *** DEFAULT SPECIFIC	•		MDL			Dil 1x1	-	Qualifier
Method: *** DEFAULT SPECIFIC METHOD ***	•	Instr: [CALC]	MDL	<b>Prepared:</b> 04	1/15/19 11:31		Analyst: mcs	Qualifier
Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	Batch ID: [CALC]	Instr: [CALC]	MDL	<b>Prepared:</b> 04	l/15/19 11:31 mg/l		Analyst: mcs 04/17/19 13:31	Qualifier
Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	Batch ID: [CALC]	Instr: [CALC] 2.2 Instr: [CALC]	MDL	Prepared: 04 0.20 Prepared: 04 0.20	I/15/19 11:31 mg/l I/15/19 11:31	1x1	<b>Analyst:</b> mcs 04/17/19 13:31 <b>Analyst:</b> mcs	Qualifier
Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	Batch ID: [CALC] Batch ID: [CALC]	Instr: [CALC] 2.2 Instr: [CALC] 2.1	<b>MDL</b>	Prepared: 04 0.20 Prepared: 04 0.20	l/15/19 11:31 mg/l l/15/19 11:31 mg/l	1x1	Analyst: mcs 04/17/19 13:31 Analyst: mcs 04/17/19 13:04	Qualifier
Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC]	Instr: [CALC] 2.2 Instr: [CALC] 2.1 Instr: AA06		Prepared: 04 0.20 Prepared: 04 0.20 Prepared: 04 0.10	I/15/19 11:31 mg/l I/15/19 11:31 mg/l I/09/19 15:15	1x1 1x1	Analyst: mcs 04/17/19 13:31 Analyst: mcs 04/17/19 13:04 Analyst: mcs	Qualifier
Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN, Soluble	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9D0594	Instr: [CALC] 2.2 Instr: [CALC] 2.1 Instr: AA06 0.36		Prepared: 04 0.20 Prepared: 04 0.20 Prepared: 04 0.10	I/15/19 11:31 mg/l I/15/19 11:31 mg/l I/09/19 15:15 mg/l	1x1 1x1	Analyst: mcs           04/17/19 13:31           Analyst: mcs           04/17/19 13:04           Analyst: mcs           04/17/19 13:04           Analyst: mcs           04/17/19 13:31	Qualifier
Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN, Soluble Method: EPA 351.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9D0594	Instr: [CALC] 2.2 Instr: [CALC] 2.1 Instr: AA06 0.36 Instr: AA06	0.050	Prepared: 04 0.20 Prepared: 04 0.20 Prepared: 04 0.10 Prepared: 04 0.10	I/15/19 11:31 mg/l I/15/19 11:31 mg/l I/09/19 15:15 mg/l I/09/19 15:17	1x1 1x1 1x1	Analyst: mcs           04/17/19 13:31           Analyst: mcs           04/17/19 13:04           Analyst: mcs           04/17/19 13:31           Analyst: mcs           04/17/19 13:31	Qualifier
Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN, Soluble Method: EPA 351.2 TKN	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9D0594 Batch ID: W9D0595	Instr: [CALC] 2.2 Instr: [CALC] 2.1 Instr: AA06 0.36 Instr: AA06 0.33	0.050	Prepared: 04 0.20 Prepared: 04 0.20 Prepared: 04 0.10 Prepared: 04 0.10	I/15/19 11:31 mg/l I/15/19 11:31 mg/l I/09/19 15:15 mg/l I/09/19 15:17 mg/l	1x1 1x1 1x1	Analyst: mcs           04/17/19 13:31           Analyst: mcs           04/17/19 13:04           Analyst: mcs           04/17/19 13:31           Analyst: mcs           04/17/19 13:31           Analyst: mcs           04/17/19 13:31	Qualifier
Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2 TKN, Soluble Method: EPA 351.2 TKN Method: EPA 353.2	Batch ID: [CALC] Batch ID: [CALC] Batch ID: W9D0594 Batch ID: W9D0595	Instr: [CALC] 2.2 Instr: [CALC] 2.1 Instr: AA06 0.36 Instr: AA06 0.33 Instr: AA01	0.050	Prepared: 04           0.20           Prepared: 04           0.20           Prepared: 04           0.10           Prepared: 04           0.10           Prepared: 04           0.10           Prepared: 04           0.10           Prepared: 04           0.10	I/15/19 11:31 mg/l I/15/19 11:31 mg/l I/09/19 15:15 mg/l I/09/19 15:17 mg/l	1x1 1x1 1x1 1x1	Analyst: mcs         04/17/19 13:31         Analyst: mcs         04/17/19 13:04         Analyst: mcs         04/17/19 13:31         Analyst: mcs         04/17/19 13:31         Analyst: mcs         04/17/19 13:04	Qualifier

Method: EPA 365.1

9D09052

Phosphorus, Dissolved

Instr: AA01

0.0068

0.0014

Prepared: 04/12/19 16:20

mg/l

1x1

0.010

Batch ID: W9D0858

.1

Analyst: het 04/22/19 17:04



FINAL REPORT

#### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Project Number: TMDL Study April. 2019 P6040555

**Reported:** 05/01/2019 12:07

Project Manager: Kelly Hahs

(Continued)

Sample Results

TMDL-R4

Sampled: 04/09/19 9:20 by K. Hahs, E. Lomeli

9D09052-05 (Water)								
Analyte		Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Conventional Chemistry/Physical Paramete	ers by APHA/EPA/ASTM Methods							
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]		Prepared: 04	4/15/19 11:31		Analyst: mcs	
METHOD ***				0.00			0447404004	
Dissolved Nitrogen		1.8		0.20	mg/l	1x1	04/17/19 13:31	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]		•	4/15/19 11:31		Analyst: mcs	
Nitrogen, Total		1.8		0.20	mg/l	1x1	04/17/19 13:04	
Method: EPA 351.2	Batch ID: W9D0594	Instr: AA06		Prepared: 04	4/09/19 15:15		Analyst: mcs	
TKN, Soluble		ND	0.050	0.10	mg/l	1x1	04/17/19 13:31	
Method: EPA 351.2	Batch ID: W9D0595	Instr: AA06		Prepared: 04	4/09/19 15:17		Analyst: mcs	
TKN		ND	0.050	0.10	mg/l	1x1	04/17/19 13:04	
Method: EPA 353.2	Batch ID: W9D0908	Instr: AA01		Prepared: 04	4/15/19 11:31		Analyst: mat	
NO2+NO3 as N		1.8	0.083	0.20	mg/l	1x1	04/16/19 11:10	
<b>Method:</b> EPA 365.1	Batch ID: W9D0857	Instr: AA01		Prepared: 04	4/12/19 16:12		Analyst: het	
Phosphorus as P, Total		0.013	0.0014	0.010	mg/l	1x1	04/22/19 16:43	
Phosphorus as P, Total	Batch ID: W9D0858		0.0014	0.010	0	1x1		
	Batch ID: W9D0858	o.013 Instr: AA01 0.0052	0.0014	0.010	mg/l 4/12/19 16:20 mg/l	1x1 1x1	04/22/19 16:43 Analyst: het 04/22/19 17:06	J
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved	Batch ID: W9D0858	Instr: AA01		0.010 Prepared: 04	4/12/19 16:20 mg/l	1x1	<b>Analyst:</b> het 04/22/19 17:06	-
Phosphorus as P, Total       Method: EPA 365.1       Phosphorus, Dissolved       Sample:     TMDL-CL	Batch ID: W9D0858	Instr: AA01		0.010 Prepared: 04	4/12/19 16:20 mg/l	1x1	Analyst: het	-
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved	Batch ID: W9D0858	Instr: AA01		0.010 Prepared: 04	4/12/19 16:20 mg/l	1x1	<b>Analyst:</b> het 04/22/19 17:06	
Phosphorus as P, Total       Method: EPA 365.1       Phosphorus, Dissolved       Sample:     TMDL-CL	Batch ID: W9D0858	Instr: AA01		0.010 Prepared: 04	4/12/19 16:20 mg/l	1x1	<b>Analyst:</b> het 04/22/19 17:06	
Phosphorus as P, Total         Method: EPA 365.1       Phosphorus, Dissolved         Sample:       TMDL-CL       9D09052-06 (Water)		Instr: AA01	0.0014	0.010 Prepared: 0 0.010	4/12/19 16:20 mg/l San	1x1 npled: 04	Analyst: het 04/22/19 17:06 /09/19 8:10 by K. Hal	ns, E. Lomeli
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-CL 9D09052-06 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC		Instr: AA01	0.0014	0.010 Prepared: 0- 0.010 MRL	4/12/19 16:20 mg/l San	1x1 npled: 04	Analyst: het 04/22/19 17:06 /09/19 8:10 by K. Hal	ns, E. Lomeli
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-CL 9D09052-06 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD ***	ers by APHA/EPA/ASTM Methods	Instr: AA01 0.0052 Result Instr: [CALC]	0.0014	0.010 Prepared: 04 0.010 MRL Prepared: 04	4/12/19 16:20 mg/l San Units 4/15/19 11:31	1x1 npled: 04 Dil	Analyst: het 04/22/19 17:06 /09/19 8:10 by K. Hal Analyzed Analyst: mcs	ns, E. Lomeli
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-CL 9D09052-06 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC	ers by APHA/EPA/ASTM Methods	Instr: AA01 0.0052 Result	0.0014	0.010 Prepared: 0- 0.010 MRL	4/12/19 16:20 mg/l San	1x1 npled: 04	Analyst: het 04/22/19 17:06 /09/19 8:10 by K. Hal Analyzed	ns, E. Lomeli
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-CL 9D09052-06 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various	ers by APHA/EPA/ASTM Methods	Instr: AA01 0.0052 Result Instr: [CALC] 0.44 Instr: [CALC]	0.0014	0.010 Prepared: 0- 0.010 MRL Prepared: 0- 0.20 Prepared: 0-	4/12/19 16:20 mg/l San Units 4/15/19 11:31 mg/l 4/15/19 11:31	1x1 npled: 04 Dil	Analyst: het 04/22/19 17:06 /09/19 8:10 by K. Hal Analyzed Analyst: mcs 04/17/19 13:31 Analyst: mcs	ns, E. Lomeli
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-CL 9D09052-06 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]	Instr: AA01 0.0052 Result Instr: [CALC] 0.44	0.0014	0.010 Prepared: 04 0.010 MRL Prepared: 04 0.20	4/12/19 16:20 mg/l San Units 4/15/19 11:31 mg/l	1x1 npled: 04 Dil	Analyst: het 04/22/19 17:06 /09/19 8:10 by K. Hal Analyzed Analyst: mcs 04/17/19 13:31	ns, E. Lomeli
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-CL 9D09052-06 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC]	Instr: AA01 0.0052 Result Instr: [CALC] 0.44 Instr: [CALC] 0.51 Instr: AA06	0.0014 MDL	0.010 Prepared: 04 0.010 MRL Prepared: 04 0.20 Prepared: 04 0.20 Prepared: 04	4/12/19 16:20 mg/l San Units 4/15/19 11:31 mg/l 4/15/19 11:31	1x1 npled: 04 Dil 1x1 1x1	Analyst: het 04/22/19 17:06 /09/19 8:10 by K. Hal Analyzed Analyst: mcs 04/17/19 13:31 Analyst: mcs 04/17/19 13:04 Analyst: mcs	ns, E. Lomeli
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-CL 9D09052-06 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Instr: AA01 0.0052 Result Instr: [CALC] 0.44 Instr: [CALC] 0.51	0.0014	0.010 Prepared: 04 0.010 MRL Prepared: 04 0.20 Prepared: 04 0.20	4/12/19 16:20 mg/l San Units 4/15/19 11:31 mg/l 4/15/19 11:31 mg/l	1x1 npled: 04 Dil	Analyst: het 04/22/19 17:06 /09/19 8:10 by K. Hal Analyzed Analyst: mcs 04/17/19 13:31 Analyst: mcs 04/17/19 13:04	ns, E. Lomeli
Phosphorus as P, Total Method: EPA 365.1 Phosphorus, Dissolved Sample: TMDL-CL 9D09052-06 (Water) Analyte Conventional Chemistry/Physical Parameter Method: *** DEFAULT SPECIFIC METHOD *** Dissolved Nitrogen Method: _Various Nitrogen, Total Method: EPA 351.2	ers by APHA/EPA/ASTM Methods Batch ID: [CALC] Batch ID: [CALC]	Instr: AA01 0.0052 Result Instr: [CALC] 0.44 Instr: [CALC] 0.51 Instr: AA06	0.0014 MDL	0.010 Prepared: 04 0.010 MRL Prepared: 04 0.20 Prepared: 04 0.20 Prepared: 04 0.20 Prepared: 04 0.20	4/12/19 16:20 mg/l San Units 4/15/19 11:31 mg/l 4/15/19 11:31 mg/l 4/09/19 15:15	1x1 npled: 04 Dil 1x1 1x1	Analyst: het 04/22/19 17:06 /09/19 8:10 by K. Hal Analyzed Analyst: mcs 04/17/19 13:31 Analyst: mcs 04/17/19 13:04 Analyst: mcs	ns, E. Lomeli

Method: EPA 353.2

NO2+NO3 as N

Method: EPA 365.1

Method: EPA 365.1

Phosphorus as P, Total

Phosphorus, Dissolved

Instr: AA01

Instr: AA01

Instr: AA01

0.0084

0.022

ND

0.083

0.0014

0.0014

Prepared: 04/15/19 11:31

Prepared: 04/12/19 16:12

Prepared: 04/12/19 16:20

mg/l

mg/l

mg/l

0.20

0.010

0.010

Analyst: mat

Analyst: het

Analyst: het

1x1

1x1

1x1

04/16/19 11:11

04/22/19 16:44

04/22/19 17:07

Batch ID: W9D0908

Batch ID: W9D0857

Batch ID: W9D0858

.1



FINAL REPORT

### Ventura County Watershed Protection District 800 South Victoria Avenue

Ventura, CA 93009

Sample:

Analyte

Project Number: TMDL Study April. 2019 P6040555

**Reported:** 05/01/2019 12:07

Project Manager: Kelly Hahs

(Continued)

Sample Results

emistry/Physical Parameters by APHA/EPA/ASTM Metho	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
9D09052-07 (Water)							
TMDL-SA				Sar	mpled: 04/0	9/19 9:55 by K. H	ahs, E. Lomeli

Conventional Chemistry/Physical Paramet	ters by APHA/EPA/ASTM Methods				
Method: *** DEFAULT SPECIFIC	Batch ID: [CALC]	Instr: [CALC]	Prepared: 04/15/19 11:31	Analyst: mcs	
METHOD ***					
Dissolved Nitrogen		1.6	0.20 mg/l	1x1 04/17/19 13:31	
Method: _Various	Batch ID: [CALC]	Instr: [CALC]	Prepared: 04/15/19 11:31	Analyst: mcs	
Nitrogen, Total		1.8	0.20 mg/l	1x1 04/17/19 13:04	
Method: EPA 351.2	Batch ID: W9D0594	Instr: AA06	Prepared: 04/09/19 15:15	Analyst: mcs	
TKN, Soluble		ND 0.050	0.10 mg/l	1x1 04/17/19 13:31	
Method: EPA 351.2	Batch ID: W9D0595	Instr: AA06	Prepared: 04/09/19 15:17	Analyst: mcs	
TKN		<b>0.19</b> 0.050	0.10 mg/l	1x1 04/17/19 13:04	
Method: EPA 353.2	Batch ID: W9D0908	Instr: AA01	Prepared: 04/15/19 11:31	Analyst: mat	
NO2+NO3 as N		<b>1.6</b> 0.083	0.20 mg/l	1x1 04/16/19 11:12	
Method: EPA 365.1	Batch ID: W9D0857	Instr: AA01	Prepared: 04/12/19 16:12	Analyst: het	
Phosphorus as P, Total		<b>0.019</b> 0.0014	0.010 mg/l	1x1 04/22/19 16:46	
Method: EPA 365.1	Batch ID: W9D0858	Instr: AA01	Prepared: 04/12/19 16:20	Analyst: het	
Phosphorus, Dissolved		<b>0.0097</b> 0.0014	0.010 mg/l	1x1 04/22/19 17:09	J



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study April. 2019 P6040555

**Reported:** 05/01/2019 12:07

Project Manager: Kelly Hahs

Quality Control Re	sults
--------------------	-------

Conventional Chemistry/Physical Parameters by APHA	A/EPA/AST	M Methods									
					Spike	Source		%REC		RPD	_
Analyte Batch: W9D0594 - EPA 351.2	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
				Decer	arod: 04/00/10	Analyzed	14/17/10				
Blank (W9D0594-BLK1) TKN, Soluble	ND	0.050	0.10	mg/l	oared: 04/09/19	Analyzea: C	-4/1//19				
LCS (W9D0594-BS1)				Bron	oared: 04/09/19	Analyzada	1/17/10				
TKN, Soluble	0.991	0.050	0.10	mg/l	1.00	Analyzeu. C	99	90-110			
Matrix Spike (W9D0594-MS1)	Source: 9	D09052-04		Prer	oared: 04/09/19	Analyzed: (	)4/17/19				
TKN, Soluble		0.050	0.10	mg/l	1.00	0.357	102	90-110			
Matrix Spike Dup (W9D0594-MSD1)	Source: 9	D09052-04		Prec	oared: 04/09/19	Analyzed: (	04/17/19				
TKN, Soluble		0.050	0.10	mg/l	1.00	0.357	104	90-110	1	10	
Batch: W9D0595 - EPA 351.2											
Blank (W9D0595-BLK1)				Prep	oared: 04/09/19	Analyzed: (	04/17/19				
TKN		0.050	0.10	mg/l		-					
LCS (W9D0595-BS1)				Prep	oared: 04/09/19	Analyzed: (	04/17/19				
ТКМ	0.942	0.050	0.10	mg/l	1.00		94	90-110			
Matrix Spike (W9D0595-MS1)		D09052-04		Prep	oared: 04/09/19	-					
ΤΚΝ	1.25	0.050	0.10	mg/l	1.00	0.329	92	90-110			
Matrix Spike Dup (W9D0595-MSD1)		D09052-04		•	oared: 04/09/19	-					
TKN	1.09	0.050	0.10	mg/l	1.00	0.329	76	90-110	13	10	MS-01
Batch: W9D0857 - EPA 365.1											
Blank (W9D0857-BLK1) Phosphorus as P. Total	0.00324	0.0014	0.010		oared: 04/12/19	Analyzed: (	)4/22/19				J
Phosphorus as P, Total	0.00324	0.0014	0.010	mg/l							J
LCS (W9D0857-BS1) Phosphorus as P, Total	0.0514	0.0014	0.010	Prep mg/l	0.0500	Analyzed: 0	<b>103</b>				
•			0.010								
Matrix Spike (W9D0857-MS1) Phosphorus as P, Total		0.0014	0.010	Prep mg/l	0.0500	Analyzed: 0 0.0299	97	90-110			
•											
Matrix Spike Dup (W9D0857-MSD1) Phosphorus as P, Total		<b>D09052-02</b> 0.0014	0.010	mg/l	0.0500	0.0299	101	90-110	2	20	
Batch: W9D0858 - EPA 365.1											
Blank (W9D0858-BLK1)				Bron	oared: 04/12/19	Analyzada (	14/22/10				
Phosphorus, Dissolved	ND	0.0014	0.010	mg/l	Jareu. 04/12/15	Analyzeu. C	H, 22/ 13				
LCS (W9D0858-BS1)				Prec	oared: 04/12/19	Analyzed: (	)4/22/19				
Phosphorus, Dissolved	0.0495	0.0014	0.010	mg/l	0.0500	···· <b>·</b>	99	90-110			
Matrix Spike (W9D0858-MS1)	Source: 9	D09052-01		Prep	oared: 04/12/19	Analyzed: (	04/22/19				
Phosphorus, Dissolved	0.0610	0.0014	0.010	mg/l	0.0500	0.0131	96	90-110			
Matrix Spike Dup (W9D0858-MSD1)	Source: 9	D09052-01		Prep	oared: 04/12/19	Analyzed: (	94/22/19				
Phosphorus, Dissolved	0.0621	0.0014	0.010	mg/l	0.0500	0.0131	98	90-110	2	20	
Batch: W9D0908 - EPA 353.2											
Blank (W9D0908-BLK1)				Prer	oared: 04/15/19	Analyzed: (	04/16/19				
NO2+NO3 as N	ND	0.083	0.20								



FINAL REPORT

#### Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study April. 2019 P6040555

**Reported:** 05/01/2019 12:07

(Continued)

Project Manager: Kelly Hahs

, 01, 2010 1210,

### Quality Control Results

Conventional Chemistry/Physical Parameters by	APHA/EPA/AST	M Method	s (Continue	ed)							
					Spike	Source		%REC		RPD	
Analyte	Result	MDL	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W9D0908 - EPA 353.2 (Continued)											
LCS (W9D0908-BS1)				Prep	ared: 04/15/1	9 Analyzed:	04/16/19	)			
NO2+NO3 as N	0.971	0.083	0.20	mg/l	1.00		97	90-110			
Matrix Spike (W9D0908-MS1)	Source: 9	D09052-02		Prep	ared: 04/15/1	9 Analyzed:	04/16/19	)			
NO2+NO3 as N	3.77	0.083	0.20	mg/l	2.00	1.64	106	90-110			
Matrix Spike Dup (W9D0908-MSD1)	Source: 9	D09052-02		Prep	ared: 04/15/1	9 Analyzed:	04/16/19	•			
NO2+NO3 as N	3.73	0.083	0.20	mg/l	2.00	1.64	104	90-110	1	20	



FINAL REPORT

Ventura County Watershed Protection District

800 South Victoria Avenue

Ventura, CA 93009

Project Number: TMDL Study April. 2019 P6040555

**Reported:** 05/01/2019 12:07

Project Manager: Kelly Hahs

### Notes and Definitions

stimated conc. detected <mrl and="">MDL. uue to the high concentration of analyte inherent in the sample, sample was diluted prior to preparation. The MDL and MRL were raised due to this ilution. he spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.</mrl>
ilution. he spike recovery for this QC sample is outside of established control limits possibly due to sample matrix interference.
IOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or bove the MDL.
ilution
ample results reported on a dry weight basis
elative Percent Difference
ercent Recovery
ample that was matrix spiked or duplicated.
lethod Detection Limit
he minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. he MRL is also known as Limit of Quantitation (LOQ) and Detection Limit for Reporting (DLR)
linimum Detectable Activity
lot Reportable
entatively Identified Compound (TIC) using mass spectrometry. The reported concentration is relative concentration based on the nearest internal tandard. If the library search produces no matches at, or above 85%, the compound is reported as unknown.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance. An Absence of Total Coliform meets the drinking water standards as established by the California State Water Resources Control Board (SWRCB) All results are expressed on wet weight basis unless otherwise specified. All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS 002.









December 31, 2018

Jenny Newman, Regional Programs Section Chief Regional Water Quality Control Board 320 W. 4th St., Suite 200 Los Angeles, CA 90013

### Subject: 2018 DRY SEASON DATA SUMMARY FOR THE VENTURA RIVER ALGAE TMDL (RESOLUTION NO. R12-011)

Dear Ms. Newman:

Enclosed for your review and consideration is the 2018 Dry Season Data Summary prepared and submitted to document completion of monitoring activities required by the Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients Total Maximum Daily Load, Resolution No. R12-011 (Ventura Algae TMDL) and the Ventura Algae TMDL Comprehensive Monitoring Plan for Receiving Water approved by Regional Water Quality Control Board on October 20, 2014.

This document is being submitted on behalf of the Ojai Valley Sanitary District, County of Ventura, Ventura County Watershed Protection District, City of Ojai, City of Ventura, California Department of Transportation, and the Ventura County Agricultural Irrigated Lands Group (represented by the Farm Bureau of Ventura County).

If you have any comments or questions regarding the attached document, please contact Ewelina Mutkowska at (805) 645-1382 or <u>ewelina.mutkowska@ventura.org</u>.

Sincerely,

Arne Anselm Deputy Director, Ventura County Watershed Protection District

Ms. Jenny Newman December 31, 2018 Page 2 of 2

cc: Renee Purdy, Regional Water Quality Control Board Jeff Pratt, County of Ventura Public Works Agency Glenn Shephard, Ventura County Watershed Protection District Ewelina Mutkowska, Ventura County Public Works Agency Joe Yahner, City of Ventura Greg Grant, City of Ojai Jeff Palmer, Ojai Valley Sanitary District John Krist, Farm Bureau of Ventura County Shirley Pak, California Department of Transportation

## TOTAL MAXIMUM DAILY LOAD FOR ALGAE, EUTROPHIC CONDITIONS, AND NUTRIENTS IN VENTURA RIVER, INCLUDING THE ESTUARY, AND ITS TRIBUTARIES (VR ALGAE TMDL)

## **2018 DRY SEASON DATA SUMMARY**

Submitted to TMDL Responsible Parties Implementing Receiving Water Monitoring Requirements:

City of Ojai City of Ventura County of Ventura Ojai Valley Sanitary District California Department of Transportation Ventura County Agricultural Irrigated Lands Group Ventura County Watershed Protection District

Prepared by:

Ventura County Watershed Protection District November 15, 2018



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### **EXECUTIVE SUMMARY**

On behalf of the Total Maximum Daily Load (TMDL) Responsible Parties, the Ventura County Watershed Protection District (District) began sampling in accordance with the Ventura River Algae TMDL Comprehensive Monitoring Plan for Receiving Waters (CMP) on January 14, 2015. As required by the TMDL, the CMP prescribes year-round monthly water quality monitoring for nutrients and other water quality parameters at one site in the Ventura River Estuary (TMDL-Est), one site in each of the Ventura River reaches 1 – 4, and in two main tributaries, Cañada Larga and San Antonio Creek (TMDL-R1, TMDL-R2, TMDL-R3, TMDL-R4, TMDL-CL and TMDL-SA, respectively). Continuous monitoring of dissolved oxygen (DO) and pH, (both of which also require temperature monitoring) are required at each site every quarter. Conductivity is also measured during the continuous monitoring. The CMP also requires monthly monitoring of algae during the dry season (May – September). This report covers the dry season monitoring from May 2018 – September 2018, including monthly checks for flow at the observations sites, field and laboratory results, and the continuous data logging conducted in May and September 2018.

The Ventura River Watershed has been subjected to increased environmental stresses in recent years. In addition to the ongoing severe drought, the watershed was heavily impacted by the Thomas Fire, which started on December 4, 2017 and was declared contained on January 12, 2018, becoming (at that time) the largest recorded fire in California history. The fire burned most of the open space and forest lands in the watershed, as well as orchards, homes, and other structures from Fillmore to Santa Barbara. Areas that did not burn (mainly the floor of the Ojai Valley) were still subject to heavy ash deposition.

While the drought is not yet over for Ventura County, the county received sufficient rainfall in early 2018 to get many creeks and rivers flowing again, including some that had been dry in the Ventura River watershed. All observation sites were flowing in April and TMDL-CVR (Ventura River at Casitas Vista Road) flowed through September, however connectivity with the upper watershed was lost by June for the remainder of the dry season, with TMDL-H150 (Ventura River at Hwy 150), TMDL-SAB (Ventura River at Santa Ana Blvd), and TMDL-CL completely dry, and TMDL-SA dry upstream with limited flow at the nutrient collection site. TMDL-R4 was dry by August. TMDL-Est through TMDL-R3 are perennial so were sampleable for nutrients and algae throughout the dry season. Flow variations between monitoring sites and events might be due to a combination of factors including geology, weather conditions, inputs, and extractions.

All sampleable sites except for TMDL-R1, TMDL-R2, and TMDL-CL exceeded the seasonal average numeric target for macroalgal cover ( $\leq$ 15% for the estuary and  $\leq$ 30% for the riverine sites). All sites except TMDL-CL and TMDL-SA exceeded the seasonal average numeric target for algal biomass (estuarine phytoplankton seasonal average chlorophyll *a* target of  $\leq$ 20 µg/L, riverine seasonal average chlorophyll *a* target of  $\leq$ 150 mg/m<sup>2</sup>). All measurements for pH were within the numeric target limits except for TMDL-Est and TMDL-CL during the May sampling (monthly and continuous). Levels of DO below the numeric target were measured during periods of low flow and at the low points of the diurnal patterns at some sites. The measured range for total nitrogen was 0.22 mg/L – 4.0 mg/L and total phosphorus was 0.0070 (DNQ) mg/L– 0.52 mg/L.

Hydrolab HL4 water quality sondes have been used for the quarterly two-week continuous monitoring requirement since March 2015. As required by the TMDL, the sondes were deployed in May and September during the 2018 Dry Season. The sondes were calibrated by District staff before each event to ensure calibrations were accurate. Field meter measurements were taken near the sondes during sonde retrieval to check for drift/fouling of the sonde sensors during deployment. The estuary sonde is deployed at a depth of approximately 7-10 feet to avoid exposure if the estuary breaches and to reduce the risk of potential vandalism. Sondes in areas with known siltation issues were deployed higher in the water column. Sondes were deployed at all sites in May, and all sites except TMDL-R4, TMDL-SA, and TMDL-CL in September due to dry conditions. The deployed sondes logged data for a two-week period in the 2<sup>nd</sup> and 3<sup>rd</sup> quarters beginning on May 1 and September 12, respectively. TMDL-R4 had conductivity errors in May and the TMDL-CL conductivity and DO sensors became fouled during the May deployment. (Conductivity is not a required parameter at these sites.) The DO sensor at TMDL-CL became fouled during the September deployment. All other required data was successfully collected.

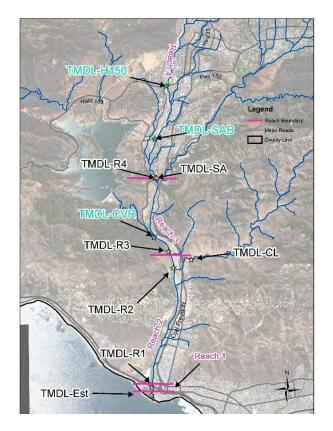
Sampling event data, including field data sheets and laboratory reports, will be provided with the 2018 Annual Report.Ventura River Algae TMDLiiNovember 2018Dry Season Data Summary

### BACKGROUND

The Water Quality Control Plan for the Los Angeles Region was amended on December 6, 2012 to incorporate the Total Maximum Daily Load for Algae, Eutrophic Conditions, and Nutrients in the Ventura River, including the Estuary, and its Tributaries (VR Algae TMDL). The VR Algae TMDL became effective on June 28, 2013 and required the development and implementation of a comprehensive monitoring plan (CMP) for receiving water monitoring to assess numeric attainment and measure in-stream nutrient concentrations. The CMP submitted by the Responsible Parties (Ojai Valley Sanitary District, Ventura County Watershed Protection District, County of Ventura, City of Ojai, City of San Buenaventura (Ventura), California Department of Transportation, and the Ventura County Agricultural Irrigated Lands Group (represented by the Farm Bureau of Ventura County)) was approved by the Los Angeles Regional Water Quality Control Board (Regional Board) on October 20, 2014.

On November 18, 2014, the Ventura County Watershed Protection District (District) was retained by the Responsible Parties to conduct the monitoring in accordance with the CMP for up to 5 years. The CMP required sampling to begin no later than 90 days after the Los Angeles Regional Water Quality Control Board approved the CMP, which equates to January 18, 2015. Monitoring began on January 14, 2015.

As required by the TMDL, the CMP prescribes year-round monthly water quality monitoring for nutrients and other water quality parameters at one site in the Ventura River Estuary, one site in each of the Ventura River reaches 1 – 4, and in two main tributaries, Cañada Larga and San Antonio Creek. Continuous monitoring of dissolved oxygen (DO) and pH, (both of which also require temperature monitoring) are required at each site every quarter. Conductivity is also measured during the continuous monitoring. The CMP also requires monthly monitoring of algae (chlorophyll a and percent macroalgal cover) during the dry season (May – September). This report is a summary of dry season monitoring data from May – September 2018, including the continuous data logging conducted in May and September.



#### FIGURE 1. SAMPLING SITES AND FLOW OBSERVATION LOCATIONS

Note: Yellow site markers (black labels) are sampling locations. Blue site markers (blue labels) are flow observation locations

Ventura River Algae TMDL Dry Season Data Summary

### **ACCESS PERMISSION**

In 2015, to allow for continuity of site locations, five-year easements were sought from the property owners where the sites are located for the fee of \$250 per term. The temporary easements expire five years from the date of approval (early 2020). Two property owners declined the five-year easement request but signed a revocable access permit instead. The sites affected by the permits are TMDL-R2 (which was moved upstream of the site listed in the CMP because the owner of that parcel denied the access request) and TMDL-SA directly above the confluence with the Ventura River. TMDL-R2 was sampled approximately 200 meters upstream of the OVSD site (OVSD-R5) for monthly monitoring and approximately 300 meters upstream for continuous monitoring to be entirely on permitted property.

### MONTHLY MONITORING

The 2018 dry season sampling occurred monthly from May through September as required. There was limited connectivity between the upper and lower watershed in May but none after that, as shown in Table 1. All TMDL sample sites had sampleable flow for nutrients and algae sampling in May, however by June TMDL-CL was completely dry and TMDL-SA was too dry for algae sampling (TMDL-SA would have been dry in June-September if not for a small spring at the site.) TMDL-R4 was too dry for all sampling after July and TMDL-SA was too dry for nutrient collecting agency are shown in Table 2 (sample sites that were dry are noted as such and shaded grey). Monthly field data is summarized in Table 3 and nutrient data in Table 4. The District contracted with Aquatic Bioassay & Consulting Laboratories, Inc. (ABC) for assistance with the monthly monitoring of chlorophyll *a* and percent cover of algae during the dry season, May to September. Algal biomass and percent cover data are summarized in Table 5, Table 6, and Table 7.

Date	Ventura River at Hwy 150	Ventura River at Santa Ana Blvd	Ventura River at Casitas Vista Road
5/16/2018	6 cfs	Water visible downstream but DRY at bridge	6 cfs
6/4/2018	DRY	DRY	Flowing east end ~ 2 cfs
7/10/2018	DRY	DRY	Flowing east end ~ 2 cfs
8/15/2018	DRY	DRY	Flowing east end ~ 2-3 cfs
9/4/2018	DRY	DRY	Ponded west end. Flowing east end ~ 2-3 cfs

#### TABLE 1. MAY - SEPTEMBER 2018 OBSERVATION SITES

There was no connectivity with the upper watershed after May for the 2018 dry season.

#### TABLE 2. MAY - SEPTEMBER 2018 WATER QUALITY SAMPLE COLLECTION DATE AGENCY

Site	Collecting			Sampling Date	9	
Site	Agency	May 2018	June 2018	July 2018	August 2018	September 2018
TMDL-Est	District/ABC	5/16/2018	6/7/2018	7/10/2018	8/15/2018	9/5/2018
TMDL-R1	District/ABC	5/16/2018	6/7/2018	7/10/2018	8/15/2018	9/5/2018
TMDL-R2	District/ABC	5/16/2018	6/6/2018	7/9/2018	8/14/2018	9/5/2018
TMDL-R3	District/ABC	5/15/2018	6/6/2018	7/9/2018	8/14/2018	9/5/2018
TMDL-R4	District/ABC	5/15/2018	6/6/2018	7/9/2018	(DRY) 8/14/2018	(DRY) 9/4/2018
TMDL-CL	District/ABC	5/15/2018	(DRY) 6/6/2018	(DRY) 7/9/2018	(DRY) 8/14/2018	(DRY) 9/4/2018
TMDL-SA	District/ABC	5/15/2018	(Mostly Dry) 6/4/2018	(Mostly Dry) 7/10/2018	(Mostly Dry) 8/14/2018	(DRY) 9/4/2018

Mostly Dry sites had water present in at least one location in the reach so could be sampled for regular monthly monitoring parameters but did not have sufficient water present to meet algae sampling protocols, so algae monitoring/collection was not conducted. DRY sites had insufficient water present for any sampling to take place.

#### TABLE 3. MAY – SEPTEMBER 2018 FIELD DATA

Site	Sample Date	Sample Time	Berm Status	Flow Field Meter (cfs)	pH Field Meter (pH Units) <i>Numeric</i> Target 6.5 - 8.5	DO Field Meter (mg/L) <i>Numeric</i> <i>Target</i> >7 mg/L	SC Field Meter (μS/cm)	Salinity Field Meter (ppt)	Water Temp Field Meter (°C)
TMDL-Est	5/16/2018	12:55	Open-west end	NA	8.68	12.02	39080	24.9	22.7
TMDL-Est	6/7/2018	9:45	Open-west end	NA	8.42	11.02	7670	4.2	22.1
TMDL-Est	7/10/2018	10:10	Closed	NA	8.06	8.34	4536	2.4	27.2
TMDL-Est	8/15/2018	10:20	Closed	NA	8.27	9.08	3314	1.7	26
TMDL-Est	9/5/2018	13:50	Closed	NA	8.15	7.47	2434	1.3	23.5
TMDL-R1	5/16/2018	11:00	NA	3.73	8.35	9.51	1719	0.9	18.5
TMDL-R1	6/7/2018	7:45	NA	2.69	8.37	9.22	1794	0.9	18.3
TMDL-R1	7/10/2018	7:45	NA	1.93	7.77	6.42	1742	0.9	23.3
TMDL-R1	8/15/2018	7:40	NA	1.3	8.03	7.46	1691	0.9	22.5
TMDL-R1	9/5/2018	11:50	NA	2.03	8.14	7.14	1645	0.8	21
TMDL-R2	5/16/2018	8:20	NA	3.35	8.06	7.42	1255	0.6	18.4
TMDL-R2	6/6/2018	13:10	NA	3.26	8.22	9.15	1327	0.7	21.5
TMDL-R2	7/9/2018	13:00	NA	2.94	8.17	8.91	1305	0.7	26.1
TMDL-R2	8/14/2018	11:15	NA	2.11	8.2	6.66	1315	0.7	25.1
TMDL-R2	9/5/2018	9:45	NA	2.61	7.96	6.84	1269	0.6	22.7
TMDL-R3	5/15/2018	12:00	NA	0.92	8.28	12.94	1152	0.6	21.2
TMDL-R3	6/6/2018	11:05	NA	0.8	8.02	8.69	1176	0.6	20
TMDL-R3	7/9/2018	11:00	NA	1.46	8	9.63	1219	0.6	24.4
TMDL-R3	8/14/2018	9:00	NA	1	7.92	6.74	1219	0.6	22
TMDL-R3	9/5/2018	7:40	NA	1	7.74	6.91	1192	0.6	20.9
TMDL-R4	5/15/2018	8:05	NA	0.69	7.66	8.36	1070	0.5	16.6
TMDL-R4	6/6/2018	8:00	NA	0.24	7.48	6.12	1060	0.5	17.7
TMDL-R4	7/9/2018	8:40	NA	0.02	7.2	5.46	1092	0.5	19.4
TMDL-R4	8/14/2018	8:00	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	9/4/2018	10:00	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	5/15/2018	10:25	NA	0.01	7.25	4.54	1026	0.5	17.3
TMDL-SA	6/6/2018	10:20	NA	0.01	7.2	3.38	1030	0.5	17.5
TMDL-SA	7/9/2018	10:00	NA	0.02	7.11	4.79	1073	0.5	19.2
TMDL-SA	8/14/2018	8:20	NA	<0.01	7.07	5.84	997	0.5	18.3
TMDL-SA	9/4/2018	10:10	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	5/15/2018	14:00	NA	0.035	8.73	10.58	3709	1.9	31.4
TMDL-CL	6/4/2018	13:30	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	7/10/2018	12:15	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	8/14/2018	13:30	NA	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	9/4/2018	8:45	NA	DRY	DRY	DRY	DRY	DRY	DRY

NA: Not applicable. Berm status only applies to the estuary site TMDL-Est. Salinity is included for the TMDL-Est and TMDL-R1 sites to indicate the level of ocean influence at these sites.

Surface flow in the River during this period began downstream of the Santa Ana Blvd Bridge, upstream of TMDL-R4 and continued to the estuary, including through the typically perennial reaches of TMDL-R3 and below. The flow at TMDL-R2 is a combination of the flow in the Ventura River downstream of TMDL-R3 and the discharge from the Ojai Valley Sanitary District's wastewater treatment plant. Flow typically decreased between TMDL-R2 and TMDL-R1. Potential causes for changes in flow include surface/subsurface flow, groundwater interaction, geology and infiltration rates, antecedent moisture, agricultural and urban inputs and extractions, etc. Ponded locations, and those with shallow and/or slow-moving water appear to experience greater variation in measured levels of DO and so ponds are avoided where possible but may not be able to be avoided in all cases.

All monthly measurements for pH were within the numeric target limits except for TMDL-Est on 5/16/18, which was marginally higher than the upper TMDL numeric target. Low levels of DO tended to occur in ponded areas and during periods of low flow, possibly due to the lack of water movement upstream and/or at the measurement location.

Site	Sample Date	Sample Time	P Total EPA 365.1 (mg/L)	P Diss EPA 365.1 (mg/L)	TKN Total EPA 351.2 (mg/L)	TKN Diss EPA 351.2 (mg/L)	N Total Calculated (mg/L)	N Diss Calculated (mg/L)	NO3+ NO2-N EPA 353.2 (mg/L)
TMDL-Est	5/16/2018	12:55	0.065	0.0084 (DNQ)	0.58	0.3	0.58	0.3	<0.083
TMDL-Est	6/7/2018	9:45	0.13	0.042	1.1	0.62	1.2	0.72	0.1 (DNQ)
TMDL-Est	7/10/2018	10:10	0.12	0.091	0.92	0.61	0.92	0.61	<0.083
TMDL-Est	8/15/2018	10:20	0.14	0.19	1.1	0.53	1.2	0.67	0.15 (DNQ)
TMDL-Est	9/5/2018	13:50	0.11	0.025	0.75	0.48	0.75	0.48	<0.083
TMDL-R1	5/16/2018	11:00	0.044	0.022	0.59	0.49	1.4	1.3	0.84
TMDL-R1	6/7/2018	7:45	0.097	0.08	0.7	0.58	1.5	1.4	0.81
TMDL-R1	7/10/2018	7:45	0.18	0.16	0.64	0.68	2.1	2.2	1.5
TMDL-R1	8/15/2018	7:40	0.12	0.088	0.55	0.47	0.55	0.47	<0.083
TMDL-R1	9/5/2018	11:50	0.1	0.09	0.52	0.53	0.93	0.94	0.41
TMDL-R2	5/16/2018	8:20	0.16	0.14	0.52	0.38	2.6	2.4	2
TMDL-R2	6/6/2018	13:10	0.36	0.27	0.75	0.28	2.8	2.3	2
TMDL-R2	7/9/2018	13:00	0.52	0.26	0.72	0.48	4.0	3.8	3.3
TMDL-R2	8/14/2018	11:15	0.26	0.24	0.63	0.57	2.5	2.5	1.9
TMDL-R2	9/5/2018	9:45	0.19	0.17	0.58	0.58	2.3	2.4	1.8
TMDL-R3	5/15/2018	12:00	0.01	0.0072 (DNQ)	0.078 (DNQ)	0.068 (DNQ)	0.6	0.59	0.52
TMDL-R3	6/6/2018	11:05	0.069	0.031	0.39	0.16	0.71	0.49	0.33
TMDL-R3	7/9/2018	11:00	0.092	0.046	0.13	0.11	0.3	0.28	0.17 (DNQ)
TMDL-R3	8/14/2018	9:00	0.024	0.016	0.22	0.11	0.22	0.11	<0.083
TMDL-R3	9/5/2018	7:40	0.0081 (DNQ)	0.01	0.17	0.1	0.28	0.21 (DNQ)	0.11 (DNQ)

#### TABLE 4. MAY - SEPTEMBER 2018 NUTRIENT DATA

Site	Sample Date	Sample Time	P Total EPA 365.1 (mg/L)	P Diss EPA 365.1 (mg/L)	TKN Total EPA 351.2 (mg/L)	TKN Diss EPA 351.2 (mg/L)	N Total Calculated (mg/L)	N Diss Calculated (mg/L)	NO3+ NO2-N EPA 353.2 (mg/L)
TMDL-R4	5/15/2018	8:05	0.0070 (DNQ)	0.0064 (DNQ)	<0.050	<0.050	1.5	1.5	1.5
TMDL-R4	6/6/2018	8:00	0.022	0.021	<0.050	<0.050	1.6	1.6	1.6
TMDL-R4 Field Dup	6/6/2018	8:00	0.025	0.022	0.17	<0.050	1.6	1.5	1.5
TMDL-R4	7/9/2018	8:40	0.055	0.049	0.15	<0.050	1.7	1.5	1.5
TMDL-R4	8/14/2018	8:00	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-R4	9/4/2018	10:00	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-SA	5/15/2018	10:25	0.024	0.012	<0.050	<0.050	1.7	1.7	1.7
TMDL-SA	6/6/2018	10:20	0.032	0.028	<0.050	<0.050	1.6	1.6	1.6
TMDL-SA	7/9/2018	10:00	0.042	0.036	<0.050	<0.050	1.6	1.6	1.6
TMDL-SA	8/14/2018	8:20	0.029	0.017	0.076 (DNQ)	0.055 (DNQ)	0.42	0.39	0.34
TMDL-SA	9/4/2018	10:10	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	5/15/2018	14:00	0.024	0.032	0.83	0.65	0.83	0.65	<0.083
TMDL-CL	6/4/2018	13:30	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	7/10/2018	12:15	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	8/14/2018	13:30	DRY	DRY	DRY	DRY	DRY	DRY	DRY
TMDL-CL	9/4/2018	8:45	DRY	DRY	DRY	DRY	DRY	DRY	DRY

DNQ: Detected Not Quantified (analyte can be positively identified but is below the method reporting limit)

Site	Date	Field Replicate	Number of Transects Collected	Chlorophyll <i>a</i>	Chlorophyll <i>a</i> units	Percent Presence Macroalgae (%)
TMDL-R1	5/16/2018	1	11	240	mg/m <sup>2</sup>	20.95
TMDL-R1	6/7/2018	1	11	390	mg/m <sup>2</sup>	8.57
TMDL-R1	7/10/2018	1	11	180	mg/m <sup>2</sup>	35.92
TMDL-R1	8/15/2018	1	11	160	mg/m <sup>2</sup>	14.29
TMDL-R1	9/5/2018	1	11	87	mg/m <sup>2</sup>	13.46
TMDL-R2	5/16/2018	1	11	300	mg/m <sup>2</sup>	61.22
TMDL-R2	6/6/2018	1	11	330	mg/m <sup>2</sup>	39.42
TMDL-R2	7/9/2018	1	11	200	mg/m <sup>2</sup>	14.85
TMDL-R2	8/14/2018	1	11	340	mg/m <sup>2</sup>	17.48
TMDL-R2	9/5/2018	1	11	200	mg/m <sup>2</sup>	16.67
TMDL-R3	5/15/2018	1	11	280	mg/m <sup>2</sup>	71.43
TMDL-R3	6/6/2018	1	11	520	mg/m <sup>2</sup>	64.08
TMDL-R3	7/9/2018	1	11	160	mg/m <sup>2</sup>	44.76
TMDL-R3	8/14/2018	1	11	93	mg/m <sup>2</sup>	50.48
TMDL-R3	9/5/2018	1	11	100	mg/m <sup>2</sup>	36.54
TMDL-R4	5/15/2018	1	11	210	mg/m <sup>2</sup>	55.24
TMDL-R4	6/6/2018	1	11	150	mg/m <sup>2</sup>	70.00
TMDL-R4	6/6/2018	2	11	120	mg/m <sup>2</sup>	NA

Site	Date	Field Replicate	Number of Transects Collected	Chlorophyll <i>a</i>	Chlorophyll <i>a</i> units	Percent Presence Macroalgae (%)
TMDL-R4	7/9/2018	1	9	130	mg/m <sup>2</sup>	75.56
TMDL-R4	8/14/2018	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-R4	9/4/2018	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-SA	5/15/2018	1	9	36	mg/m <sup>2</sup>	42.16
TMDL-SA	6/6/2018	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-SA	7/9/2018	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-SA	8/14/2018	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-SA	9/4/2018	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-CL	5/15/2018	1	11	83	mg/m <sup>2</sup>	15.38
TMDL-CL	6/4/2018	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-CL	7/10/2018	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-CL	8/14/2018	1	DRY	DRY	mg/m <sup>2</sup>	DRY
TMDL-CL	9/4/2018	1	DRY	DRY	mg/m <sup>2</sup>	DRY

#### TABLE 6. 2018 DRY SEASON RIVERINE SITES AVERAGE MACROALGAL BIOMASS AND COVER

Site	Seasonal Average Biomass (Chlorophyll a)	Seasonal Average Macroalgal Cover
	Numeric Target Seasonal Average 150 mg/m <sup>2</sup> (mg/m <sup>2</sup> )	Numeric Target Seasonal Average ≤ 30% (%)
TMDL-R1	211	18.64
TMDL-R2	274	29.93
TMDL-R3	196	53.46
TMDL-R4	153	66.93
TMDL-SA	36	42.16
TMDL-CL	83	15.38

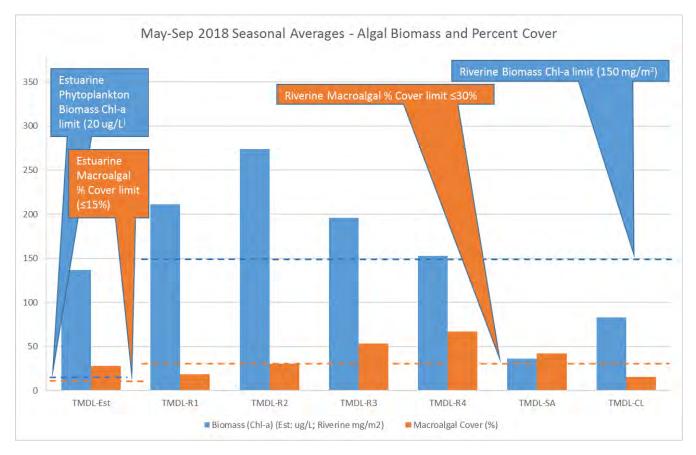
TMDL-SA and TMDL-CL met the riverine seasonal average numeric target for chlorophyll *a*. TMDL-R1, TMDL-R2 and TMDL-CL met the seasonal average numeric target for macroalgal cover. The other riverine sites did not meet the seasonal average numeric targets.

The SWAMP protocol for the riverine sites includes both suspended (floating) and attached (land-based) macroalgae when determining percent cover. The Bight '08 (estuarine) protocol includes measurements of floating algae at a depth of 0.3 meters for four quadrats per transect in addition to measuring algal cover on the shoreline. These variables are included in Table 7. Site TMDL-Est exceeded the seasonal average numeric target for percent cover and phytoplankton biomass (chlorophyll a) in 2018.

#### TABLE 7. 2018 DRY SEASON ESTUARY SITE AVERAGE MACROALGAL BIOMASS AND COVER

Site	Date	Field Replicate	Phytoplankton Biomass Chlorophyll <i>a</i> (µg/L)	Land-Based Macroalgal Cover (%)	Floating Macroalgal Cover (%)
Seasonal Average Numeric Target			20 μg/L	≤ 1	5%
TMDL-Est	5/16/2018	1	46	89.80	0.00
TMDL-Est	6/7/2018	1	40	0.27	0.00
TMDL-Est	7/10/2018	1	34	30.95	19.05
TMDL-Est	8/15/2018	1	520	9.59	0.00
TMDL-Est	9/5/2018	1	44	7.89	0.00
TMDL-Est	Seasonal Average		137	27.70	3.81

#### FIGURE 2. DRY SEASON SEASONAL AVERAGES - CHLOROPHYLL A AND MACROALGAL COVER



Sampling event data, including field data sheets and laboratory reports, will be provided with the 2018 Annual Report.

### FIELD OBSERVATIONS

TMDL-EST: Water level in the estuary fluctuates with the tides. It was very low in May and very high in July, probably related to tide height and sand berm status. Dogs are frequently seen in the water and birds (especially gulls) are always present. A red duckweed-type plant was growing in the estuary water in September. Dog feces and bird carcasses are occasionally seen in or near the water, including September 2018.

TMDL-R1: The water level was too high to sample at the typical transect "A" location from July to September so the transectswere moved about 25 meters upstream to shallower water. The lower section of this reach is frequently littered with washingVentura River Algae TMDLPage 7 of 15Dry Season Data Summary

materials and containers (e.g. soap, shampoo, laundry detergent, clothing, towels, etc.) and is commonly known as the "laundry site" due to its frequent use for that purpose by the homeless in the area. The Ventura Land Trust removes the items when it sees them and posts signs, as well as speaking with people directly about the hazards and illegal nature of washing in the stream, however most of the activity occurs when no one is around. The use is heavier in the summer months. The Ventura Land Trust plans to remove some of the vegetation in the area outside of nesting season and investigate funding and partnerships for starting an alternative laundry program for homeless people in the area. During the September event, a man was present in the area with a large sheathed knife strapped to his hip, but he left slowly after he saw the sampling team arrive. Graffiti is common on the pylons under the Main Street bridge and a person was actively engaged in graffiti as the sampling crew passed by during the September event.

TMDL-R2: Several homeless camps are present on the private property in this area. Two camps are on the east bank among the Arundo. Evidence of washing (e.g. soap, shampoo bottles, etc.) are sometimes seen near the water. Some rocks have been moved to create some deeper sections for the camps. A small garden was observed in a cleared space on the river bank at one of the camps in August and in September the garden was fenced with small gauge chicken wire. There appeared to be a toilet facility on the banks in August.

TMDL-R3: Nothing unusual to report.

TMDL-R4: Another data collection sonde (short sonde inside PVC tubing) is frequently seen installed (by an unknown party) in the water near transect "A". The sonde monitoring appears to be ongoing.

TMDL-SA: A natural spring tends to keep the area directly above the confluence with the Ventura River wet for most/all of the year, however upstream/influent flow dried out by June, and the area was too dry for sampling at all by September.

TMDL-CL: The sonde was loosely covered with camouflaging rocks when it was installed in May, however when the crew was onsite to perform the monthly monitoring approximately two weeks later, the rocks were gone and the sonde installation was visible but the sonde itself was embedded in sediment. Flow in the creek was minimal so the velocity could not have moved the rocks. The crew tried to remove the sediment, but it was quickly replaced. The data logging period ended several hours later and the sonde was collected the following day. Human interference with the sonde is suspected but the timing of the presumed interference cannot be inferred from the data due to lack of support by all parameters. [The conductivity sensor became fouled a third of the way through deployment and the DO sensor became fouled two thirds of the way through deployment, at about which time the pH appears to have decreased (and remained lower for the remainder of the deployment) but there was no obvious change in conductivity during the latter part of the deployment).

### CONTINUOUS DATA LOGGING

Seven Hydrolab HL4 water quality data sondes (Figure 3) are used for the continuous data monitoring requirement of this program. The HL4 has the ability to accurately measure and log DO, conductivity, pH and temperature within a self-contained package that is 1.75" in diameter and just over two feet in length, which allows it to fit inside a short length protective housing of 2" diameter schedule 40 pipe. The data sonde installations are vulnerable to potential vandalism and theft and so need to be as inconspicuous as possible (i.e. below the water surface among rocks and tree roots). Each sonde is assigned to a particular TMDL site and is labeled with the site name for additional consistency between events. Pre and post calibrations and/or calibration checks are performed for each deployed sonde for each event.

Continuous monitoring for pH, specific conductivity, temperature, and DO was conducted for a two-week period at all sites (except those that were dry) in May and September. The sondes were programmed to begin logging data soon after deployment and continue logging for a little over two weeks to allow field staff to get concurrent field meter measurements during sonde retrieval to compare to the sonde data (Figure 4, Figure 5, Figure 6, and Figure 7).



In May 2018, seven Hydrolab HL4 water quality data sondes were installed and began logging data on May 1, 2018 at 19:00. The TMDL-R4 conductivity readings were in error for the first half of the deployment, however conductivity is not a required measurement at this site and the conductivity at this site (known from past measurements and as measured by the field meter check at retrieval) is low enough (~1,000  $\mu$ S) to not affect the other collected data.<sup>1</sup>, so redeployment was unnecessary. The TMDL-CL conductivity sensor became fouled a third of the way through deployment and the DO sensor became fouled two thirds of the way through deployment, so readings are in error for those periods. There was insufficient flow for redeployment at TMDL-CL. The affected data is not included in the charts. It is likely that stream flow decreased at TMDL-SA during deployment resulting in lower DO and conductivity levels as the composition of the water became more dominated by the natural spring at the site.

In September 2018, sondes were installed at four TMDL monitoring sites for continuous data logging (TMDL-R4, TMDL-SA, and TMD-CL were dry). The sondes were installed before the logging program began on September 12, 2018 and removed after two weeks of logging, (Figure 4, Figure 5, Figure 6, and Figure 7). The TMDL-R1 DO sensor became fouled partway through its deployment so the erroneous data is excluded from this report. Graphical representations of the continuous monitoring data are presented below.

Site	2018 Quarter 2 (May*)	2018 Quarter 3 (September*)
TMDL-Est	5/1/2018 – 5/15/2018	9/12/2018 – 9/26/2018
TMDL-R1	5/1/2018 – 5/15/2018	9/12/2018 - 9/26/2018 <sup>b</sup>
TMDL-R2	5/1/2018 – 5/15/2018	9/12/2018 - 9/26/2018
TMDL-R3	5/1/2018 – 5/15/2018	9/12/2018 - 9/26/2018
TMDL-R4	5/1/2018 – 5/15/2018ª	DRY
TMDL-SA	5/1/2018 – 5/15/2018	DRY
TMDL-CL	5/1/2018 – 5/15/2018°	DRY

#### TABLE 8. 2018 DRY SEASON TWO-WEEK CONTINUOUS MONITORING PERIODS

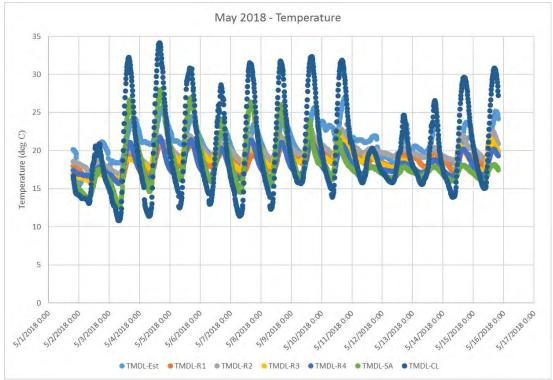
\* Month required by TMDL

<sup>a</sup> Conductivity in error for part of deployment but not a required parameter so not redeployed.

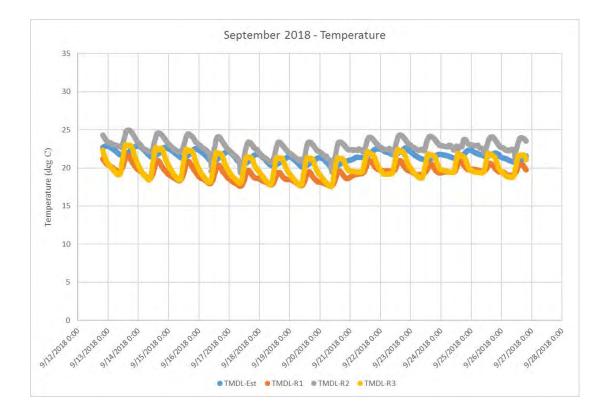
<sup>b</sup> DO sensor became fouled partway through deployment.

<sup>&</sup>lt;sup>1</sup> The conductivity measurement is used by the sonde when calculating DO, however the influence of conductivity on DO measurements for the conductivity levels seen at the TMDL riverine stations is negligible.

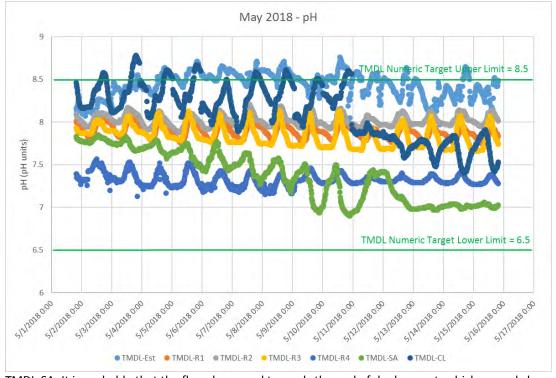
#### FIGURE 4. DRY SEASON 2018 - TEMPERATURE (CONTINUOUS DATA LOGGER)



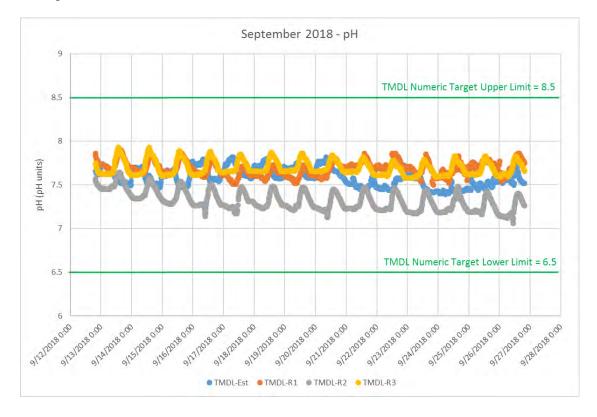
TMDL-SA: It is probable that the flow decreased towards the end of deployment, which caused changes in readings.



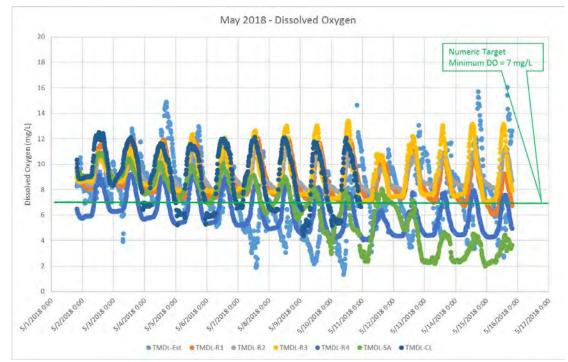
#### FIGURE 5. DRY SEASON 2018 - PH (CONTINUOUS DATA LOGGER)



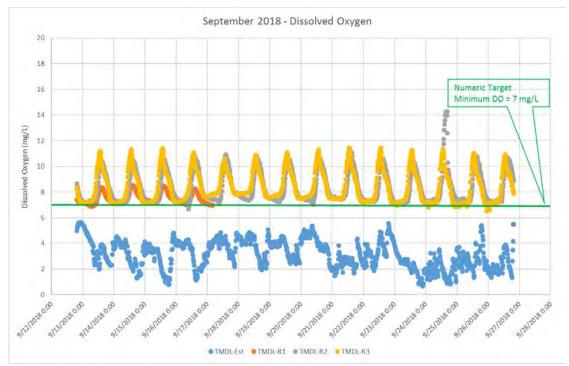
TMDL-SA: It is probable that the flow decreased towards the end of deployment, which caused changes in readings.



#### FIGURE 6. DRY SEASON 2018 - DISSOLVED OXYGEN (CONTINUOUS DATA LOGGER)

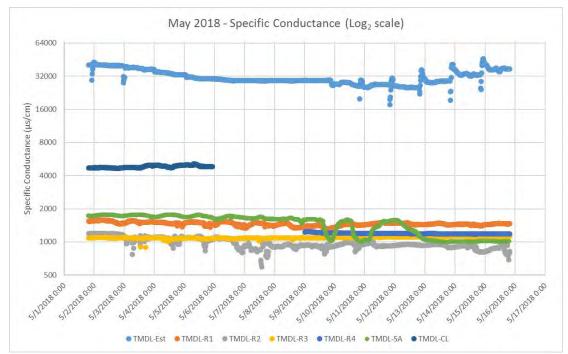


TMDL-SA: It is probable that the flow decreased towards the end of deployment, which caused changes in readings. TMDL-CL: The DO sensor became fouled two thirds of the way through deployment, so data is not included for that period.

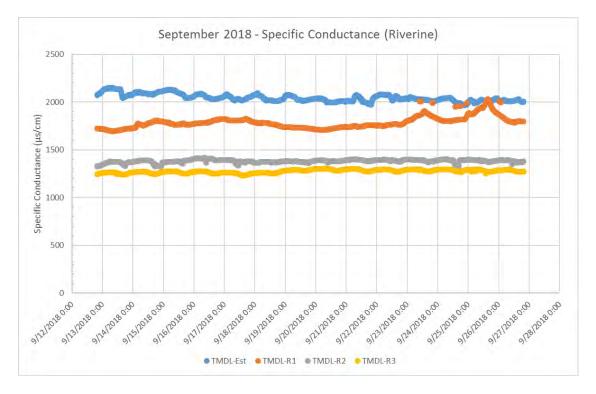


TMDL- R1: The DO sensor became fouled near the end of the first week of deployment.

#### FIGURE 7. DRY SEASON 2018 - SPECIFIC CONDUCTANCE (CONTINUOUS DATA LOGGER)



TMDL-R4: Conductivity readings were in error for the first half of the deployment. TMDL-CL: Conductivity sensor became fouled a third of the way through deployment. Conductivity is not a required parameter for these sites and the erroneous measurements are not included in this chart. TMDL-SA: It is probable that the flow decreased towards the end of deployment, which caused changes in readings.



## **OBSERVATIONS AND LESSONS LEARNED**

Southern California has been experiencing extreme drought conditions since before this monitoring program began (January 2015). During the drought, the Ventura River and its tributaries have been particularly dry, resulting in lost hydrological connectivity between the upper and lower watershed. A large storm in January and a series of storms in March resulted in flow at all observation points and briefly reestablished hydrologic connectivity between the upper and lower watershed for the end of the 2017/18 wet season. However, by the time the 2018 dry season monitoring began in May, flow on the mainstem Ventura River had ceased at the Santa Ana Bridge and by June had also ceased in San Antonio Creek at TMDL-SA, resulting in a loss of connectivity with that portion of the upper watershed, as occurred during the dry season in 2015-2017.

Flow variations between monitoring sites and events are likely due to a combination of factors, including geology, temperature, inputs, and extractions. Ponded locations, and those with shallow and/or slow-moving water appear to experience greater variation in measured levels of DO and so ponds are avoided where possible but could not be avoided in all cases. TMDL-Est appears to have experienced a greater ocean influence in May than in September (as seen in 2015-2017.<sup>2</sup>) according to the conductivity data.

Siltation can be an issue in slow moving water and sondes are installed higher in the water column in areas where it is likely to occur, but shallow water sometimes restricts the level at which the sonde can be placed. All sondes were checked and/or calibrated by monitoring staff before and after deployment, regardless of history, and field meter readings were taken near the sondes immediately prior to sonde removal to check/confirm that the sondes were still reading accurately in situ at the end of the deployment. However, it should be noted that field readings may not match the sonde data for reasons other than sonde/meter malfunction, including placement (meter distance from sonde, depth of measurement, flow velocity), fouling of the sonde (sedimentation, algae, films, etc.). Additionally, the sondes are covered with rocks to camouflage them to prevent vandalism, however the rock cover could affect flow, fouling, and deposition depending on stream conditions at the time of placement and changes during the deployment period.

All monthly grab and continuous monitoring pH measurements were within the numeric target limits of pH 6.5-8.5, except for the May grab and continuous samples at TMDL-Est and TMDL-CL, which were over the upper limit of 8.5. Sites with DO measured below the daily minimum numeric target are shown in Table 9. All sites exhibited diurnal DO, pH, and temperature patterns during the continuous monitoring events, and all monitored sites (except TMDL-R2 and TMDL-R3 in May) were below the DO daily minimum numeric target for at least one trough of the diurnal variation. Low levels of DO appear to be associated with low flow, possibly due to the ponding of water upstream and/or at the measurement location. TMDL-SA would have been dry in June-September if not for a small spring at the site. Sites with seasonal average chlorophyll *a* and macroalgal cover exceedances are listed in Table 10.

	May	June	July	August	September
Grab	SA	R4, SA	R4, SA	R2, R3, SA	R2
Continuous	Est, R1, R4, SA, CL	Not Applicable	Not Applicable	Not Applicable	Est, R1, R2, R3
Dry		CL	CL	R4, CL	R4, SA, CL

#### TABLE 9. SITES WITH DO MEASURED BELOW THE DAILY MINIMUM NUMERIC TARGET (7 MG/L)

Note: TMDL-SA would have been dry June-September if not for a small spring at the site.

<sup>&</sup>lt;sup>2</sup> TMDL-Est sonde conductivity data is unavailable for September 2017 due to the loss of the sonde during that event. The conductivity measured during field sampling in September 2018 was in line with results for September in previous years. Ventura River Algae TMDL Page 14 of 15 November 2018 Dry Season Data Summary

#### TABLE 10. SITES ABOVE THE SEASONAL AVERAGE MAXIMUM NUMERIC ALGAE TARGETS

Parameter	Above Seasonal Average Numeric Target
Chlorophyll a	Est, R1, R2, R3, R4
Macroalgal Cover	Est, R3, R4, SA

Note: TMDL-SA was too dry for algae sampling in June-September and would have been completely dry if not for a small spring at the site. CL was dry in August and September.

#### TABLE 11. EXCEEDANCES BY SITE AND MONTH

	Seasonal Average	Мау	June	July	August	September
TMDL-Est	Chl <i>a</i> / cover	pH(m) / pH(c), DO(c)				DO(c)
TMDL-R1	Chl a	DO(c)		DO(m)		DO(c)
TMDL-R2	Chl a				DO(m)	DO(m) / DO(c)
TMDL-R3	Chl <i>a</i> / Cover				DO(m)	DO(c)
TMDL-R4	Chl <i>a</i> / Cover	DO(c)	DO(m)	DO(m)	DRY	DRY
TMDL-SA	Chl <i>a</i> / Cover	DO(m) / DO(c)	DO(m)*	DO(m)*	DO(m)*	DRY
TMDL-CL	Chl a	pH(m) / pH (c) DO(c)	DRY	DRY	DRY	DRY

Notes:

\*: site was too dry to meet protocol requirements for algae collection. Only water grab samples were collected.

(m) is the monthly grab sample measurement

(c) is the continuously monitored DO.

Chl a: Chlorophyll a

Cover: Percent macroalgal cover













January 28, 2019

Renee Purdy Assistant Executive Officer Los Angeles Regional Water Quality Control Board 320 W. 4<sup>th</sup> St., Suite 200 Los Angeles, CA 90013

### Subject: 2017-2018 Annual Monitoring Report for Ventura River Estuary Trash TMDL (Resolution No. R4-2007-008)

Dear Ms. Purdy,

Enclosed for your review and consideration is the Ventura River Estuary Trash TMDL Annual Monitoring Report for 2017-2018 monitoring year. This Annual Monitoring Report is being submitted per the requirements of the Ventura River Estuary Trash TMDL, Los Angeles Regional Water Quality Control Board Resolution No. R4-2007-008.

This document is being submitted on behalf of the following responsible parties: City of Ventura, County of Ventura, Ventura County Watershed Protection District, Ventura County Fairgrounds, California Department of Transportation, California Department of Parks and Recreation-Channel Coast District, and participants in the Ventura County Agricultural Irrigated Lands Group, which is a subdivision of the Farm Bureau of Ventura County.

During the 2013-2014 monitoring year, the responsible parties developed a revised Trash Monitoring and Reporting Plan (TMRP–Addendum No. 1) to include a new MFAC/BMP Program that utilizes visual trash assessments and targeted clean ups of the parcels located within the Estuary, coupled with BMPs implemented in the Estuary and on the land areas adjacent to the Estuary. The Addendum 1 dated October 22, 2014 was submitted by our consultant Larry Walker & Associates on November 11, 2014 reflective of the input received from Regional Board staff during the June 17, 2014 meeting between the Responsible Parties and Regional Board staff. The responsible parties are still waiting for approval of the Addendum No. 1; however, Regional Board staff indicated the responsible parties should implement the revised TMRP program while awaiting approval.

This Annual Monitoring Report summarizes the results of the fourth year of the revised TMRP and MFAC/BMP Program (October 2017 through September 2018).

Renee Purdy January 28, 2019 Page 2 of 2

If you have any comments or questions regarding the attached document, please contact me at (805) 645-1382 or <u>Ewelina.Mutkowska@ventura.org</u>.

Sincerely,

vante

Ewelina Mutkowska County Stormwater Program Manager Ventura County Public Works Agency

CC: Jenny Newman, Los Angeles Regional Water Quality Control Board Stefanie Hada, Los Angeles Regional Water Quality Control Board Jeff Pratt, Ventura County Public Works Agency Glenn Shepard, Ventura County Watershed Protection District Arne Anselm, Ventura County Watershed Protection District Joe Yahner, City of Ventura Peter Shellenbarger, City of Ventura Nat Cox, California Department of Parks and Recreation Rich Rozelle, California Department of Parks and Recreation John Krist, Farm Bureau of Ventura County Jodi Switzer, Farm Bureau of Ventura County Shirley Pak, California Department of Transportation Constantine Kontaxis, California Department of Transportation Sunny Liem, California Department of Transportation Joshi Bhaskar, California Department of Transportation Ron Murphy, Ventura County Fairgrounds Derek Poultney, Ventura Land Trust Dan Hulst, Ventura Land Trust



JANUARY 2019

# Ventura River Estuary Trash TMDL 2017-2018 TMRP Annual Report

prepared by VENTURA LAND TRUST

submitted to CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

#### submitted by

CITY OF VENTURA, COUNTY OF VENTURA, VENTURA COUNTY WATERSHED PROTECTION DISTRICT, PARTICIPANTS IN THE VENTURA COUNTY AGRICULTURAL IRRIGATED LANDS GROUP, CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE, CALIFORNIA DEPARTMENT OF STATE PARKS, AND CALIFORNIA DEPARTMENT OF TRANSPORTATION



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# Introduction

This Annual Report is being submitted to fulfill the compliance requirements of the Amendments to the Water Quality Control Plan – Los Angeles Region for the Ventura River Estuary Trash Total Maximum Daily Load (Trash TMDL), Resolution No. R4-2007-008 (effective March 6, 2008). The purpose of this report is to present the results of the monitoring efforts conducted in accordance with the Trash Monitoring Reporting Plan (TMRP) and Minimum Frequency Assessment Collection/Best Management Practice (MFAC/BMP) Program developed to meet the requirements of the Trash TMDL.

The initial TMRP, which was approved in 2009 by the California Regional Water Quality Control Board, Los Angeles Region (Regional Board), was revised to more effectively target the disbandment of homeless encampments in the Ventura River Estuary (Estuary), which have been determined to be the primary source of trash in the TMDL compliance area.

Initially, the responsible parties submitted a TMRP revision request letter, dated October 9, 2013, asking for additional time to develop the details of the monitoring approach, particularly the most effective locations to implement the patrols and visual assessments. As such, the responsible parties proposed implementing an interim MFAC/BMP Program to begin in October 2013 while the responsible parties developed the revised MFAC/BMP Program and Regional Board staff reviewed and approved the revised MFAC/BMP Program. An interim MFAC/BMP Program was necessary to support development of some aspects of the monitoring approach, facilitate transition to a more effective clean-up and trash prevention program, and avoid the necessity of continuing to count pieces of trash while the responsible parties developed the detailed TMRP. The interim MFAC/BMP Program implemented by the responsible parties was as follows:

- 1. Conducted clean-up of all Estuary parcels within the TMDL compliance area by mid-November 2013 as the initial quarterly event.
- 2. Began initial patrols to determine the route(s) that will be used for visual assessments and identified the preferred routes by January 2014.
- 3. Formalized Memorandum of Agreement with Ventura Hillside Conservancy to organize and manage volunteer cleanup events and conduct trash monitoring activities.
- 4. Conducted regularly scheduled clean-up events in the Estuary beginning in March 2014, which were additional to the required collection events for the MFAC/BMP Program.

In addition, the responsible parties conducted several initial assessments in May and June 2014 and an initial collection event in May 2014 to test the applicability of the revised MFAC/BMP Program.

An Addendum No. 1 to the TMRP was submitted on April 30, 2014 and a revised Addendum was submitted on October 22, 2014 addressing comments from Regional Board staff. In a meantime, the revised MFAC/BMP Program began in July 2014. The TMRP and MFAC/BMP Program are designed to prioritize the use of resources to implement actions effective in reducing trash in the Estuary, while still providing a monitoring approach that will allow for an evaluation of the effectiveness of the MFAC/BMP Program and support identification of any needed adjustments to the MFAC/BMP Program. The responsible parties are still waiting for approval of

the Addendum No. 1; however, Regional Board staff indicated the responsible parties should implement the revised TMRP program while awaiting approval.

This Annual Report includes the following information from fifth-year monitoring conducted under the revised TMRP and MFAC/BMP Program:

- Monitoring Summary
- MFAC Events/BMP Implementation Summary
- MFAC/BMP Program Evaluation and Revision Recommendations

The efforts to implement the Trash TMDL are being completed on behalf of the responsible parties to the Trash TMDL as listed in **Table 1**. The efforts to implement the Trash TMDL requirements for nonpoint sources are focused within the Estuary and the parcels adjacent to the Estuary. **Table 2** presents the names of the parcels within the Estuary, which were grouped into four MFAC areas identified for the MFAC/BMP Program implementation. **Figure 1** shows the locations of the parcels within the Estuary. Per 2014 revised MFAC/BMP Program, the cleanup and monitoring efforts included the whole TMDL compliance area including areas that are not part of the eight parcels listed in **Table 2** and shown in **Figure 1** including the area under the Main Street Bridge, the area under the US 101 Bridge, and the area under the railroad bridge between MFAC Area 1 and MFAC Area 2. In addition, both County of Ventura and City of Ventura installed required full trash capture devices within their respective jurisdictions draining to the MS4 within the Trash TMDL Staff Report-defined Estuary Sub-watershed area.

Responsible Party	Nonpoint Source (NPS)	Point Source (PS)
City of Ventura (City)	Х	Х
Ventura County (County)	Х	Х
Ventura County Watershed Protection District (VCWPD)	Х	Х
California Department of Food & Agriculture (Ventura Fairgrounds)	Х	Х
California Department of Transportation (Caltrans)	X1	Х
California Department of Parks and Recreation	Х	
Participants in the VCAILG <sup>2</sup>	Х	

Table 1, Responsible Par	rties Participating in the	TMRP and MFAC/BMP Program
	rues i arueipaung in the	

Caltrans was not assigned a Load Allocation, yet it is participating in the MFAC/BMP Program to meet the Trash TMDL goals.
 Ventura County Agricultural Irrigated Lands Group.

#### Table 2. Estuary Parcels by MFAC Area

	MFAC Area 1	MFAC Area 2	MFAC Area 3	MFAC Area 4
Parcel	State of California Department of Parks and Recreation	State of California Department of Parks and Recreation	Ventura Beach RV Resort, Inc.	Wood-Claeyssens Foundation
Owner	City of San Buenaventura	State of California Department of Parks and Recreation	Ventura Land Trust (formerly Ventura Hillsides Conservancy)	Ventura County Watershed Protection District

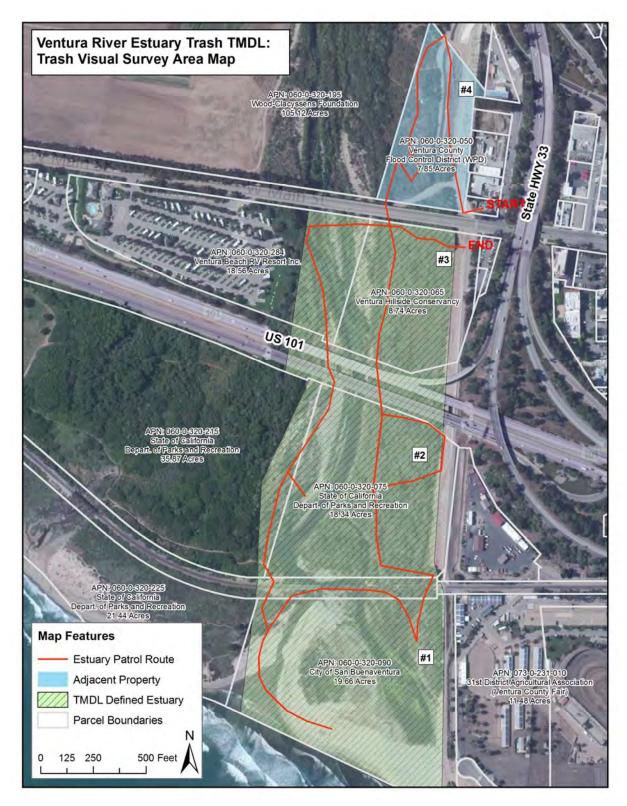


Figure 1. MFAC/BMP Program Monitoring Area and Assessment/Patrol Route

# ASSESSMENTS AND COLLECTION EVENTS

The responsible parties implemented the revised MFAC/BMP Program (as of July 2014) from the October 2017 to September 2018 reporting period. Upon implementation of the revised MFAC/BMP Program, the responsible parties conducted regular visual trash assessment surveys along a pre-defined route in the Estuary on a rotating schedule each month to ensure the entire Estuary, as defined in the Trash TMDL, was covered on a quarterly basis. The assessment route was designed to include historic in-Estuary TMRP monitoring locations in addition to other areas on all parcels of the Estuary to reflect the new MFAC/BMP Program. The assessment route is shown in **Figure 1**. The visual trash assessment surveys were conducted in accordance with the revised TMRP. However, the responsible parties conducted significantly more assessments than required in the revised TMRP, which is one assessment per quarter. This is due to this monitoring year being a transition year between the previous MFAC/BMP Program and the revised MFAC/BMP Program. Additional cleanups have been determined to be necessary to address legacy trash that has accumulated in the Estuary. After the legacy trash has been removed, the revised TMRP frequency will be implemented.

The responsible parties also conducted trash collection events utilizing information from the monitoring program and from the assessments to determine the locations to focus trash collection efforts.

In addition, the responsible parties conducted regularly scheduled patrols along the assessment route as shown in **Figure 1**. The patrols were conducted to eliminate existing homeless encampments and prevent the establishment of new homeless encampments and to assess trash levels, as homeless individuals and homeless encampments are the main nonpoint sources of trash for the Estuary. The responsible parties averaged up to two patrols per week in areas exhibiting large homeless populations and averaged up to two patrols per month in areas exhibiting small homeless populations. The responsible parties conducted 71 patrols from October 2017 to September 2018.

A summary of the assessment dates, the collection event dates, and the patrol dates is presented in **Table 3**. **Appendix 1** contains the Trash Visual Survey Worksheets and the Collection Event Worksheets for all MFAC Events conducted between October 2017 to September 2018.

		0	ct	Ν	ov	Dec	Jan	Feb	)	Mar	Apr	Мау	Jun	Jul	Aug	Sep
				Q1				Q2				Q3			Q4	
								Assess	me	ent Dates						
MFAC Are	ea 1			11/1	3/17	12/19/17	1/12/18	2/8/18	8	3/29/18	4/12/18	5/17/18	6/7/18	7/5/18	8/14/18	9/7/18
MFAC Are	ea 2			11/1	3/17	12/19/17	1/12/18	2/8/1	8	3/29/18	4/12/18	5/17/18	6/7/18	7/5/18	8/14/18	9/7/18
MFAC Are	ea 3			11/1	3/17	12/19/17	1/12/18	2/8/18	8	3/29/18	4/12/18	5/17/18	6/7/18	7/5/18	8/14/18	9/7/18
MFAC Are	ea 4					12/19/17		2/8/1	8	3/29/18	4/12/18	5/17/18	6/7/18	7/5/18	8/14/18	
								Collec	tio	n Dates						
MFAC Are	ea 1			11/1	9/17			2/17/1	18		4/21/18		6/25/18			9/10/18
MFAC Are	ea 2							2/17/1	18	3/30/18	4/21/18		6/25/18			9/10/18
MFAC Are	ea 3			11/1	4/17	12/22/17		2/10/1	18	3/30/18	4/21/18		6/12/18			9/25/18
MFAC Are	ea 4							2/10/1	18	3/30/18	4/21/18					
								Patr	ol I	Dates						
10/4/17	11/1	9/17	1/24/	/18	2	2/21/18	3/29/2	18		5/4/18	6/1	2/18	8/14/18			
10/11/17	11/2	2/17	1/26/	/18	2	2/29/18	3/30/2	18		5/7/18	6/1	4/18	8/22/18			
10/13/17	11/2	28/17	1/29/	/18		3/1/18	4/4/1	8		5/11/18	6/1	6/18	8/29/18			
10/16/17	11/3	31/17	2/2/ <sup>-</sup>	18		3/6/18	4/12/	18		5/16/18	6/2	0/18	9/7/18			
10/25/17	12/1	9/17	2/7/ <sup>-</sup>	18		3/7/18	4/19/1	18		5/17/18	6/2	5/18	9/10/18			
11/2/17	12/2	2/17	2/8/	18		3/9/18	4/20/1	18		5/23/18	7/5	5/18	9/15/18			
11/10/17	1/5	5/18	2/10/	/18	3	8/16/18	4/21/2	18		5/30/18	7/9	9/18	9/25/18			
11/13/17	1/1:	2/18	2/15/	/18	3	3/20/18	5/2/1	8		6/1/18	7/3	0/18	9/27/18			
11/14/17	1/1	9/18	2/17/	/18	3	3/23/18	5/3/1	8		6/7/18	8/9	9/18				

#### Table 3. Assessment, Collection, and Patrol Dates for October 2017-September 2018

## ASSESSMENT FINDINGS

The goal of the MFAC/BMP Program is to ensure the parcels in the Estuary are at a Category 1 level of trash based on the information collected during Estuary visual assessments.

The three Trash Assessment Categories of the MFAC/BMP Program are:

- Category 1 Represents the SWAMP Category "Optimal"
- Category 2 Represents the SWAMP Category "Suboptimal"
- Category 3 Represents the SWAMP Category "Poor"

The definition of Category 1 is:

• "On first glance, no trash is visible. Little or no trash (<10 pieces) evident when streambed and stream banks are closely examined for litter and debris, for instance by looking under leaves."

The definition of Category 2 is:

• "On first glance, low to medium levels of trash are evident (10 – 100 pieces). Stream, bank surfaces, and riparian zone contain some litter and debris. Possible evidence of site being used by people: scattered cans, bottles, food wrappers, blankets, or clothing."

The definition of Category 3 is:

• "On first glance, medium to high levels of trash (>100 pieces) are visible at stream, bank surfaces, and immediate riparian zone contain substantial levels of litter and debris. Evidence of site being used frequently by people: many cans, bottles, and food wrappers, blankets, or clothing."

There were multiple locations on the parcels within the four MFAC Areas that were assessed during the MFAC Events. These areas were located along the assessment route and in other areas of the Estuary identified through the patrols. Based on the trash conditions at the multiple assessed locations, the Ventura Land Trust determined the overall percentage of the MFAC Areas that were in each of the Trash Assessment Categories. **Table 4** presents a summary of the Trash Assessment Categories for MFAC Areas resulting from the assessments conducted during 2017-2018. These percentages were determined after estimating the amount of trash per quarter, within each MFAC area, after visually evaluating and averaging the category and amount of trash observed per each Trash Visual Survey conducted. **Appendix 1** contains the Trash Visual Survey Worksheets and MFAC Events Worksheets conducted during 2017-2018.

		Qua	rter 1*	
Assessment Area	Category 1	Category 2	Category 3	Notes
MFAC Area 1	94%	3%	3%	
MFAC Area 2	93%	4%	3%	
MFAC Area 3	92%	4%	4%	
MFAC Area 4	99%	1%	0%	No trash observed in MFAC area 4 during quarter 1 was category 3
	-	Qua	rter 2	-
Assessment Area	Category 1	Category 2	Category 3	Notes
MFAC Area 1	92%	6%	2%	
MFAC Area 2	91%	5%	4%	
MFAC Area 3	90%	5%	5%	
MFAC Area 4	96%	4%	0%	No trash observed in MFAC area 4 during quarter 2 was category 3
	-	Qua	rter 3	-
Assessment Area	Category 1	Category 2	Category 3	Notes
MFAC Area 1	96%	4%	0%	No trash observed in MFAC area 1 during quarter 3 was category 3
MFAC Area 2	90%	3%	7%	
MFAC Area 3	92%	5%	3%	
MFAC Area 4	97%	3%	0%	No trash observed in MFAC area 4 during quarter 3 was category 3
		Qua	rter 4	
Assessment Area	Category 1	Category 2	Category 3	Notes
MFAC Area 1	96%	4%	0%	No trash observed in MFAC area 1 during quarter 4 was category 3
MFAC Area 2	92%	5%	3%	
MFAC Area 3	92%	4%	4%	
MFAC Area 4	98%	1%	1%	

### Table 4. Percent of MFAC Area by Assessment Category for October 2017 - September 2018

# **MFAC Events/BMP Implementation Summary**

To ensure the parcels are all within Category 1, the MFAC/BMP Program is continuously evaluated and modified using the following adaptive management approach:

- 1. Estuary parcels in Category 1 for the monitoring event conducted prior to a scheduled MFAC Event are noted and any trash observed is collected during the visual survey. If no potential high trash generating areas are identified through the patrol of the parcel, the MFAC Event is not conducted. If potential high trash generating areas are identified by the patrols, then the MFAC Event focusing on those areas of the parcel that require clean-up is conducted.
- 2. Monitoring sites in Category 2 are evaluated to determine if additional BMPs are needed to reduce the accumulation of trash between monitoring events (i.e., visual surveys). The types of trash, likely sources, and observed trends in trash amounts are considered in

determining if modifications to the MFAC/BMP Program are necessary to move these sites to Category 1.

3. MFAC parcels that have Category 3 levels of trash for two consecutive quarters are targeted for more frequent patrols and/or more frequent clean-ups (depending on the identified primary source of trash) until the parcels reach Category 1 levels of trash for two consecutive visual surveys.

This following section provides the results of the collection events and the results of the BMPs implemented related to reducing trash within the Estuary and from adjacent land areas.

## MFAC COLLECTION EVENTS AND ADDITIONAL CLEAN-UP EVENTS

One facet of the MFAC/BMP Program is to clean up any trash found through the assessments. This is done to ensure zero pieces of trash are found after the assessment. **Table 5** presents the trash collected during all collection events during 2018, all dates in 2017 were noted on the 2016-2017 report. **Appendix 1** contains the Collection Event Worksheets for MFAC Events conducted during 2017-2018 (**Appendix 1**). Third Saturday of the month volunteer clean up events and several mid-week clean ups have MFAC Event Worksheets; all other clean up events listed in Table 5 were smaller scale, hour to two hour long events by VLT volunteers who chose to pick up trash in their own time outside of monthly volunteer events. Another facet of the MFAC/BMP Program is to conduct additional clean-ups in the Estuary if it is found that trash is accumulating in deleterious amounts between assessments. The Ventura Land Trust and volunteers conducted 152 clean-ups in the Estuary to address high trash accumulation areas. Parcels 1, 2, and 3 were known to have legacy trash issues, and therefore were targeted for additional clean-ups from the beginning of the 2017-2018 monitoring year. Clean-up photos provided in **Appendix 2** include the types of trash removed during collection events and additional clean-up events.

Date	MFAC Area 1	MFAC Area 2	MFAC Area 3	MFAC Area 4
10/12/17	2/ 50 lbs		2/ 50 lbs	
10/16/17			1/ 25 lbs	
10/19/17		2/ 50 lbs		
11/02/17			4/ 100 lbs	
11/03/17	2/ 50 lbs	2/ 50 lbs		
11/10/17		1/ 25 lbs		1/ 25 lbs
11/12/17	1/25 lbs			
11/13/17			2/ 50 lbs	
11/14/17			2/ 50 lbs	1 / 25 lbs
11/19/17	1/ 25 lbs	2/ 50 lbs		
11/22/17		1/ 25 lbs		-
11/24/17			1/ 25 lbs	
11/25/17		2/ 50 lbs		
11/27/17			2/ 50 lbs	
11/28/17	1/ 25 lbs	2/ 50 lbs	1/ 25 lbs	
12/01/17			1 / 25 lbs	
12/11/17		1/ 25 lbs		
12/13/17		1/ 25 lbs		
12/22/17			3/ 75 lbs	1/ 25 lbs
12/27/17	1/ 25 lbs			
12/28/17			1/ 25 lbs	
12/29/17			1/ 25 lbs	
12/20/17		1/ 25 lbs		
1/1/18			1/ 25 lbs	
1/8/18			1/ 25 lbs	
1/11/18		1/25 lbs		
1/24/18		2/ 50 lbs	2/50 lbs	
2/2/18		1/ 25 lbs	2/50 lbs	
2/10/18			5/ 125 lbs	2/ 50 lbs
2/15/18		1/ 25 lbs		
2/17/18	10/ 250 lbs	8/ 200 lbs	12/ 300 lbs	5/125 lbs
2/23/18		1/ 25 lbs		
2/27/18		1/ 25 lbs		
3/1/18		1/ 25 lbs	3/75 lbs	
3/6/18		1/ 25 lbs		
3/16/18		1/ 25 lbs	10/ 250 lbs	4/ 100 lbs
3/30/18	18/450 lbs	21/ 525 lbs	26/650 lbs	
3/31/17		1/ 25 lbs		

# Table 5. Summary of Trash Collected during the MFAC Collection and Additional Clean-up Events

Date	MFAC Area 1	MFAC Area 2	MFAC Area 3	MFAC Area 4
4/2/18		1/ 25 lbs	1/ 25 lbs	
4/6/18	1/ 25 lbs			
4/9/18		1/ 25 lbs		
4/12/18		1/ 25 lbs		
4/17/18		1/ 25 lbs		
4/21/18	27/ 675 lbs	32/ 800 lbs	41/ 1,025 lbs	9/ 225 lbs
4/24/18			1/ 25 lbs	
4/27/18			1/ 25 lbs	
5/2/18	1/ 25 lbs			
5/3/18		1/ 25 lbs		
5/7/18		1/ 25 lbs		
5/9/18			1/ 25 lbs	
5/11/18			5/ 125 lbs	
5/17/18	1/ 25 lbs			
5/18/18		1/ 25 lbs		
5/19/18		1/ 25 lbs		
5/23/18			3/ 75 lbs	
5/24/18		1/ 25 lbs		
5/31/18	1/ 25 lbs			
6/1/18			1/ 25 lbs	
6/7/18		1/ 25 lbs		
6/11/18	1/ 25 lbs			
6/12/18			6/ 150 lbs	
6/14/18	1/ 25 lbs			
6/16/18		1/ 25 lbs		
6/17/18		1/ 25 lbs		
6/20/18	1/ 25 lbs			
6/21/18		1/ 25 lbs		
6/22/18	1/ 25 lbs			
6/25/18	97/2,425 lbs	68/ 1,700 lbs		
6/27/18	1/ 25 lbs			
6/28/18			1/ 25 lbs	
6/29/18		1/25 lbs		
6/30/18	1/ 25 lbs			
7/05/18			1/ 25 lbs	
7/07/18		1/ 25 lbs		
7/08/18	1/ 25 lbs	1/ 25 lbs		
7/09/18		1/ 25 lbs		

# Table 6. Summary of Trash Collected during the MFAC Collection and Additional Clean-up Events (continued)

Date	MFAC Area 1	MFAC Area 2	MFAC Area 3	MFAC Area
7/13/18			1/25 lbs	
7/15/18		1/ 25 lbs		
7/17/18	1/ 25 lbs			
7/19/18			1/ 25 lbs	
7/21/18			1/ 25 lbs	
7/23/18	1/ 25 lbs			
7/27/18		1/ 25 lbs		
7/29/18	1/ 25 lbs			
8/01/18	1/ 25 lbs	1/ 25 lbs		
8/02/18			2/ 50 lbs	
8/04/18		1/ 25 lbs		
8/06/18	1/ 25 lbs			
8/08/18		1/ 25 lbs		
8/11/18		1/ 25 lbs		
8/12/18			1/ 25 lbs	
8/14/18	1/ 25 lbs			
8/16/18			1/ 25 lbs	
8/17/18		1/ 25 lbs		
8/19/18	1/ 25 lbs			
8/23/18		1/ 25 lbs		1/ 25 lbs
8/26/18			1/ 25 lbs	
8/28/18		1/ 25 lbs		
8/30/18		1/ 25 lbs		
9/01/18	1/ 25 lbs			
9/03/18		1/ 25 lbs	1/ 25 lbs	
9/05/18	1/ 25 lbs		1/ 25 lbs	
9/07/18		1/ 25 lbs		
9/08/18	1/ 25 lbs			
9/10/18		4/100 lbs	9/ 225 lbs	5/125 lbs
9/12/18			1/25 lbs	
9/15/18		1/ 25 lbs		
9/16/18			1/ 25 lbs	
9/17/18	1/ 25 lbs			
9/20/18		1/ 25 lbs		
9/25/18			12/ 300 lbs	
9/27/18	1/ 25 lbs			
9/30/18			1/ 25 lbs	

# Table 7. Summary of Trash Collected during the MFAC Collection and Additional Clean-up Events (continued)

Ibs=pounds (1 bag roughly equal to 25 lbs)

### **BMP IMPLEMENTATION**

This section describes the BMPs implemented by the responsible parties within the Estuary and on land areas adjacent to the Estuary.

### **City of Ventura Litter Management Program BMPs**

- <u>Installation of required Full Capture Catch Basin Trash Excluders</u> completed in October 2014 to achieve 100% point-source compliance.
  - Installation of certified Stormtek Full Capture Catch Basin Trash Excluder Devices (CPS Devices) to achieve 100% reduction of trash from Baseline WLA, for all of the MS4 areas within the City of Ventura that drain to the Ventura River estuary.
- <u>Street Sweeping</u>
  - Residential Streets swept at least once a month.
  - Commercial Streets swept two to four times per month.
  - Information encouraging residents/businesses to move parked cars for sweeping.
  - Over 15,000 miles of total curb area are swept in City of Ventura's jurisdiction on an annual basis.
- Catch Basin Inlet-Cleaning and Placarding
  - City-maintained catch basin inlets are inspected and cleaned of trash and debris one to three times per year depending on the priority categorization of the catch basin.
  - Information encouraging residents/businesses to report trash filled inlets.
  - "Don't Dump Drains to Oceans Only Rain Down the Drain" stencils or placards placed on storm drain inlets.

### • <u>Trash Collection in Public Areas</u>

- The City installed 3 'bear proof' trash containers along the bike path directly adjacent to the river to promote the proper disposal of refuse and prevent the spread of litter by providing locked, secure containers.
- Trash and recycling containers are installed at all transit shelters and maintained at least once per week to remove litter and to verify that containers are functioning properly.
- Special event permit language requires additional trash and recycling containers to be set out during street fairs and art walks, along with litter clean-up following events.
- Collection of trash from 18 public trash receptacles located within the watershed two or three times per week depending on the locations of the receptacles.
- <u>Cigarette Butt Collection Receptacle Installation</u>
  - The City, in collaboration with Surfrider Ventura County Chapter, began installing cigarette butt collection receptacles in high generating cigarette butt areas.
  - Over 90 cigarette butt collection receptacles have been installed.

- Surfrider Ventura County Chapter reported over 200,000 cigarette butts collected and recycled since December 2016.
- Trash Collection and Bulky Item Pickup
  - Residents and businesses are provided with trash and recycling collection services.
  - Residential customers are allowed to set out two "bulky items" for free collection once per year as part of their regular trash collection service.
- Inspection, Planning and Enforcement Support
  - The City identifies and requires corrective measures for litter or litter sources found during commercial, industrial, and construction site inspections.
  - New development and redevelopment projects are required to install trash enclosures with doors and covers to reduce litter.
  - The Ventura Police Department conducts periodic "enforcement sweeps" through the portion of the Estuary that is adjacent to the City limits.
  - Litter laws that prohibit the accumulation of trash on private property are enforced by the City Code Enforcement and County Environmental Health Department. Private properties are required to remove all trash from their premises at least once every seven days.
- <u>Outreach</u>
  - Litter prevention outreach is included in classroom presentations and stormwater pollution prevention advertisements/announcements.
  - Several half-hour TV programs produced by the City encourage residents to prevent litter.
- <u>Volunteer Ventura</u>
  - The City, along with our dedicated community partners, host one-time and recurring volunteer events to support a wide variety of programs and services offered to our community. Monthly volunteer events include beach, harbor and inland area cleanups as well as other events that focus on natural resource education, preservation and restoration.
  - Residential and commercial best management practices brochures are dispersed at tabling/outreach events throughout the year that focus on decreasing pollutant loading in local watersheds.
- <u>City-Initiated Clean-Up Events</u>
  - The City will initiate clean-up events, as necessary, in response to observed elevated trash levels.
- <u>City-Sponsored Clean-Up Events</u>
  - The City sponsors various clean-up events throughout the City that may include one or more of the following events during any given year: Earth Day beach clean-up; Coastal Clean-Up Day; Vans Warped Tour clean-up; and Ventura Charter School clean-ups.

- The City provided marketing materials and support for Westside specific cleanups including October 21st, 2017, March 10th, 2018, and October 6th 2018 event dates. At these events, the Westside Community Development Corporation provided free disposal of solid waste from any west side (adjacent to the Ventura River) Ventura residents. Residents brought solid waste to a centralized location where it was sorted for recycling or disposal.
- Work Plan to Eliminate Homeless Encampments (Safe and Clean Program)
  - The Ventura City Council initiated the development of a work plan in September 2012 to eliminate encampments in the Estuary and to implement an on-going enforcement program as a component of the City's Safe and Clean Program. The work plan included organizing stakeholder partners, conducting civil engagement, developing an action plan and corresponding follow-up steps, posting camps, conducting camp removal, and launching post-camp removal strategies. Additional components of the City's Safe and Clean Program that reduce trash accumulation in City watersheds include maintaining clean public spaces, strengthening collaboration with neighboring agencies and bolstering social services to the homeless community with local partners.

## County of Ventura and VCWPD Litter Management Program BMPs

- <u>100% Point-Source Compliance</u> Installation of required full trash capture devices in County's MS4 catch basins was completed in October 2014. Certified Stormtek Connector Pipe Screen (CPS) devices were installed to achieve 100% reduction of trash from Baseline WLA, for all Ventura County Unincorporated areas draining to the County's MS4 within the Ventura River Estuary subwatershed. The County's Certification Report with installation details was provided in the 2013-2014 Annual Report.
- <u>Development and Implementation of Full Trash Capture Operation and Maintenance Plan</u> (O&M Plan) – An O&M Plan including schedule for regular maintenance and reporting of debris/trash removed for all CPS devices installed within the watershed was developed and signed by the responsible Department Heads. Training was provided to maintenance staff in both the classroom and field to ensure proper cleanout and reporting methods and procedures. Maintenance and proper documentation are on-going.
- <u>Regular Maintenance and Reporting for the CPS Devices</u> Per the Full Trash Capture O&M Plan, County staff inspect and perform necessary maintenance of each catch basin with CPS devices installed a minimum of three times per fiscal year: (1) One inspection before the wet season, (2) one inspection during the wet season and (3) one inspection after the wet season. Debris depth is recorded and all debris is removed. Volume and type of debris is recorded and documented. During the 2017-2018 monitoring year, the County removed 16.71 cubic feet of trash from full capture devices within the Ventura River Watershed.
- <u>Catch Basin Cleaning</u> Catch basins are inspected at least once per year and cleaned when filled to 25% or more of the catch basin's capacity. During storm season, all drainage facilities are inspected and cleaned as necessary.
- <u>Catch Basin Labeling</u> All County catch basins are labeled with "Don't Pollute, Flows to Waterways."

- <u>Open Channel Storm Drain Maintenance</u> All VCWPD owned and maintained channels are cleared, inspected, and cleaned as required at least once per year. Following the Thomas Fire in December 2017, VCWPD increased flood control channel maintenance in Fiscal Year 2017-2018 to clean all post-fire debris and maintain flood control capacity.
- <u>Trash Management at Public Events</u> A plan for the proper management of trash and litter is required when obtaining a permit for staging public events. This plan requires adequate facilities for trash collection and disposal.
- <u>Trash Collection in Public Areas</u> Trash receptacles have been placed within high trash generation areas. These devices are cleaned and maintained regularly to prevent trash overflow.
- <u>Ventura County Ordinance No. 4142</u> County ordinance (Section 6923 "Litter" and Section 6955 "Watercourse Protection") prohibit the disposal and accumulation of trash in public areas, private driveways, parking areas, streets, alleys, sidewalks, or components of the storm drain or any watercourse.
- <u>Inspections</u> The County conducts commercial, industrial, and construction facility/site inspections to ensure proper pollution prevention BMPs are being applied and to educate employees on the importance of pollution prevention.
- <u>Anti-Littering Signage</u> The County has installed anti-dumping and anti-littering signage at key locations including high trash generating areas, as well as at known illegal dumping locations.
- <u>Foster Park Trash Management</u> The County manages Foster Park, which is situated along the Ventura River upstream of the Estuary, to ensure that trash originating from the park does not enter the river and deposit in the Estuary. Management actions include:
  - o Park host and rangers removing trash and enforcing litter ordinance
  - Increased enforcement and collection during high trash generating events (holidays)
  - Covered trash containers and frequent trash pick-up and removal
  - Continued evaluation of trash management practices to determine whether current practices are sufficient
  - Continued evaluation of existing litter-related signage to determine whether current signage is adequate
- <u>Happy Valley Bioswale</u> was designed and constructed in Spring of 2016 to capture runoff from 40% or 37 acres of urban area within the County unincorporated Meiners Oaks community for removal of trash, debris, and other stormwater pollutants. This project treats an estimated 1.6M cubic feet of the average annual runoff discharging into Happy Valley Drain, a tributary to the Ventura River. This project was funded in part by the Proposition 84 Storm Water Implementation Grant, Round 2. Project photos were provided in the 2016-2017 Annual Report.
- <u>Watershed Friendly Gardens</u> In Fall 2016, the County sponsored a series of five, free, open to the public, Watershed Friendly Garden Hands-On-Workshops in Meiners Oaks. The workshops focused on how to construct your own Watershed Friendly Garden, designed to help prevent stormwater pollutants, including trash, from entering the storm

drains, creeks and rivers. The class culminated with construction of a Watershed Friendly Garden at Meiners Oaks Elementary School. Project photos were provided in the 2017 Annual Report.

- <u>Countywide Outreach</u> The County and VCWPD continue to participate in the Countywide Outreach Program retaining the services of The Agency, a professional advertisement group that designs and conducts countywide, bilingual outreach programs advocating proper trash disposal. The most recent addition to the outreach program is trash prevention and protection of storm water quality education using Facebook®, Twitter® and other forms of social media. Examples of outreach materials are provided in Appendix 4.
- <u>Targeted Outreach</u> The County conducts targeted outreach to schools within the area covered by the Trash TMDL to educate students, staff, and faculty on the importance of pollution prevention specifically regarding trash.

## **Caltrans Litter Management Program BMPs**

• Ventura River Estuary – State Highway 33, between Post Mile 0.0 and 5.55, has litter removed approximately twice per month and is mechanically swept approximately once per month, as needed. This highway is also open to 'Adopt-A-Highway' groups and there are groups who currently have adoptions and perform litter removal twice per month.

Additional Trash Management Plans/BMPs in place for Caltrans:

- Caltrans currently uses a variety of methods to educate the public about the importance of managing stormwater. These are intended to change public behavior regarding the release of potential pollutants (e.g., litter, spilled loads, and oil leaks).
  - The outreach program consists of a variety of written materials, monthly and quarterly bulletins, websites, workshops, and Caltrans's Adopt-a-Highway Program, as described below.
- Caltrans installs "No Dumping" and "Litter Fine" signs at selected locations on highways and freeways. Stenciled warnings prohibiting discharges to drain inlets at state-owned park-and-ride lots, rest areas, vista points, and other areas with pedestrian traffic are also used to increase public awareness.
- Litter and debris removal activities include sweeping of shoulders, paved medians, etc., and litter removal along the roadsides.
- Caltrans uses venues such as public schools, community-sponsored clean-up events, Bring Your Child to Work Day, and Earth Day to educate the public about the importance of excluding pollutants from stormwater.
- Caltrans's Adopt-A-Highway program is an opportunity for volunteers to make a tangible contribution to community and roadside aesthetics, and acts as a way to inform the public about the stormwater problems related to illegal dumping of litter and debris. As part of this program, signs are posted along roadways acknowledging groups that have volunteered to plant wildflowers, trees and/or shrubs, collect litter, or remove graffiti from structures.

- In the metropolitan portions of Los Angeles, San Diego, Orange, and Ventura Counties, storm drain inlets are inspected and cleaned annually prior to the rainy season. Those storm drain inlets that contain 12 inches or more of accumulated material will be cleaned.
- Litter and debris are periodically collected from Caltrans's rights-of-way and removed from drainage grates, trash racks, and ditch lines. Maintenance supervisors inspect highways in their assigned sections for the accumulation of litter. Signs may be installed where litter accumulation is a concern.
- "Protect Every Drop" is a statewide Caltrans education and outreach pollution reduction public program that has been conducted since March 2016. The program uses public service announcements through various media such as television and radio broadcasts, billboards, newspapers, public outreach events, banners, posters, tip cards etc., and focuses on behavior changes. The program encourages the public to learn more about sources and pathways of stormwater pollution and teaches motorists what to do to reduce pollutants like trash. Caltrans promotes public action to stop pollution at the source by: (1) properly disposing of trash and other items containing pollutants, (2) covering truckloads that may fall or blow off during transport, and (3) perform routine vehicle and tire maintenance. For more information, please refer to website www.protecteverydrop.com.
- Caltrans has accepted five (5) Gross Solids Removal Devices-Inclined Screen (EA: 2750U4) which were constructed. However, there are two (2) Gross Solids Removal Devices-Inclined Screen still under CCO (EA: 2750U4). There are two (2) Biofiltration Swales on Route 101, and one (1) Biofiltration Swale on Route 33 were proposed to be constructed (EA: 295404).

In addition to local anti-litter ordinances, Caltrans relies on Sections 23112, 23113, 23114, and 23115 of the Vehicle Code as legal authority to prevent spills, dumping or disposal of materials on the highways and freeways under its jurisdiction, as enforced by the California Highway Patrol.

• Section 23112 states:

No person shall throw or deposit, nor shall the registered owner or the driver, if such owner is not then present in the vehicle, aid or abet in the throwing or depositing upon any highway any bottle, can, garbage, glass, nail, offal, paper, wire, any substance likely to injure or damage traffic using the highway, or any noisome, nauseous, or offensive matter of any kind.

No person shall place, deposit, or dump, or cause to be placed, deposited, or dumped, any rocks, refuse, garbage, or dirt in or upon any highway, including any portion of the right-of-way thereof, without the consent of the state or local agency having jurisdiction over the highway.

• Section 23113 states:

Any person who drops, dumps, deposits, places or throws, or causes or permits to be dropped, dumped, deposited, placed or thrown, upon any highway or street any material described in Section 23112 or in subdivision (d) of Section 23114 shall immediately remove the material or cause the material to be removed.

If the person fails to comply with subdivision (a), the governmental agency responsible for the maintenance of the street or highway on which the material has been deposited may remove the material and collect, by civil action, if necessary, the actual cost of the removal operation in addition to any other damages authorized by law from the person made responsible under subdivision (a).

• Section 23114 states (in pertinent part):

No vehicle shall be driven or moved on any highway unless the vehicle is so constructed, covered, or loaded as to prevent any of its contents or load other than clear water or feathers from live birds from dropping, sifting, leaking, blowing, spilling, or otherwise escaping from the vehicle.

• Section 23115 of the Vehicle Code states (in pertinent part):

No vehicle loaded with garbage, swill, cans, bottles, waste papers, ashes, refuse, trash, or rubbish, or any other noisome, nauseous, or offensive matter, or anything being transported to a dump site for disposal shall be driven or moved upon any highway unless the load is totally covered in a manner which will prevent the load or any part of the load from spilling or falling from the vehicle.

Ventura Co	unty Fai	r's BMP f	for Litter	Maintena	ance Nor	n-Fair Tin	ne	
Description of Action	Daily	Weekly	Monthly	Annually	Before Event	During Event	After Event	As Needed
Litter pickup Main Parking Lot	Х					х	х	х
Litter pickup Beach Lot		х			х	х	х	х
Overflow Lot		х				х	х	х
Area Around Event		х			х	х	х	х
Trash Cans emptied	х					х	х	х
Recycle binds emptied		х						х
40 Yard dens emptied		х						х
Straw and Hay Removal								х
Power Sweep			х					х
Storm Dain Maintenance				October				х
Wash Rack Maintenance				June & Aug				x

# Ventura County Fairgrounds Litter Management BMPs

Ventura	County F	air's BM	P for Litt	er Mainte	enance F	air Time	1	1
Description of Action	Daily	Weekly	Monthly	Annually	Before Event	During Event	After Event	As Needed
Litter pickup Main Parking Lot	х				х	х	х	Х
Litter pickup Beach Lot	х				х	х	х	х
Overflow Lot	х				х	х	х	х
Area Around Event (Harbor to Calif., Promenade and Beach, Garden St. to Main St. and surrounding area).	x				х	x	x	x
Trash Cans emptied	х				х	х	х	х
Recycle binds emptied	х				х	х	х	х
40 Yard dens emptied	х				х	х	х	х
Straw and Hay Removal	х				х	х	х	х
Power Sweep	х				х	х	х	х
Storm Dain Maintenance		Sto	orm Drain Di	verted to Sev	wer during	Fair July- A	ugust	
Wash Rack Maintenance				June & Aug.				

## California Department of Parks and Recreation (State Parks) BMPs

- Designated Public Use Areas
  - Increased trail maintenance and fall vegetation reduction improves access for patrol and trash removal. Small motorized vehicles are able to access the trail and haul out larger volumes of trash. Increase in trail use by park personnel and the public discourages illegal camping near the trail.
  - Trash containers are installed at all visitor activity areas. Containers are kept in good working order and are emptied as needed.
  - State Parks keeps one mixed use 40 yard roll-off container onsite to collect and dispose of approximately 20,000 lbs. of trash annually.
  - Park personnel and camp hosts routinely collect loose trash within developed park areas as a part of their daily duties. In addition, park personnel conduct weekly sweeps to identify, and remove trash accumulation in vegetated areas along the established trail system east of the campground.
- <u>Undeveloped Areas</u>
  - Litter and debris is periodically collected from park backcountry lands, water courses, and roadways. Maintenance supervisors inspect park roads in their assigned sections for the accumulation of litter.
  - Signs may be installed where litter concentration is repetitive and at known illegal dumping locations.
  - Catch basins are inspected and cleaned at least once per year. During storm season, drainage facilities are inspected before significant storm events.
- Volunteer Events and Public Outreach
  - State Parks sponsors various Earth Day and Coastal Cleanup events throughout the district and participates in special cleanup events to address observed elevated trash levels.
  - Routine and random river bottom patrols are conducted by law enforcement at a minimum of once per week to discourage establishment of illegal camp sites.
  - Camper outreach and education is implemented year-round in an effort to limit trash dispersal by wind and wildlife.
- <u>Construction Projects and Special Events</u>
  - All special events permits issued on State Park property require a plan for the proper management of trash. This plan requires adequate facilities and patrols for trash collection and disposal.
  - All contractors that work on State property are required to implement BMPs to keep job site clean and litter free.

## VCAILG Litter Management Program BMPs

- Conditional Waiver The Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands within the Los Angeles Region ("Conditional Waiver," Order No. R4-2016-0143) requires VCAILG to provide educational classes focused on improving water quality, including identifying trash as an impairment of water quality.
- VCAILG members are required to maintain trash control BMPs for agricultural areas. In its role, VCAILG will continue to assist members with implementation of additional BMPs for trash control, as necessary, following the adaptive process identified in the group's Water Quality Management Plan (WQMP).
- Outreach During VCAILG outreach activities, the Trash TMDL is highlighted and a connection made for the need to control trash in order to meet the requirements of the Trash TMDL. In 2018, eleven education and outreach workshops were conducted, one of which was held in the Ojai Valley targeting the Ventura River watershed. All of these outreach events focused on management practices important to protect water quality.
- Ventura River Trash TMDL Fee VCAILG members are assessed a fee, based on acreage farmed, to further reinforce through a fiscal measure that trash in the watershed needs addressing.
- Plastics Recycling Local farmers will recycle agricultural plastic used to cover strawberry beds and used in some vegetable fields during the growing season. Collection and recycling of plastic is an effective method for reducing plastic trash from entering the Ventura River and the Estuary.
- Taylor Ranch (Wood-Claeyssens Foundation), a VCAILG member with property beginning immediately upstream of the Ventura River Main Street bridge, is an active participant in the Trash TMDL program by regularly cleaning and patrolling their property. Through the efforts of the Wood-Claeyssens Foundation, it is estimated that approximately 55 tons of trash were removed from the Taylor Ranch Ventura River bottom from transient/homeless camps through March 2012. Since that time, 5 to 10 tons of trash has been collected annually. Taylor Ranch continues to be successful in maintaining the cleanliness of the property and protecting water quality by employing the following practices:
  - Regular monitoring and patrolling of the area adjacent to the river was increased to an average of every two weeks in 2016 to intercept homeless camps more quickly and prevent the cycle of trash accumulation.
  - As camps are discovered, clean-up is initiated as soon as possible in order to convey the message that the area is being actively monitored. Law enforcement assistance is requested, as needed.
  - Both the Ventura Police Department and the Ventura County Sheriff's Department have responded in the past with Rangers from the California State Parks systems also helping with this effort.

# MFAC/BMP Program Evaluation and Revision Recommendations

The TMRP states the responsible parties will: "Evaluate effectiveness of BMPs and recommended changes to TMRP Addendum No. 1 and MFAC/BMP Program, as necessary." Under the previous MFAC/BMP Program and TMRP, the following steps were used to assess MFAC/ BMP Program effectiveness:

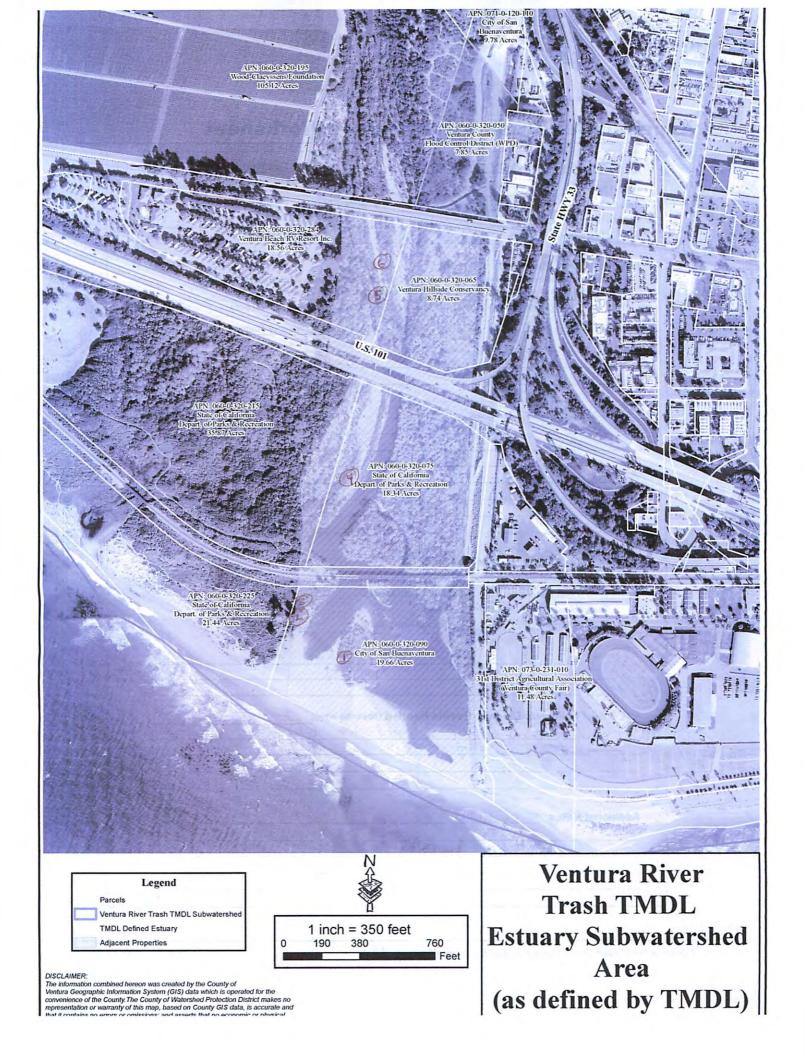
- 1. A review of BMP implementation, including identification of BMPs, location of BMPs, and time frame (*e.g.*, when an activity was implemented or installed); and
- 2. A comparison of monitoring results between monitoring locations and between events before and after BMP implementation.
- 3. Comprehensive review and assessment of MFAC/BMP Program

Given the broad nature of most of the BMPs implemented (*e.g.*, education programs, ordinances, street sweeping), the highly variable amounts of trash collected, and the relatively short time frame that full capture devices were installed, the responsible parties could not identify trends in the monitoring data that could be used to determine effectiveness of individual BMPs implemented. Based on the results of the previous evaluation and the structure of the new MFAC/BMP Program, the responsible parties utilized an approach based on the visual assessments.

The responsible parties utilized parcel rankings by Category as a means to assess effectiveness of the MFAC/BMP Program. That is, if there was an overall trend of parcels starting out and remaining in Category 1, or parcels moving from Category 2 or Category 3 to Category 1, then no modifications to the MFAC/BMP Program are needed. Conversely, if there was an overall trend of parcels moving from Category 1 to Category 2 or Category 3 over the course of the implementation year, then modifications to the MFAC/BMP Program would be considered.

2013-14 was the first year of the revised TMRP and modified MFAC/BMP Program implementation. A large amount of legacy trash existed in the Ventura River Estuary and the bulk of the effort (including many additional clean-up events) during this monitoring year has gone towards cleaning up the legacy trash. While most of the parcels have been cleaned and legacy trash removed, the State Parks Parcel (MFAC Area 2) still contains legacy trash. This is due to a population of homeless individuals that are not receptive to relocating from the area, even after multiple citations from local law enforcement. Once the legacy trash is removed, the revised TMRP and MFAC/BMP Program will begin to be implemented at the frequency outlined in the TMRP (without the additional clean-ups).

As a result, the responsible parties are not conducting an assessment of the program or proposing any revisions to the MFAC/BMP Program during this annual report. The focus on removing remaining legacy trash in the Estuary during the monitoring year does not allow for development of an assessment of the baseline MFAC/BMP Program this year. Once the legacy trash is removed and the MFAC/BMP Program has been implemented without the legacy trash, the responsible parties will have a clearer understanding of the effectiveness of the baseline MFAC/BMP Program. However, through the initial implementation of the revised MFAC/BMP Program, it is clear that the revised MFAC/BMP Program is a better use of resources and much more effective at removing trash from the Estuary compared to the previous MFAC/BMP Program. If any needs for MFAC/BMP Program changes come up during an on-going monitoring, the responsible parties will provide detailed information in the next Annual Report. Appendix 1. VLT Assessment and Collection Worksheets



# **Appendix A – Trash Visual Survey Worksheet**

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	necessary. Note any categorical variation in levels of tras If necessary, categorize these areas individually.	h
	, Category 2 (10-100 pcs), Category 3 (>100 pcs)	
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2) State Part/city = 1	3 trash pile	
3) state out / city = 1	2 bottles, trisk codboard	
9 state park - 2	1 tent with mattress and	l clothes
5) RV Park - 3	3 Camp with dothing & period e	fects in river
6) RV Purk - 3	2 pile of spay cans	
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Ventura River Estuary Trash Monitoring and Reporting Plan 15

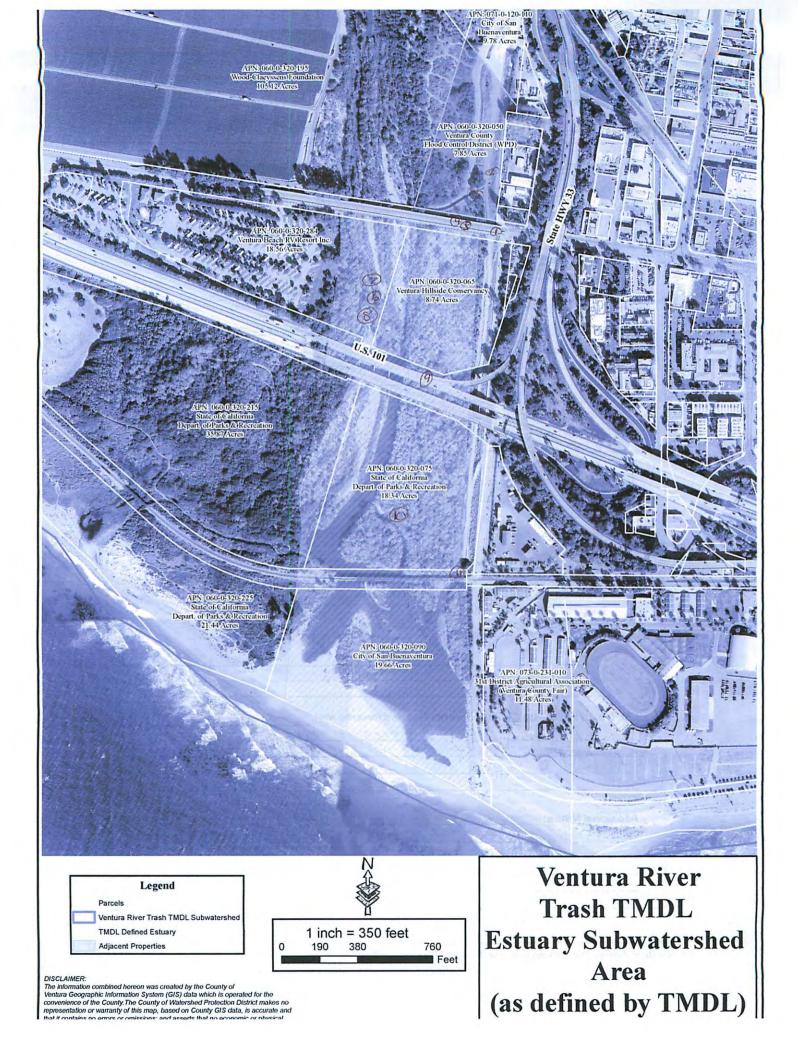
# **Appendix A – Trash Visual Survey Worksheet**

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Ventura River Estuary Trash Monitoring and Reporting Plan

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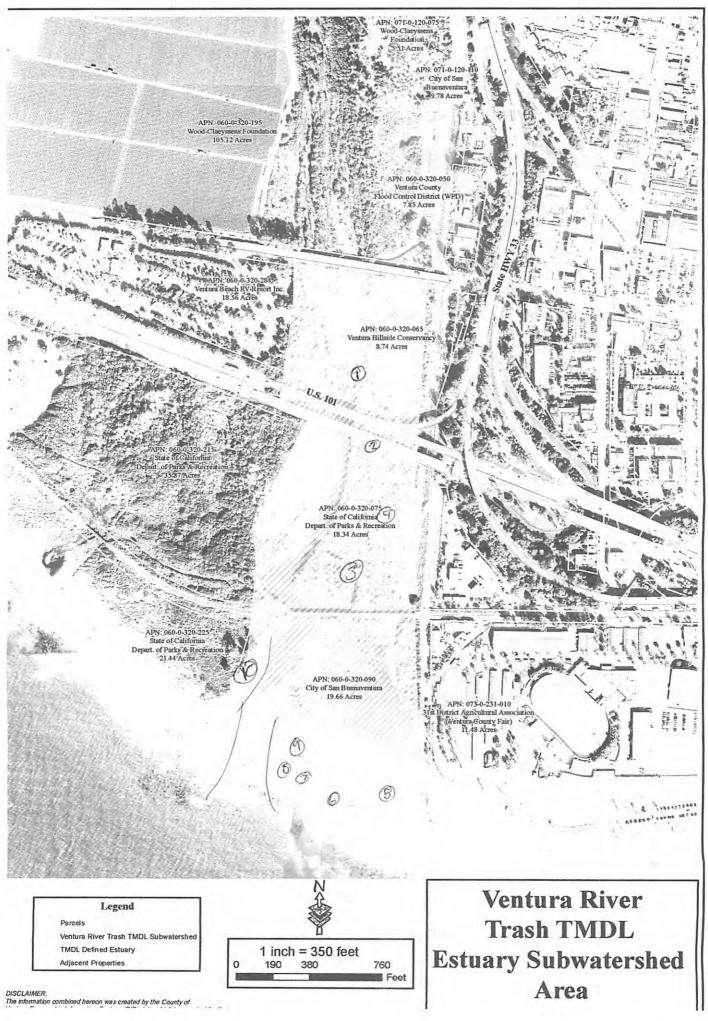
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nspector: K. Furling & G.	Sprak	Survey Start/ End Time: 2:157 4:00p
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O main st bridge 3	2	print car, terpe, boxs, clother
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Ventura River Estuary Trash Monitoring and Reporting Plan 15

	ash Visual Survey Worksheet
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Ante	cedent Weather Condition: Over cart the suny
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(i)	Stak Pirk cypes 3 Junge active camp.
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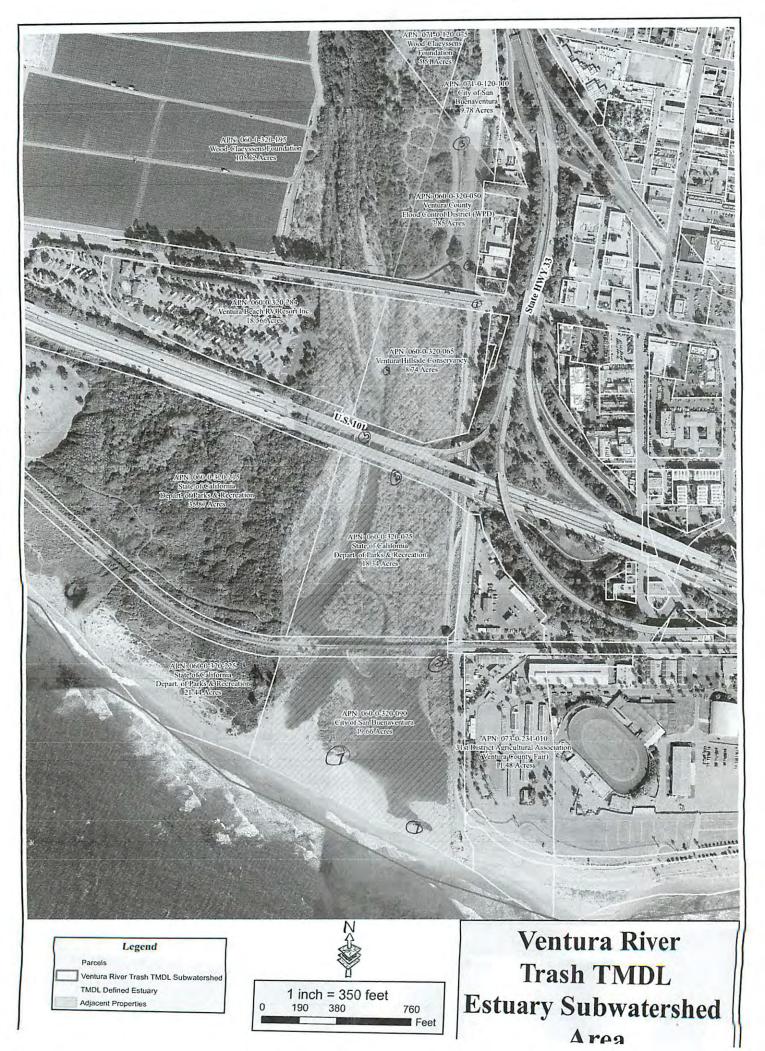
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spector: K. Furland 9	L. Noriego Survey Start/ End Time: 914/2/1013 3 GM
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Ventura River Estuary Trash Monitoring and Reporting Plan



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Trash Visual Survey Worksheet         Parcel No.: 1, 2, 3, 4         Inspector: K. Fulling + C. Rogeri         Survey Date: 3/29/18         Survey Start/ End Time: 11:451 12:50         Current Weather Condition: Over Cast         Antecedent Weather Condition: over Cast
Level of Trash Observed: Refer to Program Monitoring Area Map as nocessary. Note any categorical variation in levels of trash observed in different areas of the parcel. If nocessary, categorize these areas individually. <u>NEY: Category 1 (&lt;10 pcs). Category 2 (10-100 pcs). Category 3 (&gt;100 pcs)</u> <u>Notes/ Parcel Area:</u> <u>1-2 Mein 54 bride</u> . <u>3</u> <u>2 methrest. (lothary. Aoed truth</u> <u>3 101 (3ed) 2-3 2 active Carebourded to the second to the second</u>
Types of Trash Observed (check all that apply):         Plastic/Styrofoam       Paper Products/Biodegradable         Landscape Materials       Aluminum/ Metal         Toxic/Hazardous Materials       Glass         Personal Effects       Sports Equipment         Notes:       ACTWL         Campis       home         been       post-d         products/Biodegradable       Automotive         Biohazardous       Other
Est. No. of Follow-up Cleanup Events Needed (describe why): 1 to remove what is left behind at the comps.
Additional Notes: Cauld not safely cross nuer for 

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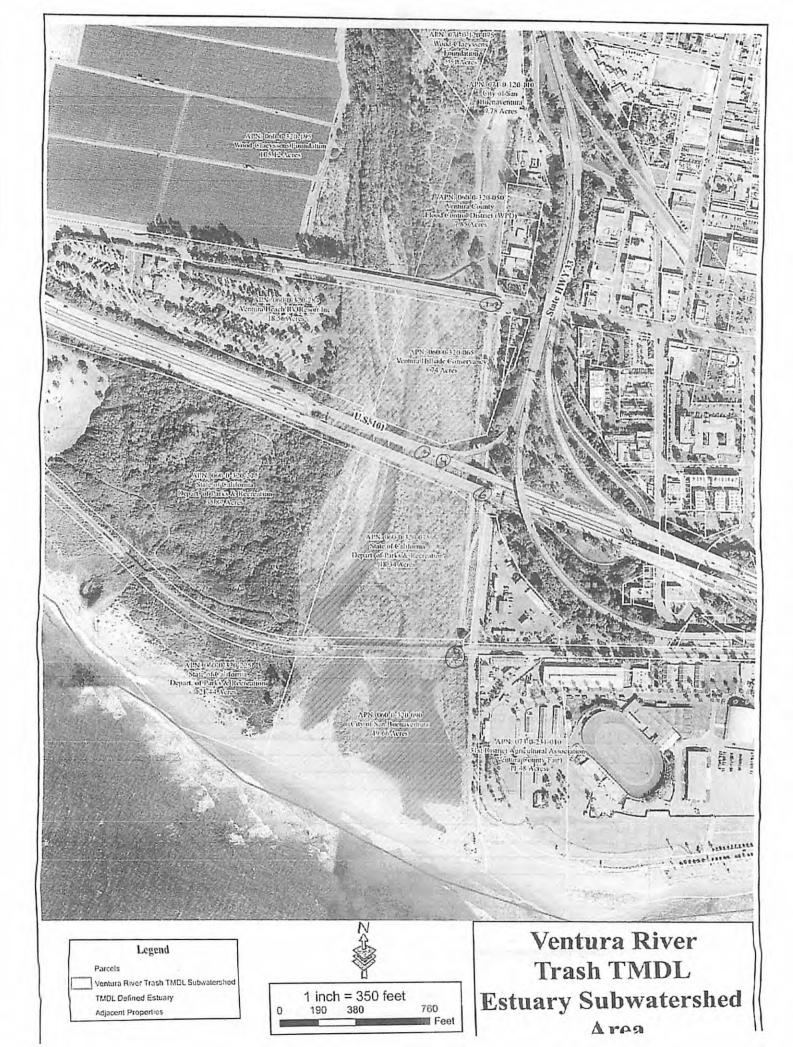
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Ventura River Estuary Trash Monitoring and Reporting Plan 15

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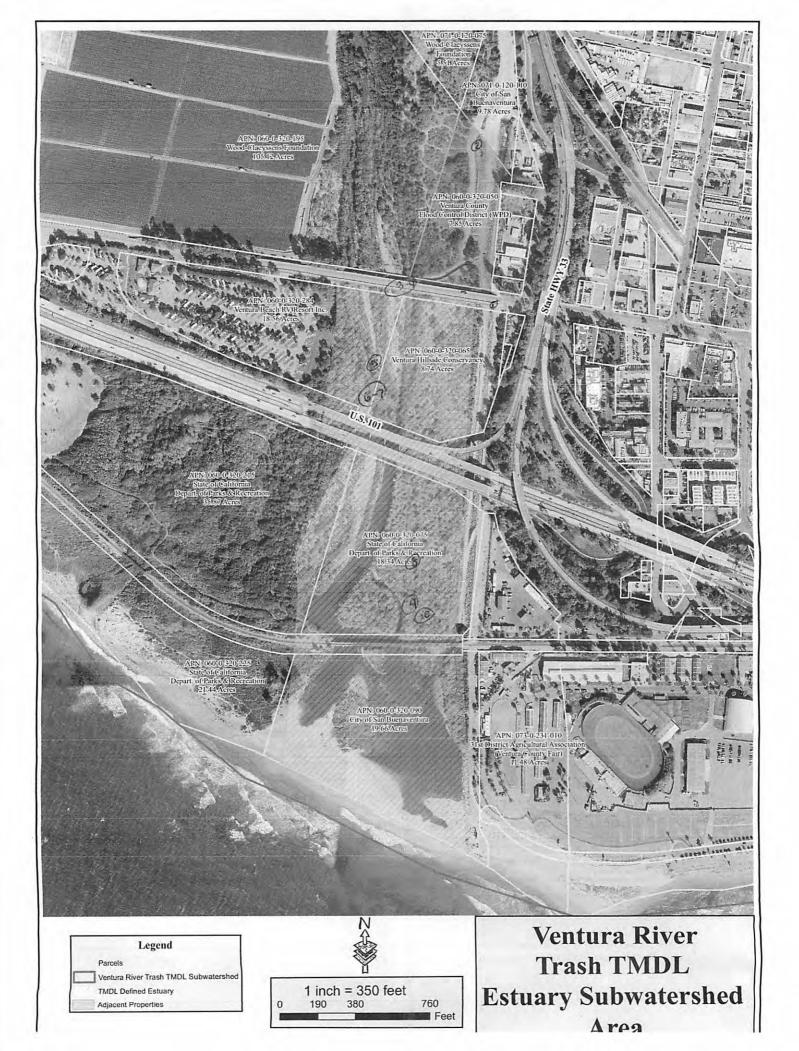
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Trash Visual Survey Worksheet
Parcel No.: 1, 2, 3 9-4 Survey Date: 4.12.18
Inspector: K. Furlow & L. Norvea Survey Start/ End Time: 11:23 12:57 pm
Current Weather Condition.
Antecedent Weather Condition:
Level of Trash Observed:
Refer to Program Monitoring Area Map as necessary. Note any categorical variation in levels of trash observed in different areas of the parcel. If necessary, categorize these areas individually.
KEY: Category 1 (<10 pcs), Category 2 (10-100 pcs), Category 3 (>100 pcs)
Notes/ Parcel Area: <u>Category:</u> <u>Reason(s) for Category Rating:</u> () Main St bridge ist when 3 2 feed trach, bottles, here, drive narietycles
1) Mar St bridge ist sam 3 2 Good trach, bottles, bas, drug paraphrelia 1) Contry drawy 4 2 run of from streets
(3-0 May of river 3 1 crate bodge in mater
(5) Millouther aver 3 1 bather soft
Q17) Lundy site 3 2 Active landry site in met
@ State prky 2 2 pile of clothing
a state Piski 2 1 backpack + dog stroller
(10) state party 2 1 base of clothing & bottled
Types of Trash Observed (check all that apply):
Plastic/ Styrofoam / Paper Products/Biodegradable / Household Items
Landscape Materials Aluminum/ Metal Automotive
Toxic/ Hazardous Materials Glass Biohazardous
Personal Effects Sports Equipment Other
Notes:
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Est. No. of Follow-up Cleanup Events Needed (describe why): 1 mybe 2. Planity
large estrary mide clean yp 4/21/18.
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Additional Notes: Estuary Month inde open, could not crass.
LSIMO State rack poperty is early
- accessible. Controlly OTICIALS to Schedule chen yp.

Ventura River Estuary Trash Monitoring and Reporting Plan

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Ventura River Estuary Trash Monitoring and Reporting Plan 15

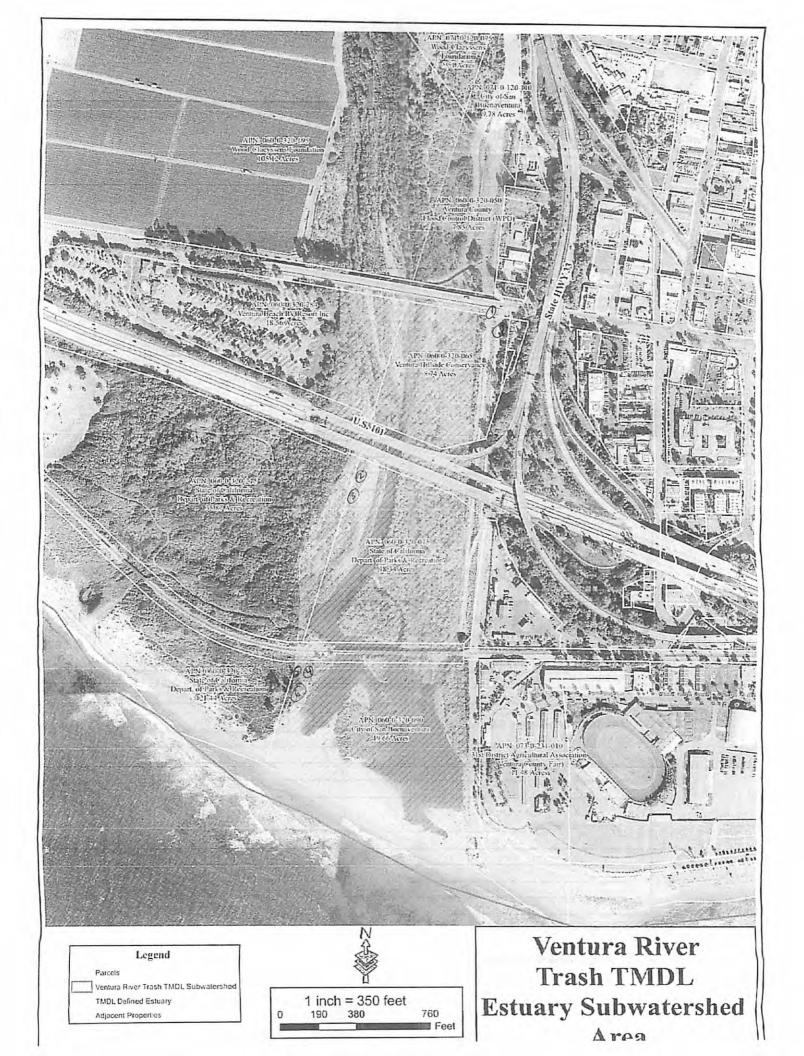
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Plastic/ Styrofoam Landscape Materials Toxic/ Hazardous Materials Personal Effects Notes: <u>broke</u> <u>d</u> 	Paper Products/Blodegradable Household items Aluminum/Metal Automotive Glass Blohazardous Sports Equipment Other ann beach tepees perents Needed (describe why): 2; clear mp & trash under the bridge and office in other
Plastic/ Styrofoam Landscape Materials Toxic/ Hazardous Materials Personal Effects Notes: <u>broke</u> d 	Paper Products/Blodegradable Household items Aluminum/Metal Automotive Glass Blohazardous Sports Equipment Other ann beach tepees perents Needed (describe why): 2; clear mp & trash under the bridge and office in other
Plastic/ Styrofoam Landscape Materials Toxic/ Hazardous Materials Personal Effects Notes: <u>broke</u> <u>d</u> 	Paper Products/Blodegradable Household items Aluminum/Metal Automotive Glass Blohazardous Sports Equipment Other ann beach tepees perents Needed (describe why): 2; clear mp & trash under the bridge and office in other

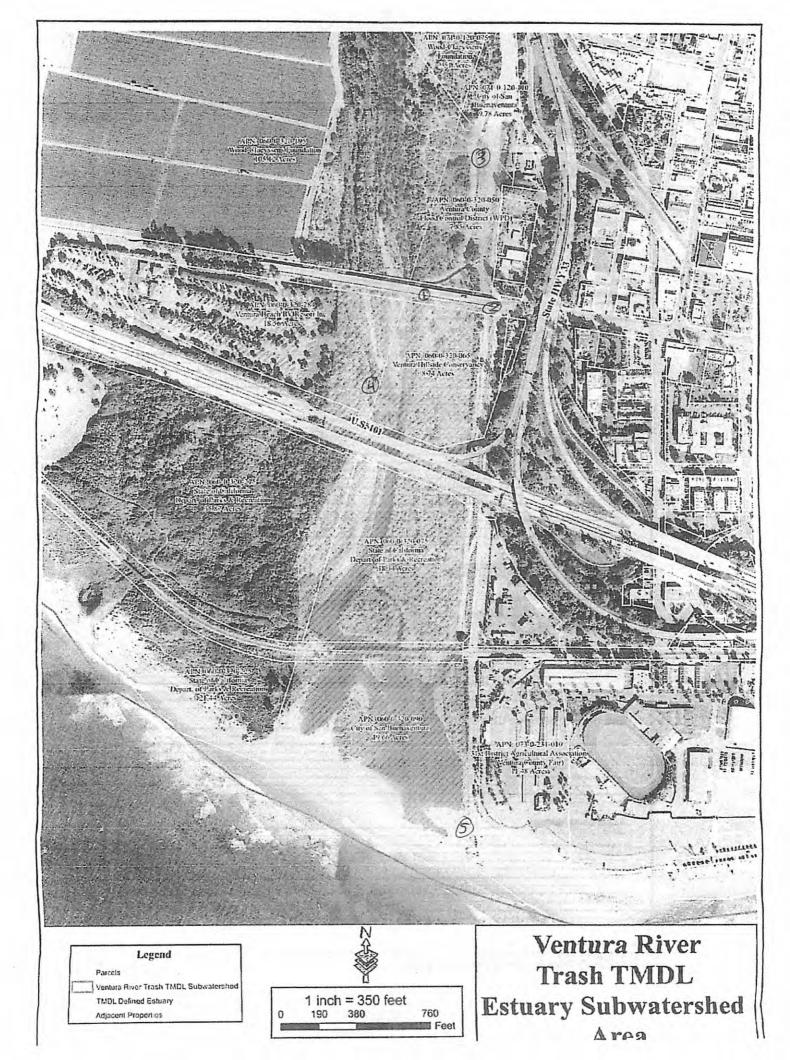
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Ventura River Estuary Trash Monitoring and Reporting Plan

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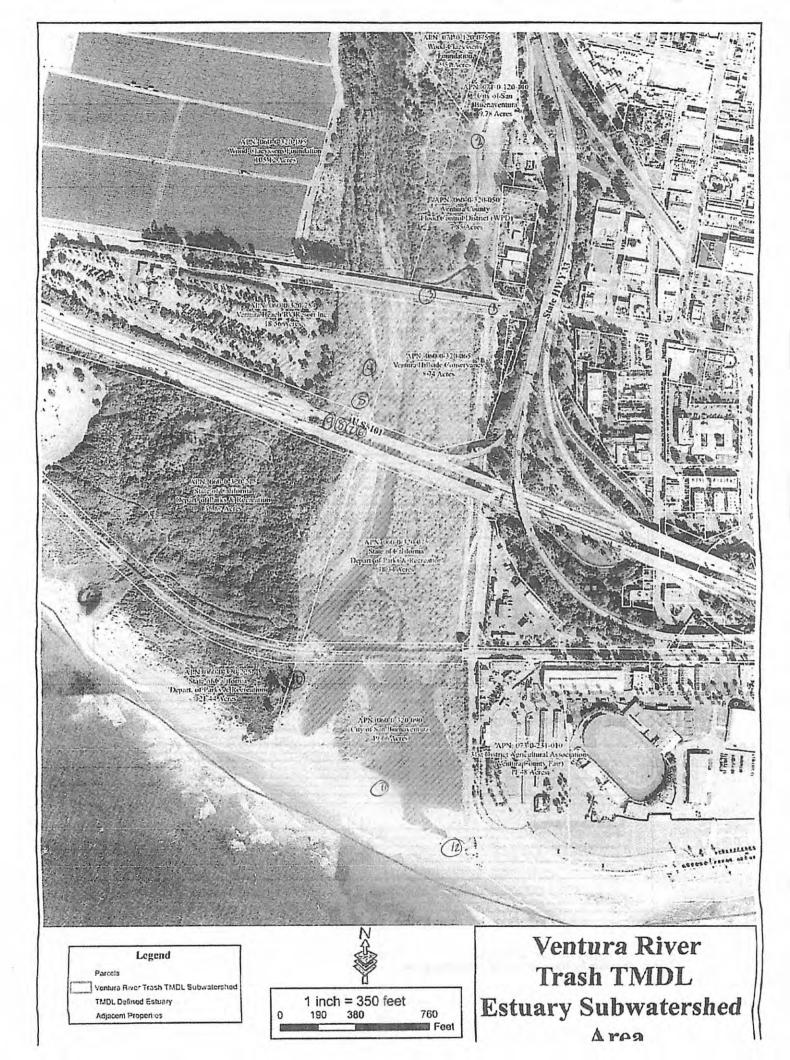
	Trash Visual Survey Worksheet         Parcel No.:       1, 2, 3 94         Inspector:       K. Furlow 4 J. Chin         Survey Start/ End Time:       9:51 / 11:43         Current Weather Condition:       Cloudy         Antecedent Weather Condition:       Cloudy         Level of Trash Observed:       Refer to Program Monitoring Area Map as necessary. Note any categorical variation in levels of trash observed in different areas of the parcel. If necessary, categorize these areas individually.
l	KEY: Category 1 (<10 pcs), Category 2 (10-100 pcs), Category 3 (>100 pcs)
l	Notes/ Parcel Area: Category: Reason(s) for Category Rating:
{	@ Main st bridge 3 1 find task, needles, bike time
	O Drainingo ditch 4 1 fond trash, cani, cigorotte bits
	(2) Min st bridge 3 1 reidler, clothes, swap
	(4) viver crossing 3 1 clother boxes soape
3rd schody	() Unite spirit
*	2 101 2 3 2 Trish pile in over into 101
~ 1	(8) 101 3 trash pile 9 annello fortners
200	1 Carts with machate
• *	12 cypress grave 2 2 trish pile by water
	(DBench 1 1 tecpel
	(12) Cuty back 1 1 tent on beach (unsure it day use)
	Types of Trash Observed (chock all that apply):         Plastic/ Styrofoam       Paper Products/Blodegradable         Landscape Materials       Aluminum/ Metal         Toxic/ Hazardous Materials       Glass         Personal Effects       Sports Equipment
	Notes: <u>telpee</u> broken down to disconge othere being built
-	Est. No. of Follow-up Cleanup Events Needed (describe why): 3 + Massive trash piler inder 101 Mire Jesse Budle wed to live.
	Additional Notes: Will contact Caltrans of VPD for assistance
	·

Ventura River Estuary Trash Monitoring and Reporting Plan

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Parcel No.:		3,94	rksheet	Survey Date:	8.1-	1.18	
nspector:	K. Furling		IST	Survey Start	/ End Time: )	1:001.12:	09
	ther Condition					•	<u> </u>
Antecedent	Weather Cond		vast				
Refer to Pro	rash Obser ogram Nonitori o different srae	inn Area Map	os nocossery. N	ote any categorical categorize these a	i variation in ist roas Individual	vels of trash	
				10-100 pcs), Cate			
Notes/	Parcel Area:		Category:	Reason(s) for	Category Rat	ng:	
∩	ty service	e road "	4	food	truch, but	they cons	
22 de	site dit	rh	4 1	defini	J Aud	trish	
S. A	19VET		3 2	_ landr-	in nu	1 hinging	
(4) 10	1	2	-3 1	_ persu	hel ette	at , toon	broch
	Ary about	- 1	$\frac{1}{3}$	<u> </u>	TSP may	SAC: 400	hi-
<u>(b) m</u>	and street	- bondge		_ drug p	H. giu	Spay con	<u> </u>
••••••							
						·····	
Plast Land Toxic	<b>Frash Obser</b> tic/ Styrofoam scape Materia / Hazardous M onal Effects /	√ ts,		,	Auto	sehold items v Imotive vazardous, r	
Plast Land Toxic	lic/ Styrofoam scape Materia :/ Hazardous M	√ ts Materials √	Paper Produ Atuminum/ I Glass Sports Equip	Aetal /	Auto Bioh Oihe	azardous,	
Plast Land Toxic Perso	ic/Styrofoam scape Materia :/Hazardous M onal Effects /	√ ts Materials √	Paper Produ Atuminum/ S Glass	Aetal /	Auto Bioh Oihe	azardous,	
Plast Land Toxic Perso	ic/Styrofoam scape Materia :/Hazardous M onal Effects /	√ ts Materials √	Paper Produ Atuminum/ I Glass Sports Equip	Aetal /	Auto Bioh Oihe	azardous,	
Plast Land Toxic Perso Notes:	tic/Styrofoam scape Materia / Hazardous M onal Effects /	dis Materials <u>Camps</u>	Paper Produ Atuminum & Glass Sports Equip	Aetal /	Auto Bioh Oihe	azardous,	
Plast Land Toxic Perso Notes:	tic/ Styrofoam scape Materia / Hazardous N onal Effects /  f Follow-up (	dis Materials <u>Camps</u>	Paper Produ Atuminum & Glass Sports Equip US COMP & Vents Neede	Aetal /	Auto Bioh Other Logis feet	protive pazardous, or or for_the	
Plast Land Toxic Perso Notes:	tic/Styrofoam scape Materia / Hazardous M onal Effects /	√ is Materiais √ <u>Camp25</u> Cleanup Ev	Paper Produ Atuminum & Glass Sports Equit Als cource vents Neede	Aetel / orment / / fo/ d (describe why):	Auto Bioh Other Logis feet	protive pazardous, or or for_the	
Plast Land Toxic Perso Notes:	tic/ Styrofoam scape Materia / Hazardous N onal Effects /  f Follow-up (	√ is Materiais √ <u>Camp25</u> Cleanup Ev	Paper Produ Atuminum & Glass Sports Equit Als cource vents Neede	Aetel / orment / / fo/ d (describe why):	Auto Bioh Other Logis feet	protive pazardous, or or for_the	
Plast Land Toxic Perso Notes:	tic/ Styrofoam scape Materia / Hazardous N onal Effects /  f Follow-up (	√ is Materiais √ <u>Camp25</u> Cleanup Ev	Paper Produ Atuminum & Glass Sports Equit Als cource vents Neede	Aetel / orment / / fo/ d (describe why):	Auto Bioh Other Logis feet	protive pazardous, or or for_the	
Plast Land Toxic Perso Notes: 	tic/ Styrofoam scape Materia / Hazardous M onal Effects /  / 0 f Follow-up ( loundry	√ ts Materials Cleanup Cleanup ≪ e ~ e ~	Paper Produ Atuminum & Glass Sports Equit <u>Als cource</u> vents Naede and	Acted ment 1to 1to conder the	Auto Bioh Oihe Lough fet	protive azardous, r r r for the street	
Plast Land Toxic Perso Notes: 	tic/ Styrofoam scape Materia / Hazardous M onal Effects /  / 0 f Follow-up ( loundry	√ ts Materials Cleanup Cleanup ≪ e ~ e ~	Paper Produ Atuminum & Glass Sports Equit <u>Als cource</u> vents Naede and	Aetel / orment / / fo/ d (describe why):	Auto Bioh Oihe Lough fet	protive azardous, r r r for the street	
Plast Land Toxic Perso Notes: 	tic/ Styrofoam scape Materia / Hazardous M onal Effects /  / 0 f Follow-up ( loundry	√ ts Materials Cleanup Cleanup ≪ e ~ e ~	Paper Produ Atuminum & Glass Sports Equit <u>Als cource</u> vents Naede and	Acted ment 1to 1to conder the	Auto Bioh Oihe Lough fet	protive azardous, r r r for the street	
Plast Land Toxic Perso Notes: 	tic/ Styrofoam scape Materia / Hazardous M onal Effects /  / 0 f Follow-up ( loundry	√ ts Materials Cleanup Cleanup ≪ e ~ e ~	Paper Produ Atuminum & Glass Sports Equit <u>Als cource</u> vents Naede and	Acted ment 1to 1to conder the	Auto Bioh Oihe Lough fet	protive azardous, r r r for the street	

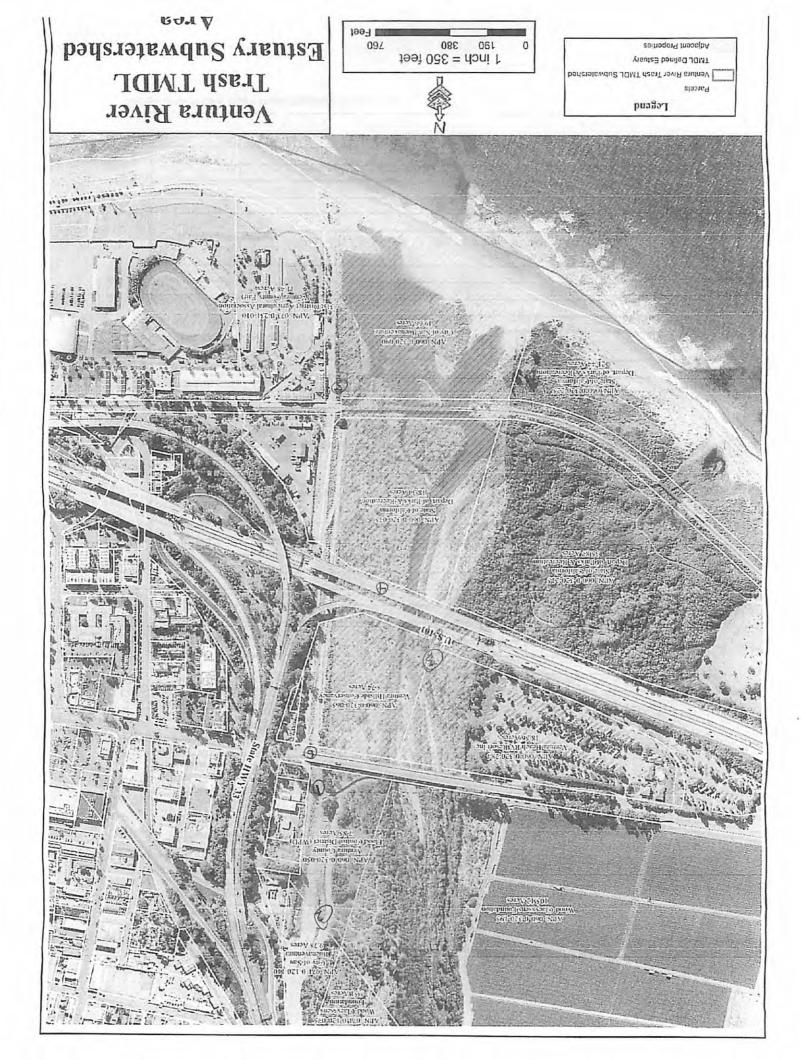
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Ventura River Estuary Trash Monitoring and Reporting Plan

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	rash Visual Survey Worksho	Survey Date: 9-7-18	
1		C Survey Start/ End Time: / PM 1 22	2. PM
I .	rector: <u>D'HJSK : K. Furlu</u> ment Weather Condition: OUVs a		20121
	ecedent Weather Condition:		
8	vel of Trash Observed: afer to Program Monitoring Area Map as neces bserved in different areas of the parcel. If noc	sary. Note any categorical variation in invols of trash	
<b>ٽ</b> م ا		pory 2 (10-100 pcs), Category 3 (>100 pcs)	
	Notes/ Parcel Area: Ca	tegory: Reason(s) for Category Rating:	
1-4	Min St Bridge 3	3 active cano Food, bing zon	1. Drys
5.6	Main St Bridg (2) 3	Blankets, trah bay had head	
	Millio SL BNG 3		Food tray
8.0	Creek Crossing 3	2 Clothing Changed biber	
	101 Bride 2/3	Bucced trath bares	
	$\frac{101}{101}$ Brig 2/3	1 Contry, Permy Arely	
1 12	- Stale Parks 2	a class, mapped, tood that	
1			المتراحكة المتتريخ
Ту	Landscape Materials Alum Toxic/ Hazardous Materials Glas	r Products/Blodegradable Household items/ inum/Metel Automotive	
	Notes:		
	t. No. of Follow-up Cleanup Events I	Beded (describe why): One chance	
	sthed vied to week		
	ditional Notes: Nomen Scre	ming in state Parks. One ( along bike path, Safety ged.	
Ad			

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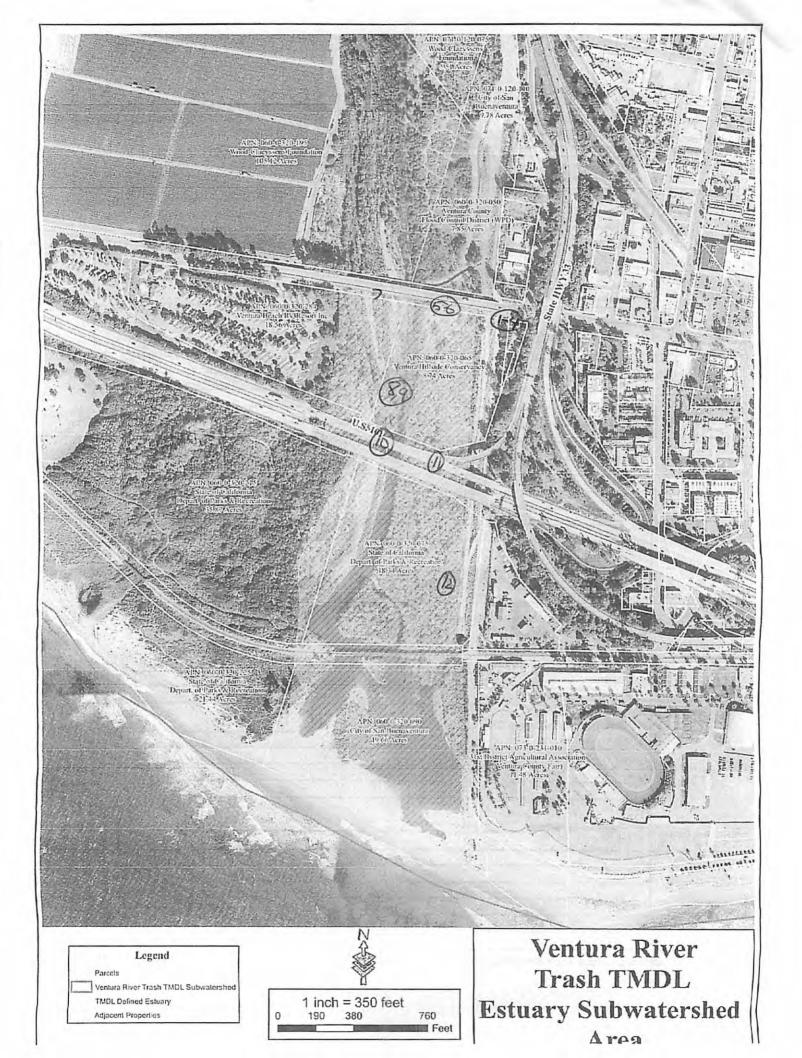
Appendix A – Trash Visual Survey Worksheet

Ventura River Estuary Trash Monitoring and Reporting Plan 15

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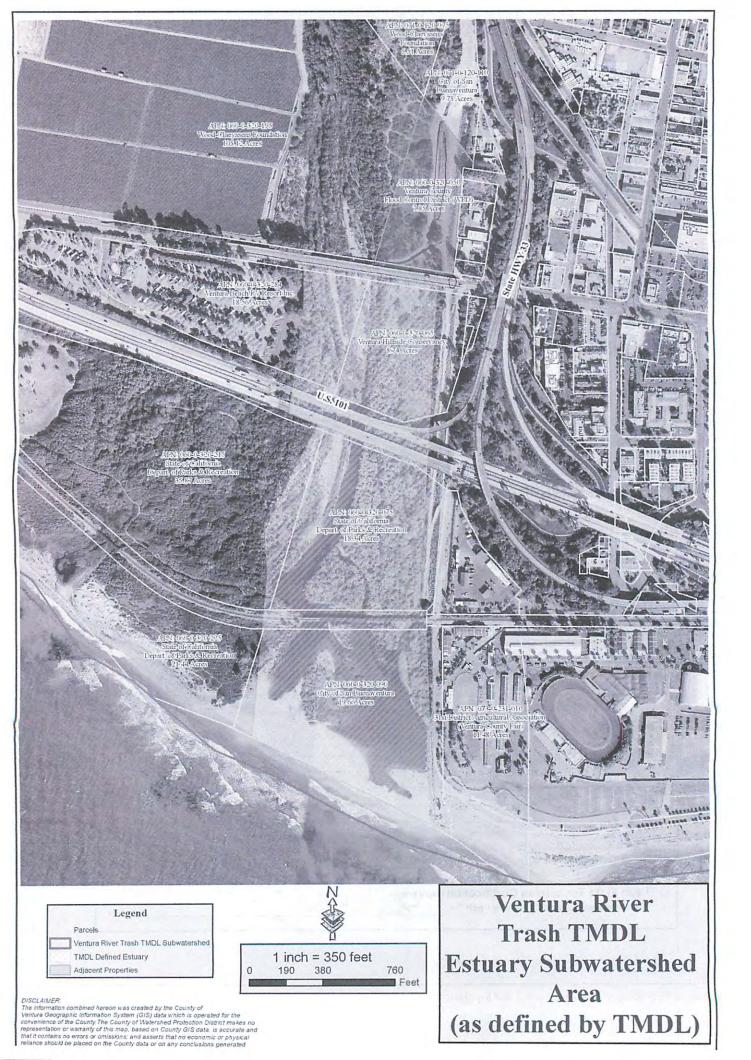
0		
Parcel No.:	Event Date: 1	1.14.11
Specific Cleanup Location: Nev ne		d Time: 10:35/1:00 pm
Field Technician name(s): K. Furl		notin
Current Weather Condition: SUNA		
Intecedent Weather Condition:	sunny	
Types of Trash Observed (check	all that apply):	_
Plastic/Styrofoam 🗸	Paper Products/ Biodegradable	Household Items
Landscape Materials	Aluminum/ Metal 🗸	Automotive
Toxic/ Hazardous Materials	Glass 🗸	Biohazardous 🗸
Personal Effects $\checkmark$	Sports Equipment	Other
Notes: (imp was located potential of items Clothing personal next to water wa	directly next to the being mished among in the effects, broken mirrow ay.	ner with extreme the flood. rs, and bousehold item
	HUMBERS CHICK	
lazardous/ Legacy Trash Requi	iring Follow-up: <u>NUNE</u>	
Additional Notes: Resident by police, vetvned campine, cited by parent	iring Follow-up: NUNL	previously remand T staff of illeral
Hazardous/LegacyTrash Requi	iring Follow-up: <u>NUNL</u> up: <u>NUNL</u> from camp was and notified by VL police and was inform is not returned to	previously removed T staff of illeral red to clean the

MFAC Event Worksheet
Parcel No.: Event Date: 1.9.17
Specific Cleanup Location: City beach / Arte full Event Start/ End Time: 7:00/11:30
Field Technician name(s): X. Furbons, D. Dunkell VLT of Surfixer Found than volunteers
Current Weather Condition: Partly, Cloudy
Antecedent Weather Condition: 01004 (10 0009
Types of Trash Observed (check all that apply):
Plastic/ Styrofoam V Paper Products/ Biodegradable V Household Items V
Landscape Materials / Aluminum/ Metal / Automotive /
Toxic/ Hazardous Materials V Glass V Biohazardous V
Personal Effects / Sports Equipment / Other
Notes: 1 st Annual Venture River to the Sea collaboration
(1 an v between Venture Land Trust and the Venture
County Choter of the Swinder Foundian, Removed truch
The Ollah from flooding chuled by valute 12ths.
J '
Potential Source(s) of Trash Collected: Homeless encomponents
Hazardous/ Legacy Trash Requiring Follow-up:
MFAC Event Actions for Follow-up: <u>♪0パピ</u>
·
Shi a la Araba a life la a strad
Additional Notes: State Park officials notified of active
camps, Trash still present, though areas known to
flood were cleared of trash.
Trash Collected:
No. of Trash Bags Filled: 40 Dumpster % Fill: 50 Dumpster Size (cubic yds): 40
Lead Field Technician Certification (sign/print)
"Cleaned area is free of all visible trash." - Kith Ford Kate Fulling

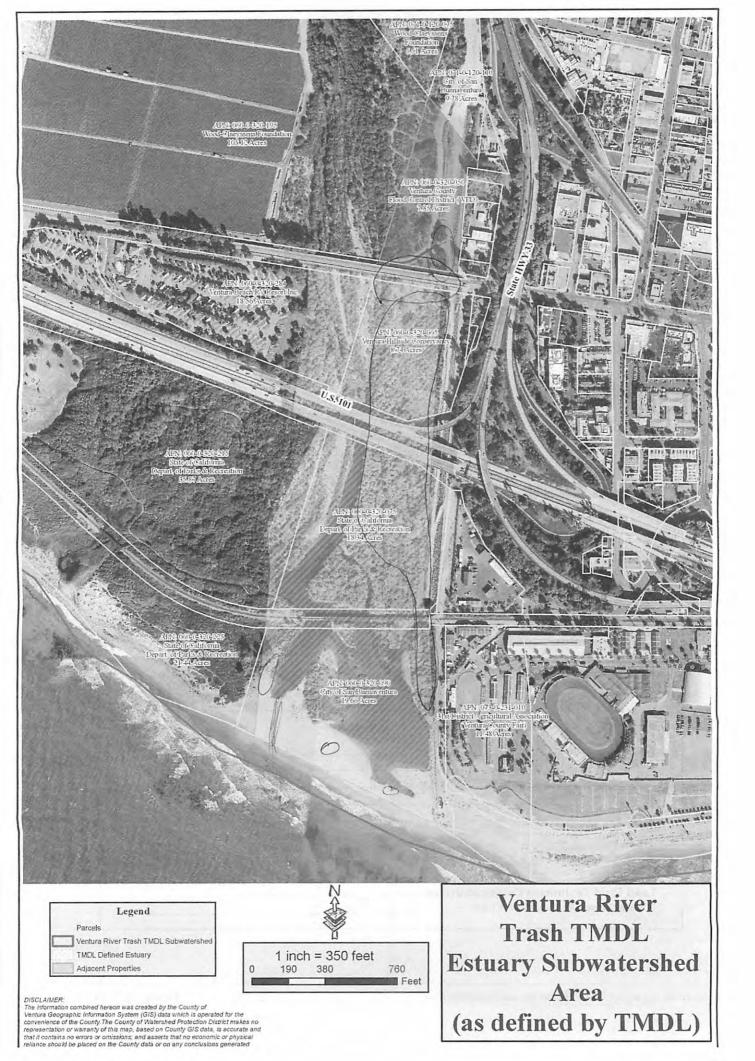
MFAC Event Works	
Parcel No.:	Event Date: 12.27.1 /
Specific Cleanup Location: 14 45	
ield Technician name(s): <u>/</u>	
Aurrent Weather Condition: 5	
Intecedent Weather Condition:	Isun y
ypes of Trash Observed	· · · · · · · · · · · · · · · · · · ·
Plastic/Styrofoam V	Paper Products/ Biodegradable Household Items
Landscape Materials 🗸	Aluminum/ Metal Automotive
Toxic/ Hazardous Mater	
Personal Effects 🗸	Sports Equipment / Other /
Notes: Areas under	the first three sections of the 2t Bridge were cleaned
trail	0
lazardous/ Legacy Trash	Requiring Follow-up: First section always needs
Hazardous/LegacyTrash attention.	Requiring Follow-up: First Section always need
attention.	
Hazardous/LegacyTrash attention MFAC Event Actions for F Additional Notes: Sector	
Attention . MFAC Event Actions for F Additional Notes: On Sector	e active camp under second sight posted and law enforcement

Ventura River Estuary Trash Monitoring and Reporting Plan

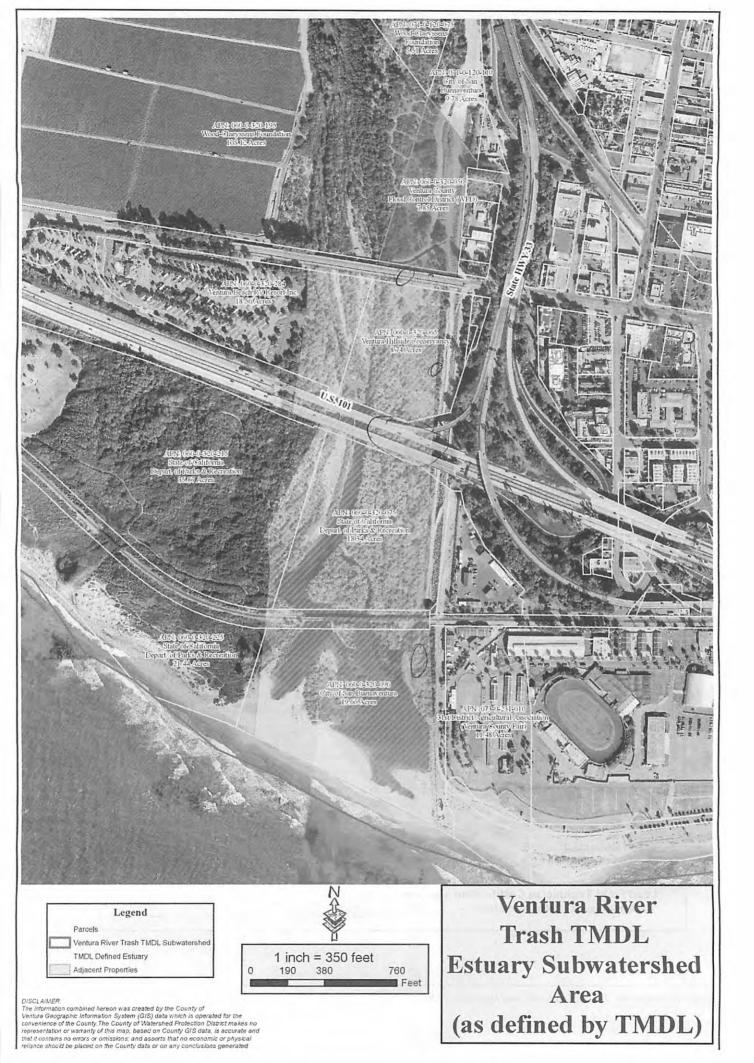
Parcel No.: 3 and 9	Event Date: 2/10/18
Specific Cleanup Location: Court	chune A Man St. Event Start/ End Time: 10:27 /11:19-
	Furlong + Stat Setunday Volunteary
	overset
Antecedent Weather Condition:	Over Cast
-	
Types of Trash Observed (ch	,
Plastic/ Styrofoam	Paper Products/ Biodegrad able Household Items
Landscape Materials	Aluminum/ Metal Automotive Glass Biohazardous
Toxic/ Hazardous Materials	
Personal Effects	Sports Equipment Other
Notes: (leaned tra	is gathered in the champeled area of
1	roberty as well as the first sector up
м (, )	abasat bodag
The min	siver origin
Potential Source(s) of Trach	Collected: Kin of forme stage to Cha
	Collected: run off from streets after homeless activity
THE PAIN and	homeless activity
Hazardous/Leasov Trash Po	
Hazardous/Legacy Trash Re	quiring Follow-up: Areas to be munitured for
Hazardous/LegacyTrashRe	equiring Follow-up: Areas to be munitured for fter next rate
Hazardous/Legacy Trash Re Move frail a	quiring Follow-up: <u>Areas</u> to be monitured for fler next rails
Hazardous/Legacy Trash Re Move frail 6	equiring Follow-up: <u>Areas to be manitured for</u> Her next rails
more that a	fter next rah
more that a	fter next rah
more that a	fter next rah
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More frish a	fter next rah
More frish a	fter next rah
More frish a	fter next rah
More thil a	ster next raih
Hazardous/ Legacy Trash Re Mor L hul MFAC Event Actions for Follo Additional Notes: Trash Collected: No. of Trash Bags Filled:	fter next rah
More hales	ster next raih



	2,394	Event Date: 2 · 1	
Specific Cleanup	Location: Entime riv	ver potrolare Event Start/ End Tim	
Field Technician r	name(s): <u>K</u> . Fu	urlang, C. Rogers, + Volunte	<u>rs</u>
Current Weather (	Condition: Sunn		
Antecedent Weat	her Condition:	nny	<u>.</u>
Types of Trast	n Observed (check all	i that apply):	
Plastic/ St	yrofoam 🖌	Paper Products/ Biodegradable	Household Items
Landscape	e Materials	Aluminum/_Metal	Automotive
Toxic/ Haz	ardous Materials	Glass 🗸	Biohazardous
Personal E	Effects	Sports Equipment	Other
Notes: Pr	trolled and a	enoved trash from TMD.	L MFAC Parsels
with	Red Seturale	volunteers, Broke don	
	remared their		der man street
- ann Gn	101 brida	PSO TO TO	a an interneting.
	ivi priag	<u></u>	
			· · · · · · · · · · · · · · · · ·
Hazardous/1 a	nacy Trash Requiri		d Janneless and L
Hazardous/Le	gacy Trash Requiri heylth and	ing Follow-up: Emma Woo safety hazards al	d homeless populations water may.
			d homeless populations upsternay.
Causing	health and	safety hozards al	ms watermay.
Chusing MFAC Event A	health and	p: Increase law enforces	ms watermay.
Causing MFAC Event A State	health and	safety hozards al	ms watermay.
Chusing MFAC Event A	health and	p: Increase law enforces	ms watermay.
Gusing MFAC Event A State event.	health and ctions for Follow-up Park side c	p: Increase law enforces of beach and plan	ne preserve on snotter clear yp
MFAC Event A State evert.	tions for Follow-up Park side a	p: Incorrect law enforces of beach and plan. t drift wood and mov	ne preserve on snotter clear yp
MFAC Event A State evert.	health and ctions for Follow-up Park side c	p: Increase law enforces of beach and plan. t drift wood and move estuary to be us	ne preserve on snotter clear yp
MFAC Event A State evert.	tions for Follow-up Park side a	p: Incorrect law enforces of beach and plan. t drift wood and mov	ne preserve on snotter clear yp
MFAC Event A State evert.	tions for Follow-up Park side a	p: Increase law enforces of beach and plan. t drift wood and move estuary to be us	ne preserve on snotter clear yp
Chusing MFAC Event A State event. Additional Note fiel	health and ctions for Follow-up Park side a es: <u>Spread</u> out ater in the and deter	p: Increase law enforces of beach and plan t drift wood and mov estuary to be us people from building	ng waternay. net preserve on snother clear yp and some into ed by birds and mure trepees.
MFAC Event A State evert. Additional Note	health and ctions for Follow-up Park side a es: <u>Spread</u> out ater in the and deter	p: Increase law enforces of beach and plan. t drift wood and move estuary to be us	ng waternay. net preserve on snother clear yp and some into ed by birds and mure trepees.

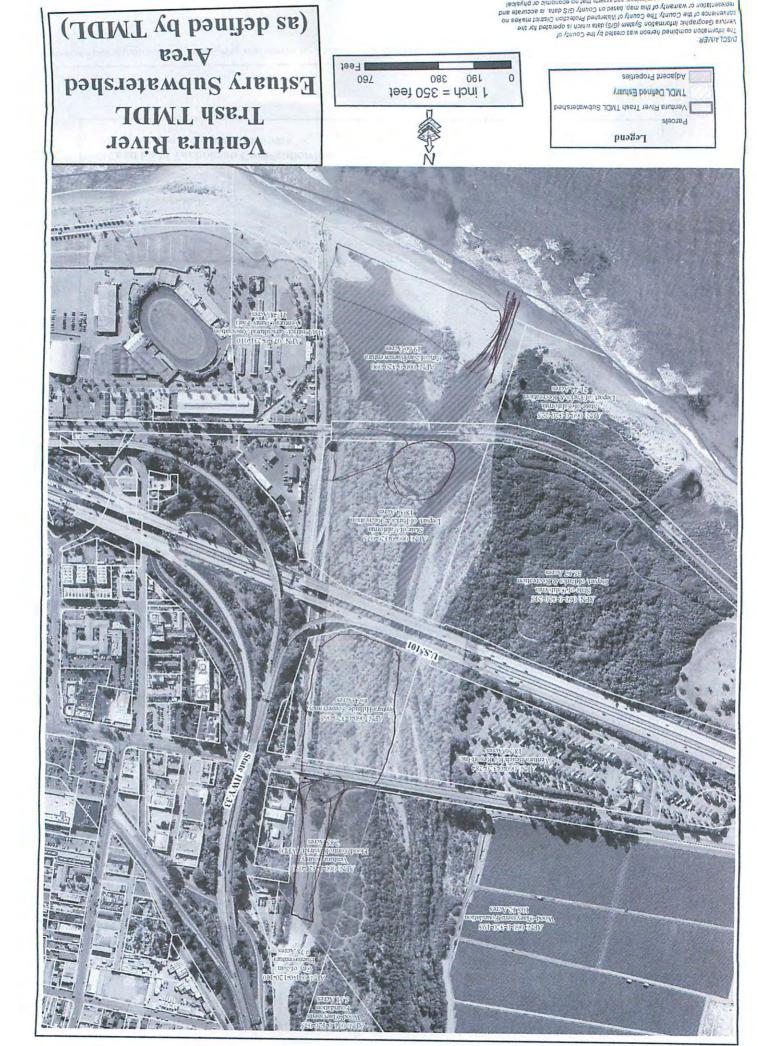


Parcer No	: <u>Main bridge</u> 3, 101 (ity, Shite Event Date: <u>3.30.18</u> leanup Location: <u>Event Start/ End Time: <u>9.01</u> / 12:05</u>
	leanup Location: Event Start/ End Time: 9:01 / 12:05
	nician name(s): Ki Furking, J. Durn, & Patagonic employees
	eather Condition: over Cast
Antecede	t Weather Condition:
Types o	Trash Observed (check all that apply):
Pla	stic/ Styrofoam V Paper Products/ Biodegradable Household Items
Lar	dscape Materials Aluminum/ Metal Automotive
Тох	ic/ Hazardous Materials
Pe	sonal Effects Sports Equipment Other
Notes	: Cleared 3 abudaned cancel tocated under Man
	Street and 101 briddes 2 bikes, flooring
,	hoterial found brought to Hebitat for throught
	in the state of th
Potentia	I Source(s) of Trash Collected: Homeless
Hazardo	us/ Legacy Trash Requiring Follow-up:
Hazardo	us/Legacy Trash Requiring Follow-up:
Hazardo	us/ Legacy Trash Requiring Follow-up:
Hazardo	us/Legacy Trash Requiring Follow-up:
	us/Legacy Trash Requiring Follow-up: <u>N/A</u>
MFAC E	
MFAC E	vent Actions for Follow-up: <u>N</u> /A
MFAC E	vent Actions for Follow-up: <u>N</u> /A
MFAC E	vent Actions for Follow-up: <u>N</u> /A
MFAC E	vent Actions for Follow-up:
MFAC E	vent Actions for Follow-up: <u>N/A</u>
MFAC E	vent Actions for Follow-up:         N /A           al Notes:
MFAC E	vent Actions for Follow-up: <u>N/A</u>



	1, 2, 3, 44 Event Date: 4.21.18
Specific Clean	Ip Location: Estrary wide Event Start/ End Time: 9:00/12:15
	nname(s): K. Furling, D. Durkey Starbucky volunteers (100
	er Condition: Perth; cbudy
	eather Condition: put H, J. C. G. d. y
Types of Tr	ish Observed (check all that apply):
Plastic	Styrofoam Paper Products/ Biodegradable Household Items
Landso	ape Materials / Aluminum/ Metal / Automotive
Toxic/	lazardous Materials Glass / Biohazardous /
Person	al Effects / Sports Equipment / Other
pro all	leared trash and removed invisive species. Wore able access the "island" on State parks party and clear the great Removed trash from 4 parcels but more unable to cross the rer life to breached estray.
	purce(s) of Trash Collected: homeless encomponents and
Hazardous	Legacy Trash Requiring Follow-up:
	Legacy Trash Requiring Follow-up: NA t Actions for Follow-up: NA. Once the month of the Closes, we will be able to cheap up over the
	t Actions for Follow-up: NA. Once the month of the Closer, we will be able to cheap up over the
MFAC Ever estvary Additional I fro.go frv.m	t Actions for Follow-up: <u>NA</u> . Once the month of the <u>Closes</u> , we will be able to cheap up over the lotes: <u>Poison</u> oak hildened some volunter acce we were able to remove all visible the the island.

17



MFAC Event Worksheet
Current Weather Condition: SUM/U
Antecedent Weather Condition: Suhn
Types of Trash Observed (check all that apply):
Plastic/ Styrofoam Paper Products/ Biodegradable Household Items
Landscape Materials Aluminum/ Metal Automotive
Toxic/ Hazardous Materials Glass Biohazardous
Personal Effects Sports Equipment V Other
Notes: <u>Children's playaround slide was in the over, blocking</u> <u>fish, used as la bridge. (8 feet). Retriend a</u> <u>net from the outer that was ineighed down</u> with rocks to catch fish.
Potential Source(s) of Trash Collected: Homeless Azhivity
Hazardous/ Legacy Trash Requiring Follow-up:
MFAC Event Actions for Follow-up: <u>N/A</u> .
Additional Notes: Nets and bridge building in this area is a continued problem. Working with E.WS. and other per there to find a prenetion.
Trash Collected:       (butty slide)         No. of Trash Bags Filled:       6         Dumpster % Fill:       50 is         Dumpster % Fill:       50 is
Lead Field Technician Certification (sign/print): "Cleaned area is free of all visible trash."

	vent Worksheet
_	Event Date: 6.25.18
	nup Location: Lower Estvary Event Start/ End Time: 8:00xil 12:11
	ian name(s): K. Furlow, VLT Staff, Warped Tour Volunteers (267)
	her Condition: 6 ver Cast
Antecedent V	Veather Condition: over cart
ypes of T	rash Observed (check all that apply):
Plastic	:/ Styrofoam / Paper Products/ Biodegradable / Household Items
Lands	cape Materials / Aluminum/ Metal / Automotive
Toxic/	Hazardous Materials Glass Glass Biohazardous
Perso	nal Effects  Sports Equipment Other
Notes:	Cleared over & tons of trash from Cypress Grove / Emma Wood area F
_ gre	Cypress Croce/Emma wood aver:
Potential S	ource(s) of Trash Collected: homdess encampments
otontial o	
· · · · · · · · · · · · · · · · · · ·	······································
····	
lazardous	/ Legacy Trash Requiring Follow-up: trash along river too herry
•	Legacy Trash Requiring Follow-up: trash along new too heavy
1	
•	
tu	remove, A lot of trish his been buried.
小 MFAC Eve	nt Actions for Follow-up: Contribute to clean up Emma Wood
tu	nt Actions for Follow-up: Continue to clean up Emma Wood
小 MFAC Eve	nt Actions for Follow-up: Contribute to clean up Emma Wood
τυ MFAC Eve Aren	remove, A lot of trish his been buried. nt Actions for Follow-up: <u>Continue</u> to clean up Emma Wood Cypness Grove. Increase law enforcement
τυ MFAC Eve Aren	nemore, A lot of trish his ben buried. nt Actions for Follow-up: <u>Contribute</u> to clean up Emma Wood Cypress Grove. Increase Law enforcement
الله معرفة المعرفة المع Additional	nemore, A lot of trish his ben buried. nt Actions for Follow-up: Contribute to clean up Emma Wood Cypress Grove. Increase law enforcement Notes: removed 2. 40 - cubic yard drapsters
الله من الله من Additional	nemore, A lot of trish his ben buried. nt Actions for Follow-up: Contribute to clean up Emma Wood Cypress Grove. Increase law enforcement Notes: removed 2. 40 - cubic yard drapsters
الله معرفة المعرفة المع Additional	nemore, A lot of trish his ben buried. nt Actions for Follow-up: Contribute to clean up Emma Wood Cypress Grove. Increase law enforcement Notes: removed 2. 40 - cubic yard drapsters
h MFAC Eve ΔYen Additional 64	remove, A lot of trish his been buried. nt Actions for Follow-up: <u>Continue to clean up Emma Wood</u> <u>Cypress Grove</u> . <u>Increase law enforcement</u> Notes: <u>removed</u> 2. 40 - <u>cubic</u> yard <u>dumpsters</u> arundo
Additional	remove, A lot of trish his been buried. nt Actions for Follow-up: Contribute to clean up Emma Wood Cypress Grove. Increase law enforcement Notes: removed 2. 40 - cubic yard drapsters arundo
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Parcel No.: $2+3+4$	Event Date:	
Specific Cleanup Location: Under	Main St. Scrvice Rod Event Start/ Er	nd Time: 10:30/12:40
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Current Weather Condition:	Nocast	·····
Antecedent Weather Condition:		
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Landscape Materials	Aluminum/ Metal	Automotive
Toxic/ Hazardous Materials	Glass	Biohazardous 🗸
Personal Effects	Sports Equipment	Othen
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Parcel No.: 3	Event Date: Scaf 25th Zol8
Specific Cleanup Location: Main	St Bridge, Creck comp Event Start/ End Time: 10AMI Noon
Field Technician name(s):	D. Hulst . J. Harrison
	OVINGEST
Antecedent Weather Condition:	
-	000-2037
Types of Trash Observed (	check all that apply):
Plastic/ Styrofoam	V Paper Products/ Biodegradable Household Items
Landscape Materials	Aluminum/ Metal
Toxic/ Hazardous Materia	
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Appendix 2. VLT Clean-Up Photos

**Cleanup Photos** 



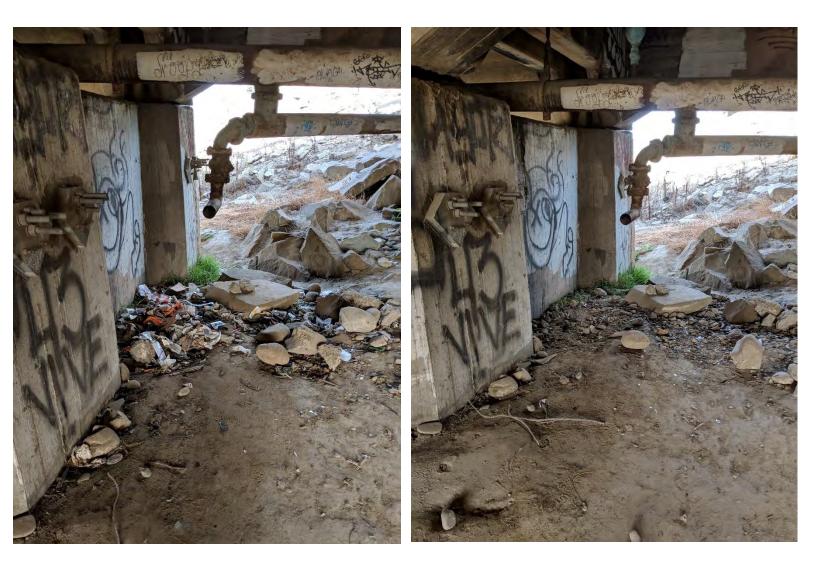
11.13.17: Clothing and personal affects abandoned at a camp next to the river in MFAC area 3



11.13.17: Area next to river after clearing the abandoned camp



**<u>11.19.17</u>**: Fortified Camp on City Beach disassembled and cleared with the help of volunteers at the first annual VLT and Surfrider Foundation River to the Sea Cleanup Event.

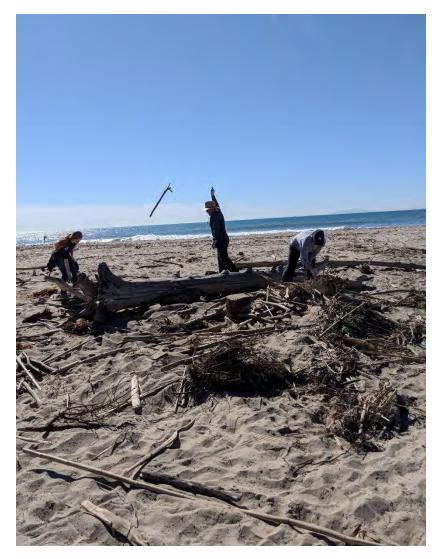


**12.22.17:** Before and After of area under the first section of the Main Street bridge next to the bike trail



2/10/18 Clean up: Before and after of drainage ditch on Parcel 4 (County)





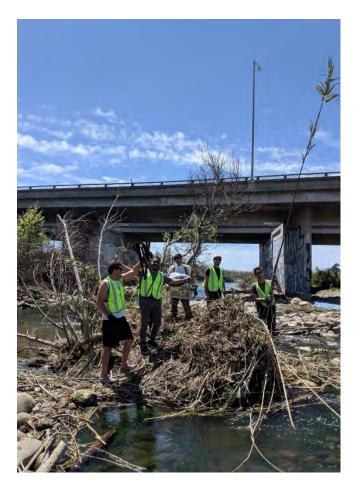
2/17/18 Cleanup: Volunteers helped clean the beach and break down abandoned beach teepees.



3/30/18 Cleanup: Patagonia employees and volunteers cleared several large abandoned camps under the Main Street and 101 Bridges (101 pictured here).







4.21.18 Cleanup: On Earth Day, Starbucks employees help clear Arundo at the 'Laundry Spot' between Willoughby and RV properties by the 101





6.12.18 Cleanup: Net removed from the river. This is the third net pulled from this area and it was blocking all fish passage. Rocks tied in to weigh down the bottom and Arundo across the top for floatation. FWS contacted about the issue.



6.25.18 Cleanup: Warped Tour Volunteers along with State Parks and City employees, and Surf Rodeo volunteers came together and helped remove over <u>8 tons</u> of trash from the cypress grove.

Volunteers dig up a buried trash pile that has flooded after the river mouth closed



Volunteers help dismantle the Cypress Grove Arundo and palm palisade



Warped tour volunteers piled bags to be loaded on carts driven by State Parks employees



9.15.18 Cleanup: An abandoned camp is rendered invisible thanks to the help of our volunteer effort on California Coastal Cleanup Day.



9.15.18: Just some of the waste collected on Coastal Cleanup Day



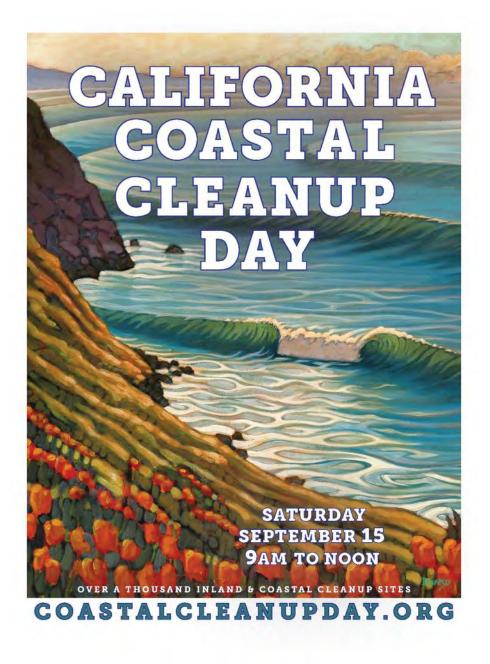
9.25.18 Cleanup: Assorted trash including spray cans, clothing, and an abandoned stroller strewn through the river bottom.



9.25.18 Cleanup: Quite a haul off!

Appendix 3. Countywide Outreach Materials

### **County Outreach Materials**







Community for a Clean Watershed shared Ventura County Annual Coastal Cleanup Day's post.

October 1 at 10:51 PM · 🕅

# WELL DONE VENTURA COUNTY!

Thank you for making Coastal Cleanup Day a huge success!

- 2,886 volunteers
- 11,742 pounds of trash
- 702-5 pounds of recyclables

43 miles covered

\*Unusual items include: scooter, graduation gown, mannequin torso, tractor tire, wooden shoes and an official geocache!

# Ventura County Annual Coastal Cleanup Day

September 26 at 9:41 PM · 💮

We would like to take a moment and thank all of our volunteers who contributed to the success of Coastal Cleanup Day 2018! Here is a summary of our preliminary results.

Although our event is over, our efforts shouldn't be. Let's strive to keep our beaches and waterways clean every day!

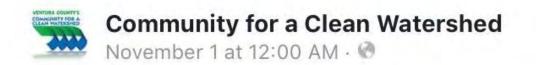
5 Likes

# VENTURA COUNTY'S WATERSHEDS MAKELIFE BEAUTIFUL

# PROTECT THEM FOR THE FUTURE

COMMUNITY

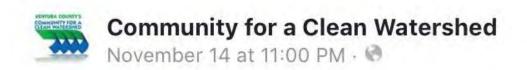
Find out how you can help at cleanwatershed.org



Happy Halloween #VenturaCounty! Make sure your candy wrappers don't become litter. Wrappers made of plastic and foil are not biodegradable and can pollute our waterways, potentially harming aquatic life.



12 Likes · 1 Comment

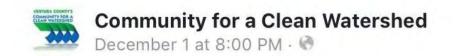


Did you know? Cigarette filters are made of plastic, which isn't biodegradable. Litter gets into our waterways and can harm aquatic life. Kick the habit now for the health of #VenturaCounty watersheds! Learn more at

http://www.cleanwatershed.org/watershed-trashfacts/



7 Likes · 1 Comment



Did you know that when it rains, water accumulates on our streets & flows into storm drains, bringing pollutants with it? This stormwater ends up in our creeks, rivers & oceans . Please properly dispose of trash. #KeepVenturaBeautiful





How is the Watershed Protection District working with the community to reach their zero trash goal to keep the Ventura River Estuary Clean?



Meet John Harrison, Volunteer...

VCPWA Watershed Protection District and other Total Maximum Daily Load (TMDL) stakeholders are collaborating with Ventura Hillsides Conservancy to clean up and restore the Ventura River estuary.

Since 2016, volunteer John Harrison has been dedicated to helping us reach our zero trash goal. John volunteers weekly – sometimes on his own, with his friend Frank, or with the Saturday volunteer group. He helps clean up trash in the Ventura River estuary and along the Ventura River Bike Trail.

On a given day, John clears up at least 2 full bags of litter, which include aluminum bottles, clothing, shoes, tents, sleeping bags, barrels, bicycle parts and more.

What keeps John motivated to keep coming back? "Before volunteering, I had no idea about the amount of litter that regularly accumulates in the Ventura River estuary, and what kind of dangers this poses to the marine and wildlife in the area. Ventura citizens very much enjoy the native fish and birds; they are part of what makes our coast beautiful and special. Now, I am much more aware of litter, and I hope others learn to be more mindful when they toss water bottles or other garbage on bike and walking trails. We're so accustomed to living in a clean environment, but people don't realize they're taking organized trash pick-up for granted."





# There's No Poop Fairy PICK IT UP!

More watershed tips at cleanwatershed.org



**California Department of Transportation** 

# **Protect Every Drop** Campaign Artwork Guidelines

A public education campaign guide for promoting clean water.

A Campaign Developed by Caltrans®





# **About the Campaign**

"Protect Every Drop" was created by the Caltrans' Stormwater Management Program team to help encourage positive behaviors by the motoring public to help improve water quality throughout the state. By reducing stormwater pollution in and around the roadway and highway systems throughout California, water that flows into major watersheds in the state will carry less pollutants and reduce the impact to our precious waterways.

The campaign also addresses pollutants found in highway stormwater that may originate from non-highway sources such as pesticides and bacteria from natural sources. This campaign aims to help improve water quality in our streams, rivers, lakes and coastal waters, keeping them drinkable, swimmable and fishable.

## **Key Actions**

Most Californians are unaware of stormwater runoff pollution and what they can do to reduce its effects. The campaign addresses key actions the public can take to stop pollution at its source, including:

- Recycle and properly dispose of trash and other items containing pollutants
- Cover and secure loads so items do not fall out or blow off onto the roadway
- Perform routine vehicle maintenance to reduce and eliminate leaks
- Properly inflate tires to reduce wear and emissions and help reduce pollution
- Wipe off wheel wells and tire rims to clean off brake dust and heavy metals
- Properly dispose of cigarettes so they don't end up on the roadway, highway or waterbodies
- Keep vehicles clean to prevent residue from washing off when it rains
- Only use ecofriendly fertilizers and pesticides when rain and wind is not in the forecast
- Pick up and properly dispose of pet waste



# **Campaign Materials**

All campaign materials developed are available free of charge to partners and include a series of template materials.

Materials can be used "as is" or customized, with Caltrans approval, to address local or regional needs. This is available to any clean water, stormwater, solid waste or other relevant agency who share the same mission.

All campaign materials can be downloaded at <a href="http://www.protecteverydrop.com/doing-your-part/public-materials-toolkit">http://www.protecteverydrop.com/doing-your-part/public-materials-toolkit</a>

Logo



#### Infographic



#### **Billboards**

Northern California



Southern California

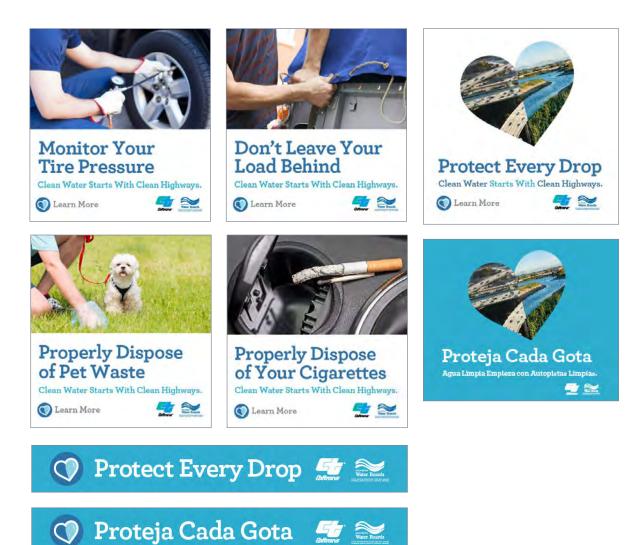


Alternate Messaging

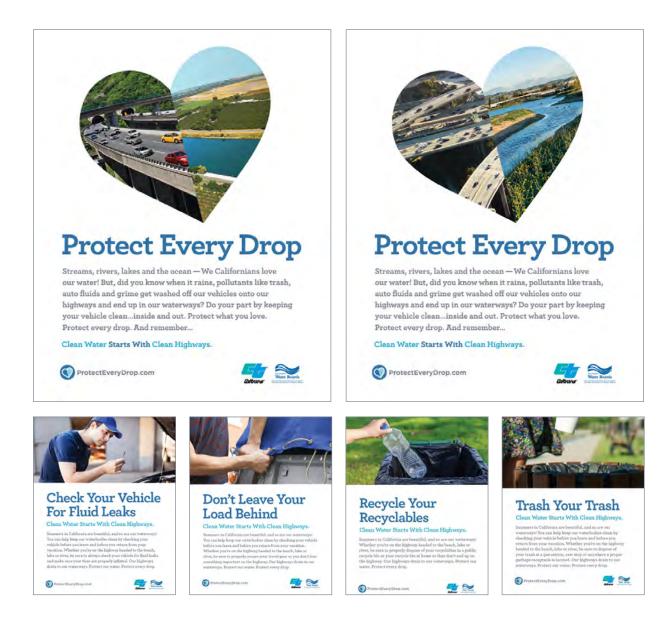




#### **Digital Banner Ads**

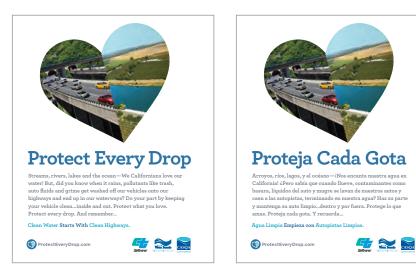


#### **Mall Backlit Signs**

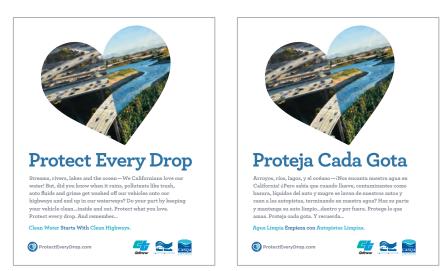


#### Posters

#### Northern California



#### Southern California



#### **Tip Flyer**

# Simple Ways

**To Reduce Stormwater Pollution** 

Streams, rivers, lakes and the ocean—Californians love their water! But, did you know when it rains, pollutants like trash, auto fluids and grime get washed off our vehicles onto our highways and end up in our waterways? Here's how you can help prevent pollution!

 $\bigcirc$ 

Properly inflated tires decrease wear, improve gas mileage and make your tires less susceptible to blowouts which all decrease pollution.

Maintain your vehicle to fix any leaks quickly to prevent auto fluids from dripping on the road. One vehicle dripping may not seem like much but thousands of vehicles dripping on our highways add up quickly!

# $\bigcirc$

Swing by a car wash facility to get the dirt, grime and other residue washed off your vehicle to prevent polluted runoff during a rainstorm.

Properly dispose of trash and recycling into a receptacle at the gas station or at home before they fly from a window or truck bed into a storm drain.



When hauling loads, make sure that items are properly secured with tarps and tie downs so items don't fly out of the bed of your truck.

Do your part by maintaining your vehicle and keeping it clean...inside and out. Protect our water. Protect Every Drop! And remember...

Clean Water Starts With Clean Highways.





Available Languages:

- English
- Spanish
- Chinese
- Hmong
- Russian
- Vietnamese
- Punjabi
- Korean

## **Behavior Focused Creative Elements**

Billboards



#### Mall Signs



#### Online Banner Ads





Don't Leave Your Load Behind Clean Water Starts With Clean Highways. (Clean More



Properly Dispose of Pet Waste Clean Water Starts With Clean Highways. © Learn More



Properly Dispose of Your Cigarettes Clean Water Starts With Clean Highwaya.

# **Add Your Logo**

This is a guide for how and where you can display your logo on creative.



Add Your Logo Here

Creative integrity must not be altered. However, the roadway/ highway image and the water body image in the heart can be customized to fit your area.

The tone of the copy must stay the same to maintain the Caltrans Protect Every Drop campaign brand integrity, but the specific words can be altered to fit the needs of your area and must be presented to Caltrans contract manager for approval.

Can alter with one of the pre-approved taglines or a tagline approved by Caltrans contract manager.



## V. Taglines

# **Tagline Options**

Having a campaign tagline that fits your area is important. Below are some pre-approved tagline options. **Any other custom tagline must be approved by Caltrans.** 

Clean Water Starts With Clean Highways Clean Water Starts With Clean Roadways Clean Water Starts With Clean Streets Clean Water Starts With a Clean City Clean Creeks Start With Clean Streets Clean Rivers Start with Clean Roads Clean Streams Start With Clean Streets

### **VI. Contact**

# **Contact Us**

For more information, or to request the use of these materials, please contact:

#### Ana Serrano

Protect Every Drop Program Contract Manager Senior Transportation Engineer Office of Stormwater Program Implementation Division of Environmental Analysis (916) 653-2351

Or

#### **Shelley Cousineau**

Protect Every Drop Project Manager Sagent (916) 359-8316





#### CALLEGUAS CREEK WATERSHED TMDL COMPLIANCE MONITORING PROGRAM

#### 10TH YEAR ANNUAL MONITORING REPORT JULY 2017 TO JUNE 2018

Monitoring and Reporting Program for the Nitrogen and Related Effects; Organochlorine Pesticides, Polychlorinated Biphenyls and Siltation; Toxicity; Salts; and Metals and Selenium Total Maximum Daily Loads

SUBMITTED TO LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

PREPARED BY



ON BEHALF OF THE

STAKEHOLDERS IMPLEMENTING TMDLS IN THE CALLEGUAS CREEK WATERSHED

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# **Appendices – Text Documents**

- Appendix A. Monitoring Event Summaries for Toxicity, OC Pesticides, Nutrients, Metals, and Salts TMDLs
- Appendix B. Salts Rating Curves and Surrogate Relationships
- Appendix C. Toxicity Testing and Toxicity Identification Evaluations Summary
- Appendix D. Laboratory QA/QC Results and Discussion
- Appendix E. Mugu Benthic Infauna Report

# **Attachments - Electronic Documents**

- Attachment 1. Toxicity Data
- Attachment 2. Monitoring Data
- Attachment 3. Salts Mean Daily Flows: July 2017-June 2018
- Attachment 4. Chain-of-Custody Forms

# Acronyms

Ag Waiver	Conditional Waiver for Irrigated Agricultural Lands
AMR	Annual Monitoring Report
AWQMP	Agriculture Water Quality Management Plan
BPAs	Basin Plan Amendments
BMP	Basin Fian Amendments Best Management Practice
Caltrans	California Department of Transportation
Califains	
	Calleguas Creek Watershed
CCWTMP	Calleguas Creek Watershed TMDL Compliance Monitoring Program
DNQ EC	Detected Not Quantified
	Electrical Conductivity Estimated
EST	
GSQC	General Sediment Quality Constituents
GWQC	General Water Quality Constituents
LA	Load Allocation
MOA	Memorandum of Agreement
MDL	Method Detection Limit
NA	Not Applicable
ND	Not Detected
NR	Not Required
NS	Not Sampled
OC	Organochlorine
OP	Organophosphorus
PCBs	Polychlorinated Biphenyls
POTWs	Publically-Owned Treatment Works
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RL	Reporting Limit
SOPs	Standard Operating Procedures
TDS	Total Dissolved Solids
TIE	Toxicity Identification Evaluation
TKN	Total Kjehdahl Nitrogen
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TSS	Total Suspended Solids
VCAILG	Ventura County Agricultural Irrigated Lands Group
WLA	Wasteload Allocation

# **Executive Summary**

The purpose of this annual report is to document the tenth-year monitoring efforts and results of the Calleguas Creek Watershed (CCW) Total Maximum Daily Load (TMDL) Compliance Monitoring Program (CCWTMP), conducted between July 2017 and June 2018. This annual report includes information for the sampling events completed per the current Quality Assurance Project Plan (QAPP), summaries of collected data, water quality data analysis, and TMDL waste load allocation (WLA)/load allocation (LA) compliance evaluation.

The Stakeholders Implementing TMDLs in the Calleguas Creek Watershed (Stakeholders) have been cooperatively working to implement the effective TMDLs in the CCW since 2007. Their cooperative efforts have resulted in effective implementation of the CCWTMP, successful development and completion of required special studies, implementation of actions outlined in the TMDLs, and initiation of planning of future actions towards upcoming TMDL compliance due dates. The combined result of the implementation actions taken thus far has been a significant improvement in the water quality in the watershed, as demonstrated by the monitoring results presented in this report. Successes include:

- Meeting final TMDL targets in the whole watershed for ammonia, nitrite, diazinon, zinc, all OC pesticides except chlordane, DDT compounds, and toxaphene.
- Meeting final TMDL targets in all reaches except for Revolon Slough for copper and nickel.
- Meeting final TMDL targets for fish tissue for mercury and bird eggs for selenium.
- Significant reduction in the number of samples with significant water and sediment toxicity and chlorpyrifos exceedances.
- Downward trends for chlordane, DDT compounds, and toxaphene in fish tissue.
- Investments in wastewater treatment plant upgrades, groundwater desalters, source control efforts, and non-structural best management practices.
- Well-attended on-going educational outreach programs offered by the stakeholders including recently offered EcoHero shows at schools, facilitating rain barrel sale events, support funding for Coastal Cleanup Day; numerous agricultural meetings related to management practices, monitoring results updates, Conditional Ag Waiver compliance requirements, nitrogen management plan certification, and many more.

While there is still some work to be done, the Stakeholders are committed to collaboratively working to continue the success they have achieved over the past ten years.

## TOTAL MAXIMUM DAILY LOADS

There are six TMDLs currently effective and being implemented in the CCW. 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)<sup>1</sup>
- 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 CCWTMP was established and a QAPP developed and approved by the Los Angeles Regional Water Quality Control Board (Regional Water Board) Executive Officer. Over time the original QAPP has been revised to incorporate newly adopted TMDLs, reflect changing field conditions, and include changes recommended in previous annual monitoring reports. The QAPP currently addresses monitoring requirements for the Nitrogen, OC Pesticides, Toxicity, Metals, and Salts TMDLs. The Trash TMDL is addressed through a separate Trash Monitoring and Reporting Plan and annual reports submitted separately to the Regional Water Board.

## 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 TMDLs 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 Ventura County 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 California Department of Transportation.

#### MONITORING EVENT SUMMARIES

Sampling events required by the Nitrogen, OC Pesticides, Toxicity, Metals, and Salts TMDLs during the tenth year of TMDL monitoring included four dry-weather events (Events 62, 63, 64, 67) and two wet weather events (Events 65 and 66). Grab samples for salts were obtained during

<sup>&</sup>lt;sup>1</sup> Information related to the Revolon Slough and Beardsley Wash Trash TMDL is not part of this report. The Trash TMDL annual report is submitted separately to the Regional Water Board by January 28<sup>th</sup>, annually.

these events but were not used directly to determine compliance at receiving water sites.<sup>2</sup> A summary of Events 62 through 67 is included in **Table ES-1**.

			Mugu Lagoon			Fr	shwater Sites	
Event	Туре	Date	Water Quality <sup>1</sup>	Sediment Quality & Toxicity <sup>2</sup>	Tissue <sup>2</sup>	Water Quality & Toxicity	Sediment Quality & Toxicity	Tissue
62	Dry	Aug 2017	Х	х	х	Х	Х	
63	Dry	Nov 2017	Х			Х		
64	Dry	Feb 2018	Х			Х		
65	Wet	Mar 2018	Х			Х		
66	Wet	Mar 2018	Х			Х		
67	Dry	May 2018	Х			Х		Х

Table ES-1. Summary of Year 10 Monitoring Events

1. Mugu Lagoon water quality testing is limited to monitoring site 01\_RR\_BR per CCWTMP QAPP Revision 3, submitted December 2014.

2. Mugu Lagoon sediment quality, sediment toxicity, and tissue samples are collected every three years. Samples were collected this year as part of Event 62.

#### **RECEIVING WATERS STATUS BY TMDL**

The CCW TMDLs were written so that compliance is evaluated on a reach basis (Nitrogen) or by subwatershed (OC Pesticides, Metals Toxicity, Salts), per receiving water compliance site data. The following table is provided as a way of looking at the various TMDLs and the status in attaining applicable load and wasteload allocations, with the goal of acknowledging where progress has been made and where additional focus is needed. Individual Stakeholders are working through their various permitting mechanisms with a focus on their individual compliance, however, this is a way to take a general view of the greater watershed and subwatersheds compared to progress expectations at this point in time.

The table expresses allocation achievement status in the following ways:

- ✓ Applicable allocation consistently met
- Applicable allocation typically exceeded
- Applicable allocation occasionally exceeded
- Load allocation met but wasteload allocation exceeded
   No applicable allocation for this subwatershed

<sup>&</sup>lt;sup>2</sup> Grab samples for salts at receiving water compliance sites are used to develop statistical relationships between specific conductivity (EC) and salt constituents, which are in turn used to convert high-density EC data from continuous monitors in the field to time series of salt concentrations.

		Subwatershed					
TMDL	Constituent	Mugu	Calleguas	Revolon	Las Posas	Arroyo Simi	Conejo
Final Allocations Effectiv	re in the second se						
Nitrogen	Ammonia-N	$\checkmark$	$\checkmark$	√	$\checkmark$	$\checkmark$	$\checkmark$
	Nitrate-N	•	•	0	$\checkmark$	$\checkmark$	$\checkmark$
	Nitrite-N	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
	Nitrate-N + Nitrite-N	•	•	0	•	$\checkmark$	$\checkmark$
Toxicity	Chlorpyrifos (dry)	٠	•	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
	Chlorpyrifos (storms)	$\checkmark$	$\checkmark$	0	$\checkmark$	$\checkmark$	$\checkmark$
	Diazinon (dry)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
	Diazinon (storms)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Interim Allocations Effect	tive						
OC Pesticides	4,4'-DDD (sediment)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
(Final date 2026)	4,4'-DDE (sediment)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
	4,4'-DDT (sediment)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
	Total Chlordane (sediment)	✓ 2	✓ <sup>2</sup>				
	Toxaphene (sediment)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Metals	Total Copper (storms and dry)	(1)	<b>√</b> 1	<b>√</b> 2	(1)	(1)	(1)
(Final date 2022)	Total Mercury (annual load)	(2)	✓ <sup>2</sup>	✓ <sup>2</sup>	(2)	(2)	(2)
	Total Nickel (dry)	(1)	<b>√</b> 1	<b>√</b> 2	(1)	(1)	(1)
	Total Selenium (dry)			0			
Salts	Total Dissolved Solids (dry)		$\checkmark$	*		✓	$\checkmark$
(Final date 2023)	Chloride (dry)		$\checkmark$	$\checkmark$		$\checkmark$	$\checkmark$
	Sulfate (dry)		$\checkmark$	*		$\checkmark$	$\checkmark$
	Boron (dry)			*		✓	

#### Table ES-2. TMDL Allocation Attainment Status by Subwatershed

Final TMDL targets are being attained in these reaches ahead of the TMDL schedule.
 Final TMDL targets are only occasionally exceeded in these reaches.

#### MONITORING PROGRAM CHANGES

The QAPP specifies that upon the completion of each CCWTMP annual report, revisions to standard procedures will be made, including: site relocation, ceasing monitoring efforts and/or deleting certain constituents from sample collection. An updated QAPP was submitted in December 2014 that incorporated the proposed revisions and recommendations included in the previous six CCWTMP annual reports. Additional modifications that reflect the most current lab methods and procedures for the field conditions were also part of the QAPP update process. Monitoring for the 2017-2018 monitoring year was conducted per the revised QAPP.

In August 2018, during the first monitoring event of year 11, construction activities were observed at the monitoring site 04D\_VENTURA. This is an urban land use site in the City of Camarillo. It was determined that a stretch of the stormwater channel is being enclosed directly up and downstream of the existing monitoring location. The site is being considered for relocation downstream, but still within the City's urban area. Once the site is selected, details will be provided to the Regional Water Board via separate submittal.

The Stakeholders will be submitting TMDL receiving water data to the California Environmental Data Exchange Network (CEDEN) going back to the beginning of the monitoring program in 2008. TMDL receiving water monitoring data will continue to be uploaded for future monitoring events, as well.

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# Introduction and Program Background

#### INTRODUCTION

In the Calleguas Creek Watershed (CCW), the following six total maximum daily loads (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)<sup>1</sup>
- 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 responsible parties that make up the Stakeholders Implementing TMDLs in the CCW (Stakeholders) established a CCW TMDL Compliance Monitoring Program (CCWTMP) and developed a Quality Assurance Project Plan (QAPP) for approval by the Los Angeles Regional Water Quality Control Board (Regional Water Board) Executive Officer. The original QAPP covered monitoring for only the Nitrogen, OC Pesticides, Toxicity, and Metals TMDLs. A monitoring approach (Salts Plan) for the Salts TMDL was submitted by the Stakeholders to the Regional Water Board in June 2009, which was conditionally approved in September 2011. Compliance monitoring for the Salts TMDL was required starting September 9, 2012.

Over time, the original QAPP has been revised to incorporate newly adopted TMDLs, reflect changing field conditions, and include changes recommended in previous annual monitoring reports. The QAPP currently addresses monitoring requirements for the Nitrogen, OC Pesticides, Toxicity, Metals, and Salts TMDLs. The Trash TMDL is addressed through a separate monitoring plan and annual monitoring report.

The primary purpose of this report is to document the tenth year monitoring efforts (July 2017 to June 2018) and results of the CCWTMP for the five TMDLs included in the QAPP. The report includes summaries of the sampling events, data summaries, and a comparison to applicable TMDL allocations and targets. The report is divided into the following sections:

- Introduction and Program Background
- Monitoring Program Structure

<sup>&</sup>lt;sup>1</sup> Information related to the Revolon Slough and Beardsley Wash Trash TMDL is not part of this report. The Trash TMDL annual report is submitted to the Regional Water Board annually by January 28<sup>th</sup>.

- Monitoring Data Summary
- Exceedance Evaluation and Discussion
- Revisions and Recommendations

In addition, there are several appendices included with this report and several attachments (electronic data files) associated with this report, including:

- Appendices (text documents)
  - Appendix A: Monitoring Event Summaries for Toxicity, OC Pesticides, Nutrients, Metals, and Salts TMDLs
  - Appendix B: Salts Rating Curves and Surrogate Relationships
  - o Appendix C: Toxicity Testing and Toxicity Identification Evaluations Summary
  - Appendix D: Laboratory Quality Assurance/Quality Control Results and Discussion
  - o Appendix E. Mugu Benthic Infauna Report
- Attachments (electronic data files)
  - o Attachment 1: Toxicity Data
  - o Attachment 2: Monitoring Data
  - o Attachment 3: Salts Mean Daily Flows: July 2017 to June 2018
  - Attachment 4: Chain-of-Custody Forms

## PROJECT ORGANIZATION

The CCWTMP is a coordinated effort where the various responsible parties identified in the TMDLs 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 five TMDLs included in the QAPP.

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 the Navy and the California Department of Transportation (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.

The Stakeholders contracted implementation of the CCWTMP with the following contractors to perform the tenth year monitoring effort:

- General Project Management Larry Walker Associates, Inc. (LWA)
- Field Monitoring Activities
  - **Freshwater Water Quality/Sediment Sampling** Kinnetic Laboratories, Inc. (KLI), Fugro West, Inc. (Fugro), LWA
  - Freshwater Fish Tissue ICF Jones and Stokes, Inc.
  - Mugu Fish Tissue and Sediment Sampling MBC Aquatic Sciences (MBC)
  - Bird Egg Collection Naval Base Ventura County environmental staff
- Water, Sediment, and Tissue Chemistry Analysis Physis Environmental Laboratories, Inc. (Physis)
- Salts Chemistry Analysis Fruit Growers Laboratory, Inc. (FGL) and Physis
- Toxicity Analysis Pacific Eco Risk Laboratories (PacEco)

The aforementioned contractors performed all the management activities and sampling efforts covered by this annual report. This list of contractors will be amended in each report to reflect contractors used for the work performed.

#### 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.

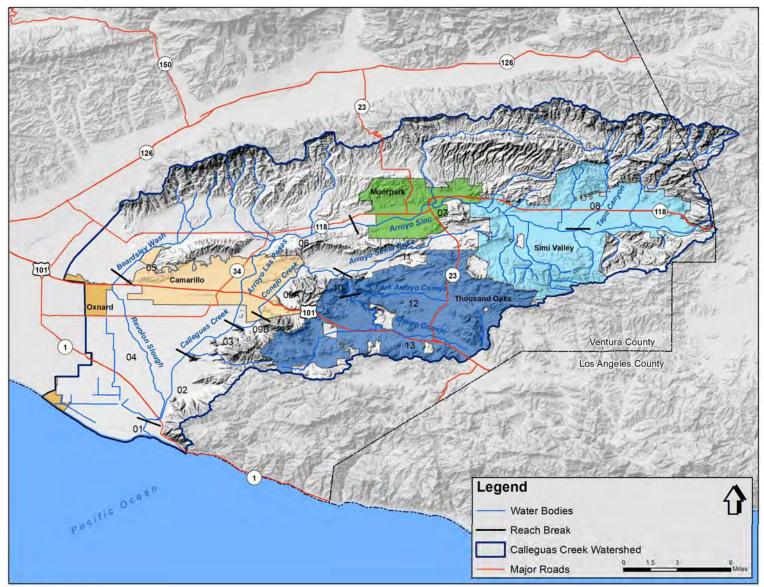


Figure 1. Calleguas Creek Watershed

Reach No.	Reach Name	Subwatershed	Geographic Description
1	Mugu Lagoon	Mugu	Lagoon fed by Calleguas Creek
2	Calleguas Creek (Estuary to Potrero Rd.)	Calleguas	Downstream (south) of Potrero Rd
3	Calleguas Creek (Potrero Rd. to Conejo Creek)	Calleguas	Potrero Rd. upstream to confluence with Conejo Creek
4	Revolon Slough	Revolon	Revolon Slough from confluence with Calleguas Creek to Central Ave
5	Beardsley Channel	Revolon	Revolon Slough upstream of Central Ave.
6	Arroyo Las Posas	Las Posas	Confluence with Calleguas Creek to Hitch Road
7	Arroyo Simi	Arroyo Simi	End of Arroyo Las Posas (Hitch Rd) to headwaters in Simi Valley.
8	Tapo Canyon Creek	Arroyo Simi	Confluence w/ Arroyo Simi up Tapo Canyon to headwaters
9B <sup>1</sup>	Conejo Creek (Camrosa Diversion to Arroyo Santa Rosa)	Conejo	Extends from the confluence with Arroyo Santa Rosa downstream to the Conejo Creek Diversion.
9A <sup>1</sup>	Conejo Creek (Calleguas Creek to Camrosa Diversion)	Conejo	Extends from Conejo Creek Diversion to confluence with Calleguas Creek.
10	Hill Canyon reach of Conejo Creek	Conejo	Confluence with Arroyo Santa Rosa to confluence with N. Fork; and N. Fork to just above Hill Canyon WTP
11	Arroyo Santa Rosa	Conejo	Confluence with Conejo Creek to headwaters
12	North Fork Conejo Creek	Conejo	Confluence with Conejo Creek to headwaters
13	Arroyo Conejo (South Fork Conejo Creek)	Conejo	Confluence with N. Fork to headwaters —two channels

Table 1.	Description	of Calleguas	Creek Watershed Reaches	
14010 11	Booonplion	or ounoguuo		

1. In the 2012 updates to the Los Angeles Region Basin Plan, the reach designations for 9A and 9B were switched.

#### **MONITORING QUESTIONS**

The purpose of the CCWTMP is to direct the monitoring activities conducted to meet the requirements of the TMDLs effective for the CCW, excluding the Trash TMDL. The goals of the CCWTMP include:

- To determine compliance with numeric targets, wasteload 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.

In addition, 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?

#### 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**

The following environmental monitoring elements are required by the TMDLs' 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.
- Salt compounds in water and continuous flow in dry weather (the latter only at Salts TMDL receiving water compliance sites)

**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 quality assurance/quality control (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)			
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)	Quarterly based on location + Two wet events		
Nutrients			
Ammonia Nitrogen, Nitrate Nitrogen, Nitrite Nitrogen, Organic Nitrogen, Total Kjehdahl Nitrogen (TKN), Total Phosphorus, Orthophosphate-P	Quarterly + Two wet events		
Organic Constituents In Water			
OC Pesticides <sup>1</sup> and PCBs <sup>2</sup> , OP <sup>3</sup> , Triazine <sup>4</sup> , and Pyrethroid <sup>5</sup> Pesticides	<ul> <li>Quarterly + Two wet events</li> </ul>		
Metals and Selenium In Water <sup>6</sup>	Quarterly + Two wet events <sup>7</sup>		
Copper, Mercury, Nickel, Zinc, and Selenium <sup>8</sup>			
Salts			
Electrical Conductivity (EC) and Discharge	Receiving water: Continuous (via in- situ sensors for EC and depth) plus monthly grabs for EC and discharge for sensor calibration		
Tatal Dissolved Solida (TDS) Sulfate Chlorida Peron	Receiving water: Continuous (derived from EC/salt relationships)		
Total Dissolved Solids (TDS), Sulfate, Chloride, Boron	Other sites: Quarterly + Two wet events		
Chronic Sediment Toxicity	Annually (Every three years in Lagoon)		
General Sediment Quality Constituents (GSQC)	Annually		
Total Ammonia, Percent Moisture, Grain Size Analysis, Total Organic Carbon (TOC)	(Every three years in Lagoon)		
Organic Constituents In Sediment	Annually		
OC Pesticides <sup>1</sup> and PCBs <sup>2</sup> , OP Pesticides <sup>3</sup> , and Pyrethroids <sup>5</sup>	(Every three years in Lagoon)		

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

Constituent	Frequency
Additional Constituents For Mugu Lagoon Sediment	Every three years
Metals <sup>9</sup>	
Tissue	Annually
Percent Lipids, OC Pesticides <sup>1</sup> and PCBs <sup>10</sup> , OP Pesticides <sup>3</sup> , and I	(Every three years in Lagoon)
<ol> <li>OC Pesticides considered: aldrin, alpha-BHC, beta-BHC, gamma-BHC (lindan gamma, 2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin endrin aldehyde, endrin ketone, and toxaphene</li> </ol>	
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 tissue, as it is the only OP listed in tissue.	is the only OP pesticide that will be measured in
4. Triazine Pesticides considered: atrazine, prometryn, and simazine. Analysis or recommendation being included in the Revisions and Recommendations section	<b>U</b> , <b>U</b>
5. Pyrethroid Pesticides considered: bifenthrin, cyfluthrin, cypermethrin, deltamet	thrin, and permethrin
6 Copper mercury nickel selenium and zinc will be measured as dissolved and	total recoverable

- Copper, mercury, nickel, selenium and zinc will be measured as dissolved and total recoverable. 6.
- 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.
- Monitoring at sites in Mugu Lagoon other than at the Ronald Reagan Street Bridge Site (01 RR BR) for metals is an optional 8. element
- 9. 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.
- 10. PCBs in tissue considered: individual congers.
- 11. Total mercury and selenium will be measured in bird eggs and methyl mercury and total selenium will be measured in fish tissue.

#### **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.

Table 3 lists the constituents and analyses that are considered optional for the CCWTMP. Monitoring for the constituents and conducting the analyses are not BPA requirements but can provide supplemental data to meet general program goals and answer program questions. Table **3** also provides a general sampling frequency for each constituent group.

Constituent	Frequency⁵
Organic Constituents in Water – Grain Size Fractions <sup>1</sup>	One wet event annually
OC Pesticides and PCBs, OP, and Pyrethroid Pesticides	••••• •••••••••••••••••••••••••••
Organic Constituents in Sediment – Grain Size Fractions <sup>1</sup>	Annually (Every three
OC Pesticides and PCBs, OP, and Pyrethroid Pesticides	years in Mugu Lagoon)
Additional Constituents for Mugu Lagoon Sediment	
Macrobenthic community assessment	Every three years <sup>2</sup>
Sediment Toxicity – Eohaustorius estuaries and Mytilus galloprovincialis	, ,
PCBs <sup>3</sup> and PAHs <sup>4</sup>	
<ol> <li>Please see Table 2 for a list of individual constituents in each suite.</li> <li>Mugu Lagoon assessments were conducted during the first, fourth, seventh, and tenth</li> <li>PCBs considered: 2,4'-Dichlorobiphenyl, 2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5'-Pentachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,5'-Pentachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,4',5'-Pentachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,2',4,4',5'-Pentachlorobiphenyl, 2,3',4,4'-Tetrachlorobiphenyl, 2,3',4,4'-Tetrach</li></ol>	enyl, 2,2',3,5'-Tetrachlorobiphenyl, enyl, 2,3,3',4,4-Pentachlorobiphenyl,

2,3',4,4',5-Pentachlorobiphenyl, 2,2',3,3',4,4'-Hexachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, 2,2',4,4',5,5'-Hexachlorobiphenyl, 2,2',3,3',4,4',5-Heptachlorobiphenyl, 2,2',3,4,4',5,5'-Heptachlorobiphenyl, 2,2',3,4',5,5',6-Heptachlorobiphenyl, 2,2',3,3',4,4',5,6-Octachlorobiphenyl, 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl, Decachlorobiphenyl

 PAHs considered: 1-Methylnaphthalene, 1-Methylphenanthrene, 2,6-Dimethylnaphthalene, 2-Methylnaphthalene, Acenaphthene, Anthracene, Biphenyl, Fluorene, Naphthalene, Phenanthrene, Benz(a)anthracene, Benzo(a)pyrene, Benzo(e)pyrene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Perylene, Pyrene.

5. Optional monitoring related to grain size fractions was not performed during the 10<sup>th</sup> monitoring year. Additional Mugu Lagoon Sediment monitoring was completed.

#### **Special Studies**

The Nitrogen, Toxicity, OC Pesticides, Salts, and Metals TMDL Implementation Plans identify required and optional special studies to investigate a range of issues. No specific special study 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. Data gathered during special study specific sampling may also be utilized to further answer not only the special study questions, but also be applied to the overall CCWTMP goals and questions identified previously in this report.

# 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: (1) compliance monitoring and (2) 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: (1) dry weather monitoring and (2) wet weather storm water monitoring. The following sections describe, in detail, the basis for each monitoring effort, starting with the definitions of the compliance monitoring sites 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 sampling frequency and the constituents analyzed at the sites covered by the CCWTMP vary. 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 (MDL) and reporting limit (RL) requirements.

## **COMPLIANCE MONITORING**

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

For compliance monitoring to address the Toxicity, OC Pesticides, Metals 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, metals, and nutrients. The specific target constituents for each of the previously mentioned TMDLs are listed as footnotes in **Table 2**.

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 and **Appendix C**.

In-stream water column grab samples for salts were also collected quarterly during dry weather and twice during wet weather at the base of each of the subwatersheds specified in the Salts TMDL. The grab sample results are used to develop statistical relationships between salt constituents and EC. These relationships are used to convert high frequency EC-sensor data to time-series of salt concentrations. Compliance with interim dry weather salt allocations is determined using monthly mean salt concentrations for dry weather developed from the timeseries of data. Additionally, POTW effluent was monitored for compliance with the effluent limits presented in the Toxicity, OC Pesticides, Metals, and Salts TMDL BPAs. Currently, POTWs collect data required by each of their individual permits. For additional TMDL constituents not currently sampled by the plants, CCWTMP crews perform sampling as necessary (efforts vary by plant and constituent group). All CCWTMP-required data for POTWs are compiled in this report.

All efforts are made to include two wet weather water sampling events for compliance monitoring for the OC Pesticides, Toxicity, Metals, and Salts TMDLs during targeted storm events between October and April. Two wet weather events were completed in year ten, the first storm sampled on March 11, 2018 and the second on March 22, 2018.

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 collected every three years per the approved QAPP, and were collected during year ten.

Similar to the sediment sampling frequency, fish tissue samples were collected in the freshwater portions of the watershed during year ten in May 2018, and will continue to be collected annually for the CCWTMP. In addition, fish tissue was collected in Mugu Lagoon during year ten in August 2017 and the data are presented in this report.

## **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 investigation 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

As significant mortality had not occurred at the two sediment toxicity investigation sites during the first three years of the CCWTMP, ceasing investigation monitoring was recommended in the third year annual report. Toxicity testing at the investigation sites ceased until Event 38, when it was resumed to support delisting of the identified reaches. The normal annual sampling frequency for this investigation is provided in **Table 6**.

Sediment toxicity investigation monitoring for delisting occurred during Event 62. Water column toxicity sampling occurred during all events. As part of the optional toxicity investigation, samples are also tested for those constituents specified in **Table 2** for the OC Pesticides TMDL and the Toxicity TMDL, as well as the general water quality parameters.

#### SAMPLING SITES

The QAPP details the justification and rationale for each of the sites sampled via the CCWTMP. Information on compliance monitoring sites and land use sites sample collection frequency is presented in **Table 4** and **Table 5**, respectively. 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 sites in each figure are designated by sampled constituent group. The compliance monitoring sampling zones for sediment sampling and tissue sampling in Mugu Lagoon are shown in **Figure 6** and **Figure 7**, respectively.

The non-Mugu Lagoon 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 6**, while the general locations of the water and sediment toxicity investigation sampling sites in the CCW are presented in **Figure 8**. Land use monitoring sites are shown in **Figure 9**.

The salt monitoring sites correspond with compliance sites or land use sites used 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).
- 2. The continuous monitoring equipment (and the location of monthly salt grab samples) for the Simi subwatershed was installed just downstream of the Tierra Rejada bridge, and is referred to as "07\_TIERRA".

The CCWTMP efforts summarized 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.

Sub-	011 11			GPS Coordinates			Water <sup>1, 2</sup>				Sediment			Tissue <sup>3</sup>		
Wat.	Site Id	Reach	Site Location	Lat	Long	Тох	Pests/ PCBs	Nut	Metal	Salts	GWQC	Тох	Pests /PCBs	Metal	Pests/ PCBs	Metal 4
	01_RR_BR	1	Ronald Reagan St Bridge	34.1090	-119.0916	6	6	6	6	NA	6	NA	NA	NA	NA	NA
	01_BPT_3	1	Located In Eastern Arm	_		NA	NA	NA	NA	NA	NA					
	01_BPT_6	1	Located In Eastern Part Of Western Arm	_		NA	NA	NA	NA	NA	NA					
Mugu Lagoon Revolon Slough	01_BPT_14	1	Located In The Central Part Of The Western Arm	General site locations are provided as each		NA	NA	NA	NA	NA	NA	On	ce Every <sup>-</sup> Years	Three		
	01_BPT_15	1	Located Between Estuary and Mouth of Lagoon	generaliz	resents a red sample	NA	NA	NA	NA	NA	NA		T Cal 3			
	01_SG_74	1	Located In Western Part of Central Lagoon	which a s	on zone in sample will	NA	NA	NA	NA	NA	NA					
	Central Lagoon	1	Sampled In Central Lagoon	be co	llected.	NA	NA	NA	NA	NA	NA				Once	Every
	Western Arm	1	Sampled In Western Arm Of The Lagoon	N		NA	NA	NA	NA	NA	NA				Three Years	
Revolon	04_WOOD 5	4	Revolon Slough East Side Of Wood Road	34.1698	-119.0958	6	6	6	6	6	6	1	1	NA	1	1
Slough	05_CENTR	5	Beardsley Wash at Central Avenue	34.2300	-119.1128	NA	NA	6	NA	NA	6	NA	NA	NA	NA	NA
	02_PCH	2	Calleguas Creek NE Side of Hwy 1 Bridge	34.1119	-119.0818	NA	NA	4	NA	NA	4	NA	NA	NA	NA	NA
	03_UNIV	3	Calleguas Creek At Camarillo Street	34.1795	-119.0399	6	6	6	6	6	6	1	1	NA	1	NA
Calleguas	03D_CAMR <sup>6</sup>	3	Camrosa Water Reclamation Plant	34.1679	-119.0530	4	4	4	4	4	4	NA	NA	NA	NA	NA
Revolon Slough Calleguas	9A_HOWAR 7	9B 7	Conejo Creek At Howard Road Bridge	34.1931	-119.0025	NA	NA	6	NA	6	NA	NA	NA	NA	NA	NA
	9AD_CAMA 7	9B 7	Camarillo Water Reclamation Plant	34.1938	-119.0017	4	4	4	4	4	4	NA	NA	NA	NA	NA
Conejo	9B_ADOLF 7	9A 7	Conejo Creek At Adolfo Road	34.2137	-118.9894	6	6	6	NA	NA	6	NA	1	NA	1	NA
Conejo	10_GATE	10	Conejo Creek Hill Canyon Below N Fork	34.2178	-118.9281	NA	NA	6	NA	NA	6	NA	NA	NA	NA	NA

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

Sub-			Site Location	GPS Co	ordinates		Water 1, 2				Sediment			Tissue <sup>3</sup>		
Wat.	Site Id	Reach		Lat	Long	Тох	Pests/ PCBs	Nut	Metal	Salts	GWQC	Тох	Pests /PCBs	Metal	Pests/ PCBs	Metal 4
	10D_HILL	10	Hill Canyon Wastewater Treatment Plant	34.2113	-118.9218	4	4	4	4	4	4	NA	NA	NA	NA	NA
	12_PARK	12	Conejo Creek North Fork above Hill Canyon	34.2144	-118.915	NA	NA	4	NA	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	NA	4	NA	NA	NA	NA	NA
	9B_BARON 7	9A 7	Conejo Creek at Baron Brothers Nursery	34.2365	-118.9643	NA	NA	NA	NA	6	NA	NA	NA	NA	NA	NA
Las	06_UPLAND <sup>8</sup>	6	Arroyo Las Posas upstream of Upland Road	34.2449	-118.0051	6	6	6	NA	NA	6	NA	1	NA	1	NA
Posas	06D_MOOR 6	6	Ventura County Wastewater Treatment Plant	34.2697	-118.9357	4	4	4	4	4	4	NA	NA	NA	NA	NA
	07_HITCH	7	Arroyo Simi East Of Hitch Boulevard	34.2716	-118.9234	6	6	6	NA	NA	6	NA	1	NA	1	NA
Arroyo Simi	07_TIERRA	7	Arroyo Simi downstream from Tierra Rejada Blvd.	34.2701	-118.9058	NA	NA	NA	NA	6	NA	NA	NA	NA	NA	NA
	07D_SIMI	7	Simi Valley Water Quality Control Plant	34.2848	-118.8128	4	4	4	4	4	4	NA	NA	NA	NA	NA

NA – Not Analyzed

Tox – Samples will be analyzed for toxicity and OP 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 on the 303(d) list for this reach. Nut – Samples will be analyzed for Nutrients as listed in Table 2.

Metal – Samples will be analyzed for Metals as listed in Table 2.

GWQC – Samples will be analyzed for General Water Quality Constituents as listed in Table 2.

1. Sites listed for 6 sampling events per monitoring year refers to 4 quarterly dry events and the attempt to sample 2 additional wet events.

2. Grab samples for salts at compliance sites are not directly used to determine compliance with salts WQOs, but are used to develop statistical relationships between EC and salt constituents (Appendix B).

3. 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.

4. Bird egg samples will be collected and analyzed for mercury and selenium in the Mugu Lagoon subwatershed.

5. TIEs will not be performed at 04\_WOOD.

6. The Camrosa Water Reclamation Plant and the Ventura County Wastewater Treatment Plant are not currently discharging. However, these sites are included in case they must be sampled at a later date.

7. In the 2012 updates to the Los Angeles Region Basin Plan, the reach designations for 9A and 9B were switched. For consistency with the TMDLs and historic site naming conventions, the site names in the annual monitoring reports maintain the original reach designations.

8. In Year 8, sampling crews were not able to access the 06\_SOMIS site for the majority of the year. The 06\_UPLAND site, which is approximately one mile downstream, was chosen to replace the 06\_SOMIS site.

Sub-Wat.	Site ID	Reach	Site	NITO L OCATION	GPS C	oordinates	Pests/	Nutrients	Metal	Salts	GWQC
Jub-wat.	Site ib	Reach	Type <sup>1</sup>		Lat	Long	PCBs				
Mugu Lagoon	01T_ODD2_DCH	1	Ag	Duck Pond/Mugu/Oxnard Drain #2 S. of Hueneme Rd	34.1395	-119.1185	6	6	6	NA	6
Revolon Slough	04D_WOOD	4	Ag	Agricultural Drain on E. Side of Wood Rd N. of Revolon	34.1708	-119.0963	6	6	6	6	6
	05D_SANT_ VCWPD	5	Ag	Santa Clara Drain at VCWPD Gage 781 prior to confluence with Beardsley Channel	34.2426	-119.1137	6	6	6	NA	6
	04D_VENTURA	4	Urban	Camarilo Hills Drain at Ventura Blvd and Las Posas Rd at VCWPD Gage 835	34.2162	-119.0685	6	NA	6	6	6
Calleguas	02D_BROOM	2	Ag	Discharge to Calleguas Creek at Broome Ranch Rd.	34.1433	-119.0713	6	6	6	NA	6
	9BD_GERRY <sup>2</sup>	<b>9A</b> <sup>2</sup>	Ag	Drainage ditch crossing Santa Rosa Rd at Gerry Rd	34.2358	-118.9446	6	6	6	6	6
Conejo	9BD_ADOLF <sup>2</sup>	<b>9A</b> <sup>2</sup>	Urban	Urban storm drain passing under N. side of Adolfo Rd approximately 300 meters from Reach 9B	34.2148	-118.9951	6	NA	6	6	6
	13_SB_HILL	13	Urban	South Branch Arroyo Conejo on S. Side of W Hillcrest	34.1849	-118.9075	6	NA	NA	6	6
Las Posas	06T_FC_BR	6	Ag	Fox Canyon at Bradley Rd - just north of Hwy 118	34.2646	-119.0111	6	6	NA	NA	6
Arroyo Simi	07D_HITCH_ LEVEE_2	7	Ag	2 <sup>nd</sup> corrugated pipe discharging on north side of Arroyo Simi flood control levee off of Hitch Blvd just beyond 1 <sup>st</sup> power pole.	34.2716	-118.9219	6	6	NA	6	6
	07D_MPK 3	7	Urban	Gabbert Canyon Drain, N. side of 118	34.2790	-118.9056	6	NA	NA	6	6
	07D_SIM_BUS 4	7	Urban	Bus Canyon Dr N. of 5 <sup>th</sup> St and LA Ave intersection	34.2719	-118.7837	6	NA	NA	NA	6

#### Table 5. CCWTMP Land Use Monitoring Sites and Sample Frequency

Ag = Agricultural Land Use Site Urban = Urban Land Use Site

NA - Not Analyzed

1. Specific constituents analyzed under each category are listed in Table 2.

In the 2012 updates to the Los Angeles Region Basin Plan, the reach designations for 9A and 9B were switched. For consistency with the TMDLs and historic site naming conventions, the site names in the annual monitoring reports maintain the original reach designations.

Site 07D\_MPK replaced 07D\_CTP to correspond with the Moorpark MS4 outfall sampling location.
 Site 07D\_SIM\_BUS replaced 07T\_DC\_H to correspond with the Simi Valley MS4 outfall sampling location.

Subwatershed	Site ID	Reach	Site Location	Lat	Long	Тох	Pests/PCBs	GWQC
Sediment Toxic	ty Investigation	1						
Callerway	02_PCH	2	Calleguas Creek Northeast Side Of Highway 1 Bridge	34.1119	-119.0818	1	1	1
Calleguas	9A_HOWAR <sup>2</sup>	9B <sup>2</sup>	Conejo Creek At Howard Road Bridge	34.1931	-119.0025	1	1	1
Water Toxicity	Investigation <sup>1, 3</sup>							
Concio	10_GATE	10	Conejo Creek Hill Canyon Below North Fork Of Conejo Creek	34.2178	-118.9281	6	6	6
Conejo	13_BELT	13	Conejo Creek South Fork Behind Hill Canyon Belt Press Building	34.2078	-118.9194	6	6	6

#### Table 6. Toxicity Investigation Monitoring Sites and Sampling Frequency

Tox – Samples will be analyzed for toxicity, OP, 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.

GWQC - Samples will be analyzed for General Water Quality Constituents as listed in Table 2.

1. This table depicts the normal toxicity investigation sampling frequency. During year 5, this investigation was put on hold and then re-started as described in text.

2. In the 2012 updates to the Los Angeles Region Basin Plan, the reach designations for 9A and 9B were switched. For consistency with the TMDLs and historic site naming conventions, the site names in the annual monitoring reports maintain the original reach designations.

3. Includes two wet events per site; except during years when there is insufficient rainfall to trigger sampling.

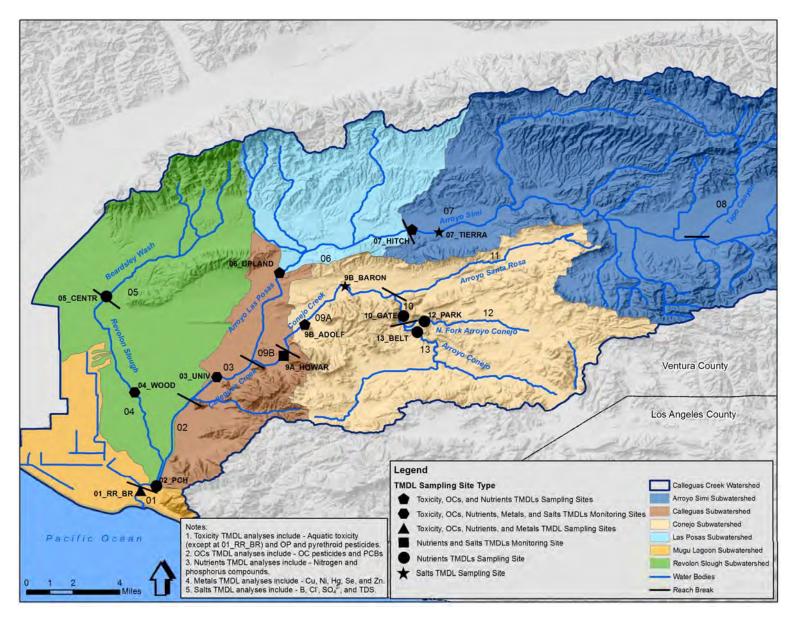


Figure 2. CCWTMP Compliance Monitoring Sampling Sites – Receiving Water

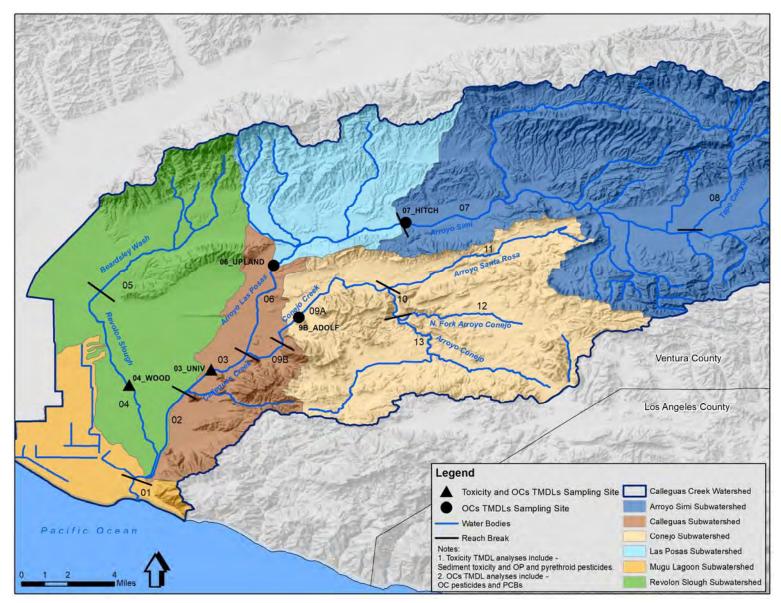


Figure 3. CCWMTP Compliance Monitoring Receiving Water Sampling Sites – Freshwater Sediment

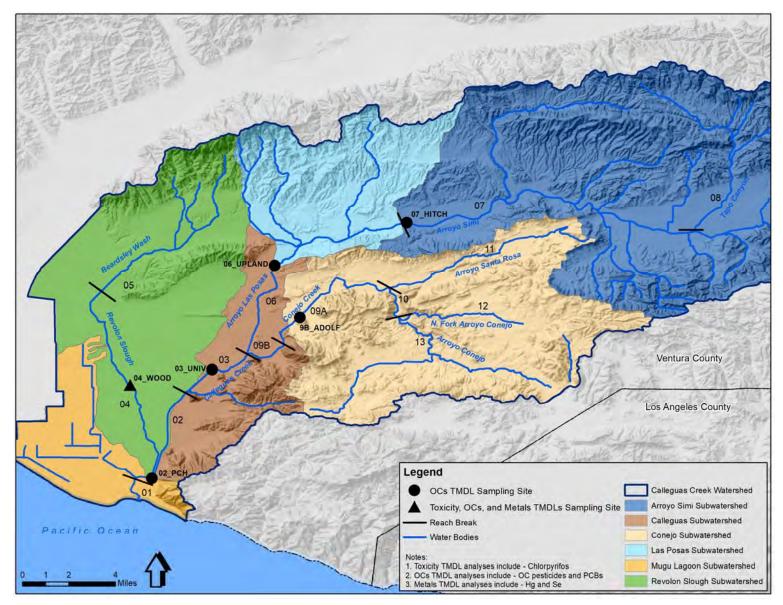


Figure 4. CCWMTP Compliance Monitoring Sampling Sites – Freshwater Fish Tissue

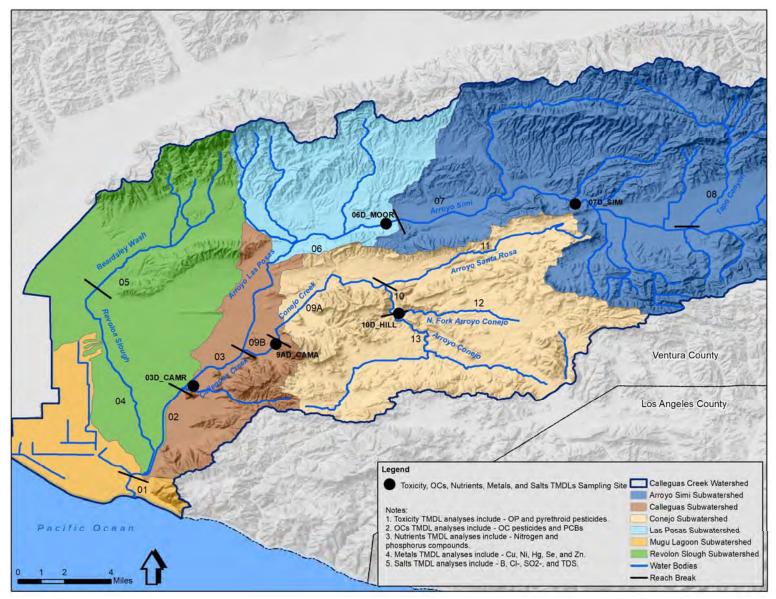
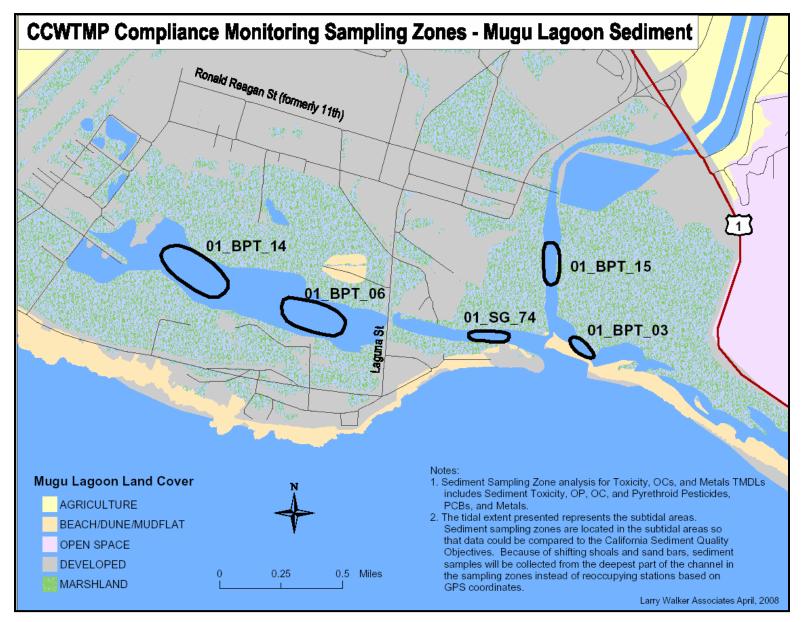


Figure 5. CCWMTP Compliance Monitoring Sampling Sites – POTW Effluent





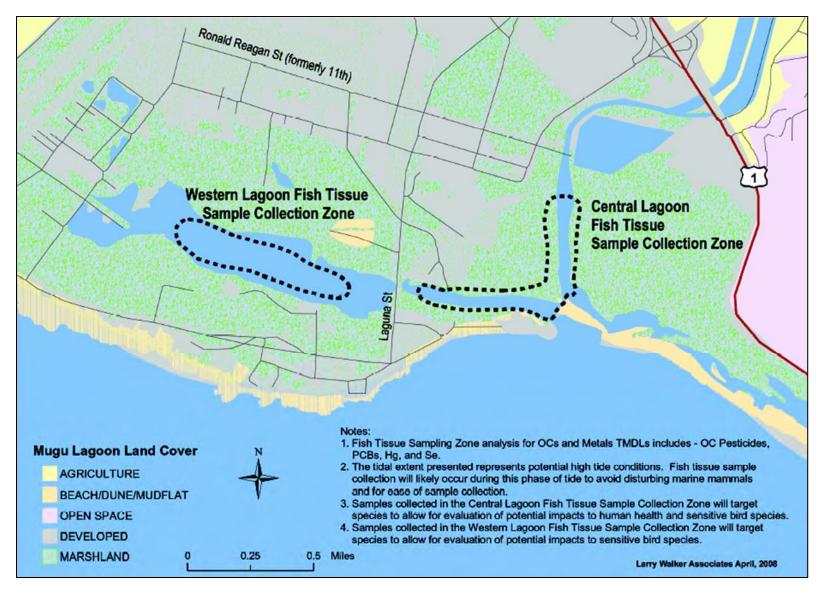


Figure 7. CCWTMP Compliance Monitoring Sampling Zones – Mugu Lagoon Tissue

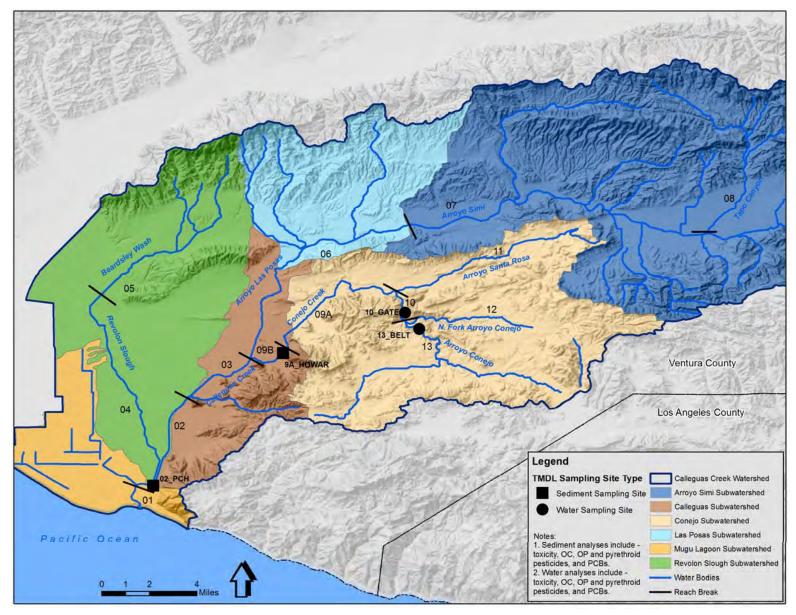


Figure 8. CCWTMP Toxicity Investigation Receiving Water Sampling Sites – Water and Sediment

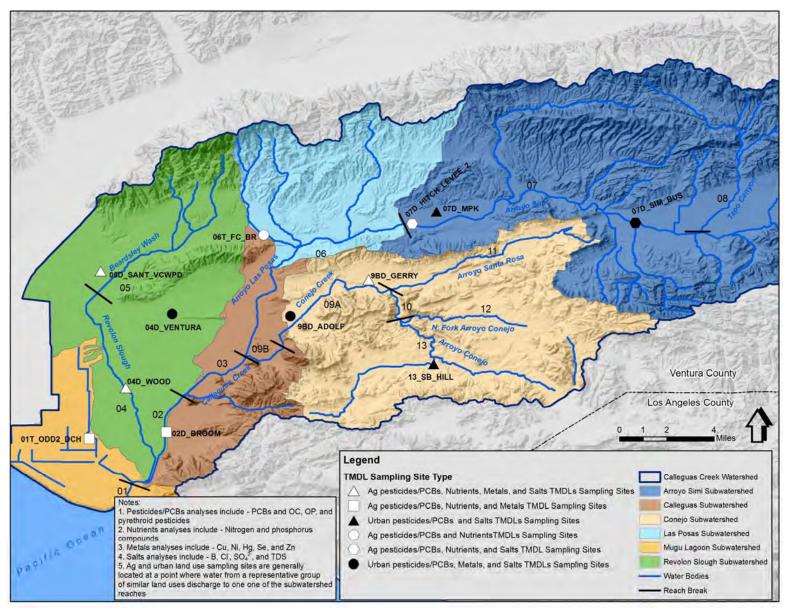


Figure 9. CCWTMP Land Use Sampling Sites

# **Monitoring Data Summary**

To summarize the CCW TMDL monitoring data, box plots have been created for site and constituent combinations representing the data gathered over the entire monitoring program. The data presented includes all constituents with TMDL limits for water or sediment at the sites where the constituents were analyzed. Where TMDL limits are effective, those thresholds have been identified for the sites where they apply. As appropriate, data for constituents with specific dry or wet weather limits are presented separately. Data collected during year ten, which is the reporting period for this document, have been overlain on the box plots as circles. The box plots include all of the data collected during this program (2008-2018). This was done to allow for easy comparison between recent data and what have been collected overall. The tenth year data are presented in tabular form below each box plot. Each figure of box plots presents data from either receiving water sites or land use sites. The receiving water sites are color coded by subwatershed as shown in **Table 7**. Land use and POTW sites are displayed together and grouped by type as presented in **Table 8**.

Fish tissue data are not displayed as box plots. Fish tissue data are presented in tables due to the variable number of samples per site each monitoring year and to preserve the species information associated with each sample.

Toxicity data and TIE results are summarized in **Appendix C**. Summaries for each of the 2017-2018 monitoring events are included as **Appendix A**.

Some TMDL constituents were never, or are rarely detected and therefore, did not warrant a data summary. The constituents, which were never detected, include:

#### In Water: In Sediment:

- Endosulfan II Endrin
- Endrin BHC, gamma

Rarely detected constituents in water are as follows:

- Aldrin (four detects, none this year)
- Dieldrin (eight detects, none this year)
- Endosulfan I (three detects, none this year)
- BHC, gamma (three detects, none this year)
- Total PCBs (five detects, none this year)

Rarely detected constituents in sediment are as follows:

• Dieldrin (one detect, none this year)

Subwatershed	Reach	Site ID
Mugu Lagoon	Reach 1	01_BPT_14
		01_BPT_15
		01_BPT_3
		01_BPT_6
		01_RR_BR
		01_SG_74
Calleguas	Reach 2	02_PCH
	Reach 3	03_UNIV
	Reach 9B <sup>1</sup>	9A_HOWAR
Revolon Slough	Reach 4	04_WOOD
	Reach 5	05_CENTR
Las Posas	Reach 6 <sup>2</sup>	06_UPLAND
Arroyo Simi	Reach 7	07_HITCH
		07_TIERRA
Conejo	Reach 9A <sup>1</sup>	9B_ADOLF
	Reach 9A <sup>1</sup>	9B_BARON
	Reach 10	10_GATE
	Reach 12	12_PARK
	Reach 13	13_BELT

#### Table 7. Receiving Water Sites Color Coded by Subwatershed

1. In the 2012 updates to the Los Angeles Region Basin Plan, the reach designations for 9A and 9B were switched. For consistency with the TMDLs and historic site naming conventions, the site names in the annual monitoring reports maintain the original reach designations.

In Year 8, sampling crews were denied access to the 06\_SOMIS site for four out of six sampling events. The site has been moved approximately one mile downstream to the 06\_UPLAND site where crews can access the receiving water without needing private landowner permissions.

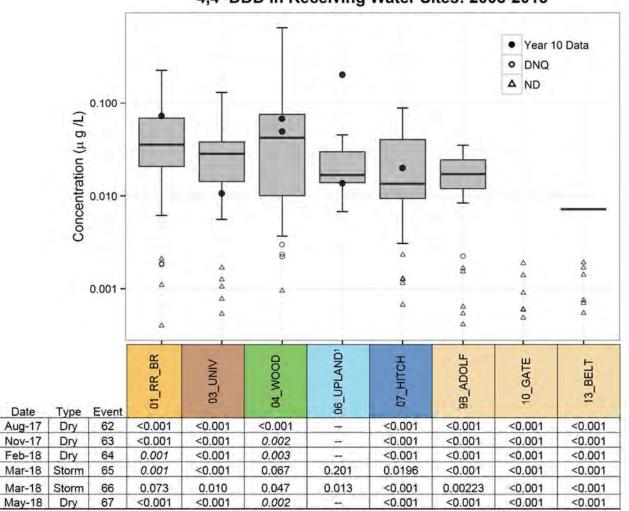
Urban Land Use (MS4) Sites:		
Reach 4	04D_VENTURA	
Reach 7 <sup>1</sup>	07D_MPK <sup>1</sup>	
Reach 7 <sup>1</sup>	07D_SIM_BUS <sup>1</sup>	
Reach 9A <sup>2</sup>	9BD_ADOLF <sup>2</sup>	
Reach 13	13_SB_HILL	
Ag Land Use Sites:		
Reach 1	01T_ODD2_DCH	
Reach 2	02D_BROOM	
Reach 4	04D_WOOD	
Reach 5	05D_SANT_VCWPD	
Reach 6	06T_FC_BR	
Reach 7	07D_HITCH_LEVEE_2	
Reach 9A <sup>2</sup>	9BD_GERRY <sup>2</sup>	
POTW Sites:		
Reach 7	07D_SIMI	
Reach 9B <sup>2</sup>	9AD_CAMA <sup>2</sup>	
Reach 10	10D_HILL	

In the 2014 updates to the QAPP, the 07D MPK replaced the 07D CTP site to be consistent with the Moorpark MS4 1. monitoring site and the 07D\_SIM\_BUS site replaced the 07T\_DC\_H site to be consistent with the Simi Valley MS4 monitoring site. Past data from the original sites can be found in previous Annual Monitoring Reports, only current site data is provided in

the following plots. In the 2012 updates to the Los Angeles Region Basin Plan, the reach designations for 9A and 9B were switched. For 2. consistency with the TMDLs and historic site naming conventions, the site names in the annual monitoring reports maintain the original reach designations.

### OC PESTICIDES TMDL DATA SUMMARY

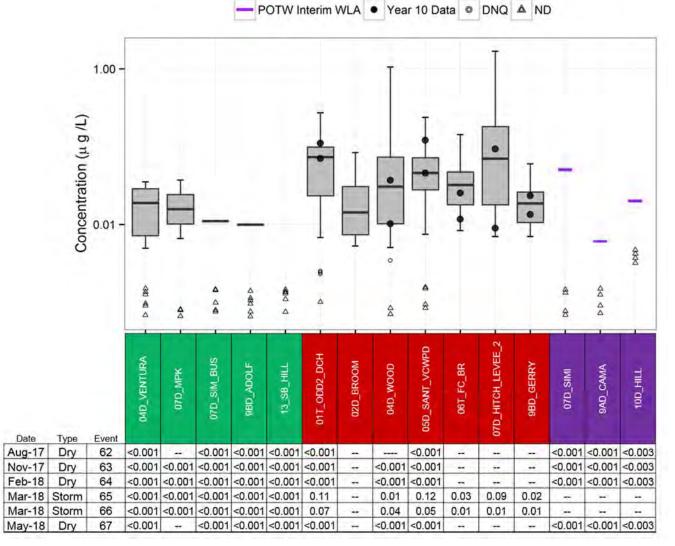
The following figures present OC pesticides data in both water and sediment. Presently, only the POTWs have effective final limits in water, but data for all sites is provided since the TMDL specifies final targets for OC pesticides in water. Effective interim allocations for agriculture and waste load allocations for urban dischargers are provided in the appropriate OC pesticides in sediment figures. Data collected during year ten, which is the reporting period for this document, have been overlain on the box plots as circles. The box plots include all of the data collected during this program (2008-2018). This was done to allow for easy comparison between recent data and what have been collected overall. The tenth year data are presented in tabular form below each box plot. Bolded values in the tables within each figure indicate the concentration was detected but not quantifiable (DNQ); values in the tables within each figure with a "<" preceding it, indicate the constituent was not detected (ND) at MDL for that constituent; values identified as "--" in the tables indicate no samples were collected at those sites for those events.



4,4'-DDD in Receiving Water Sites: 2008-2018

1. Access to 06\_SOMIS was revoked during Year 8 and was replaced by 06\_UPLAND in Year 9. All collected data prior to event 56 were obtained from 06\_SOMIS. This footnote applies to all boxplots with 06\_UPLAND.

Figure 10. 4,4'-DDD Water Column Concentrations in Receiving Water Sites: 2008-2018



#### 4,4'-DDD in Water from Urban, Ag, & POTW Sites: 2008-2018

Figure 11. 4,4'-DDD Water Column Concentrations in Urban, Ag, and POTW Sites: 2008-2018

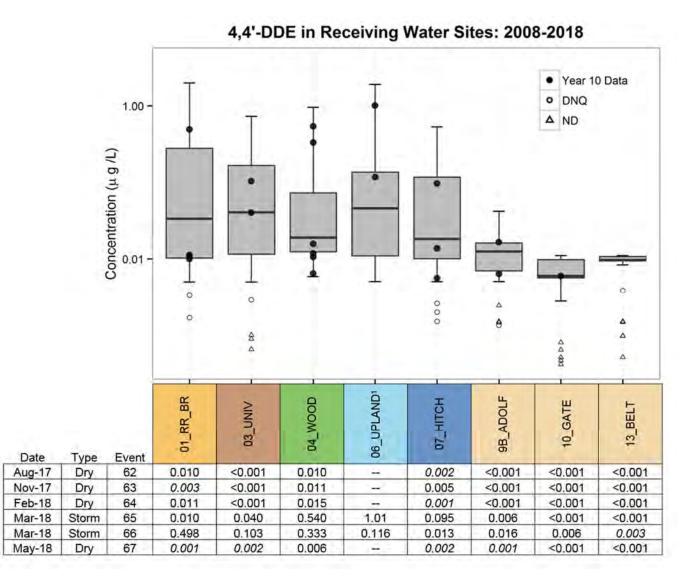
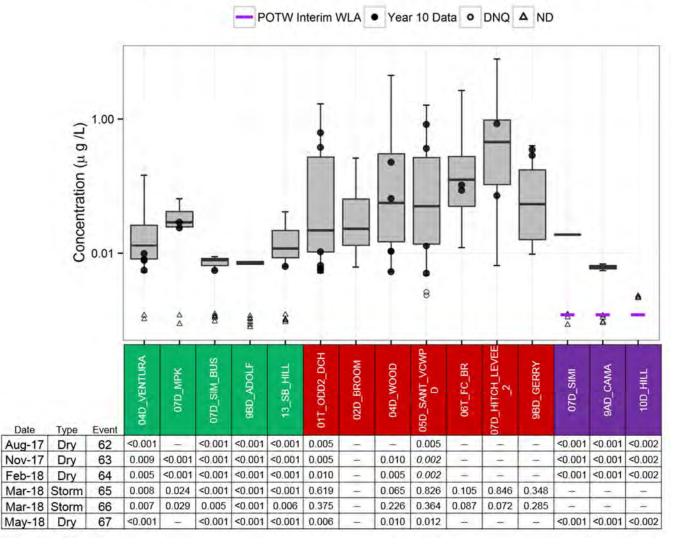
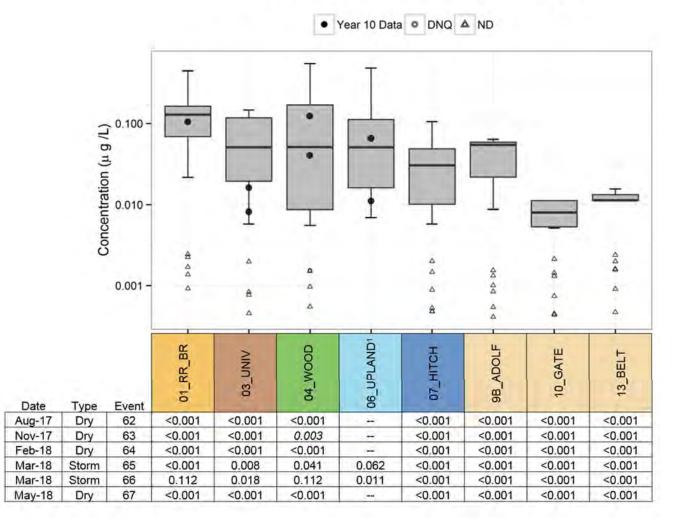


Figure 12. 4,4'-DDE Water Column Concentrations in Receiving Water Sites: 2008-2018



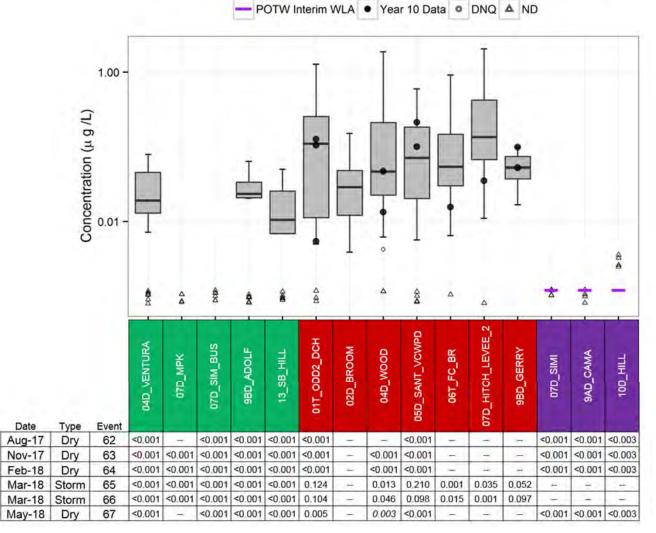
## 4,4'-DDE in Water from Urban, Ag, & POTW Sites: 2008-2018

Figure 13. 4,4'-DDE Water Column Concentrations in Urban, Ag, and POTW Sites: 2008-2018



#### 4,4'-DDT in Receiving Water Sites: 2008-2018

Figure 14. 4,4'-DDT Water Column Concentrations in Receiving Water Sites: 2008-2018



#### 4,4'-DDT in Water from Urban, Ag, & POTW Sites: 2008-2018

Figure 15. 4,4'-DDT Water Column Concentrations in Urban, Ag, and POTW Sites: 2008-2018



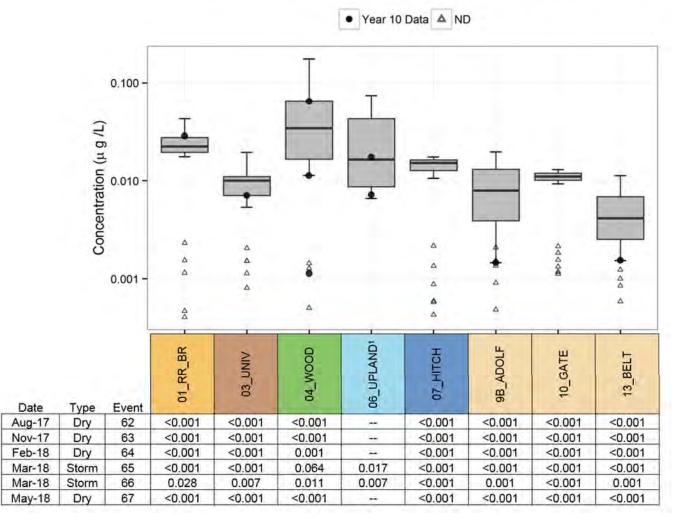
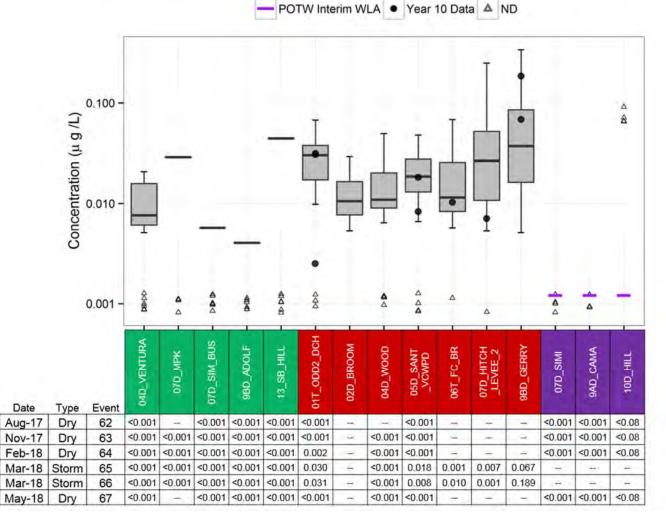


Figure 16. Total Chlordane Water Column Concentrations in Receiving Water Sites: 2008-2018



#### Total Chlordane in Water from Urban, Ag, & POTW Sites: 2008-2018

Figure 17. Total Chlordane Water Column Concentrations in Urban, Ag, and POTW Sites: 2008-2018

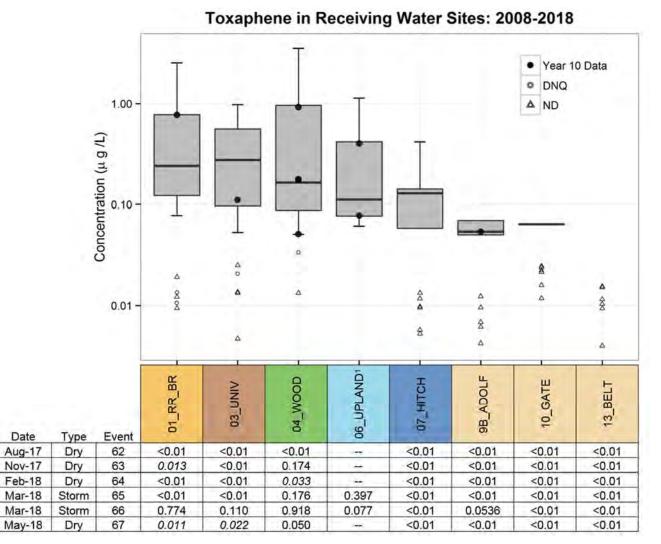
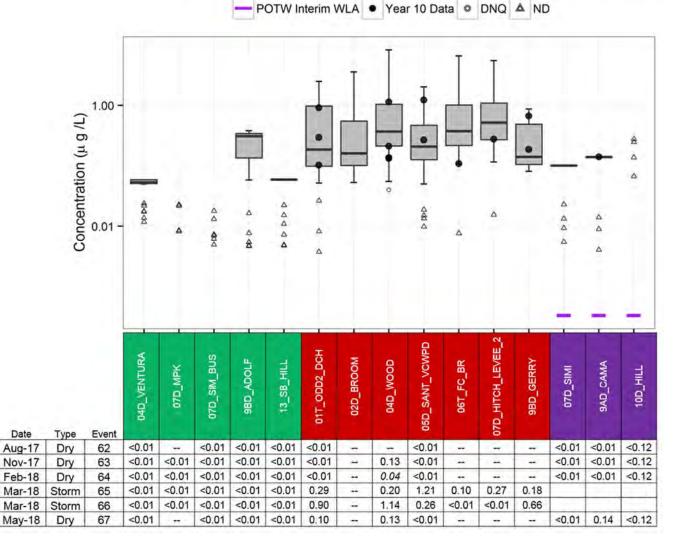
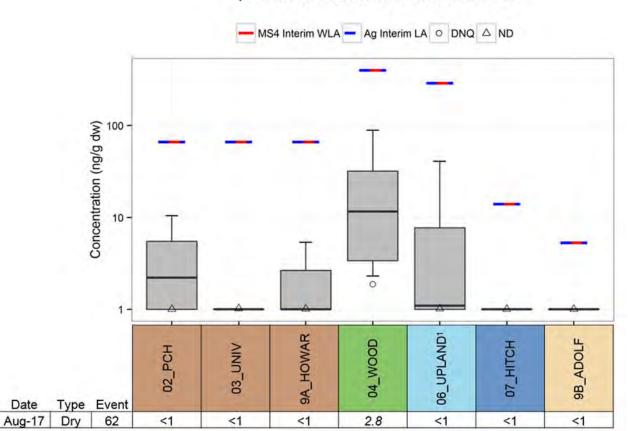


Figure 18. Toxaphene Water Column Concentrations in Receiving Water Sites: 2008-2018



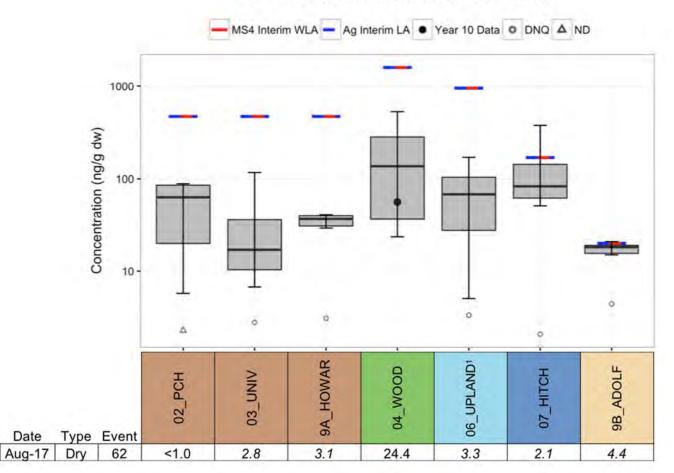
## Toxaphene in Water from Urban, Ag, & POTW Sites: 2008-2018

Figure 19. Toxaphene Water Column Concentrations in Urban, Ag, and POTW Sites: 2008-2018



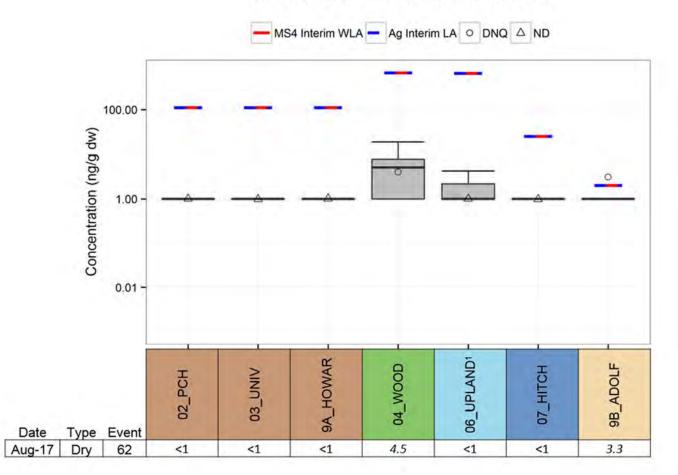
4,4'-DDD in Sediment Sites: 2008-2018

Figure 20. 4,4'-DDD Sediment Concentrations in Receiving Water Sites: 2008-2018



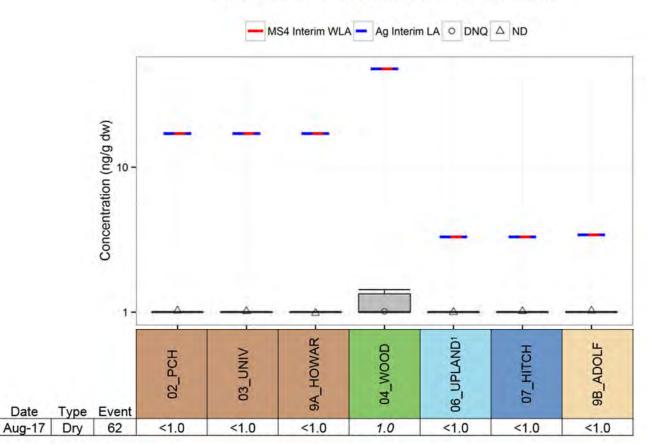
4,4'-DDE in Sediment Sites: 2008-2018

Figure 21. 4,4'-DDE Sediment Concentrations in Receiving Water Sites: 2008-2018



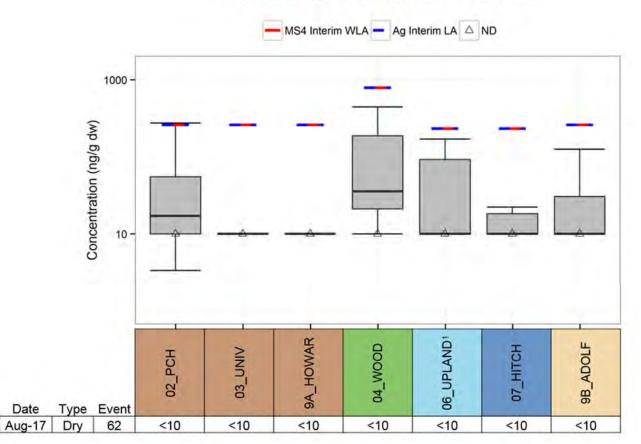
## 4,4'-DDT in Sediment Sites: 2008-2018

Figure 22. 4,4'-DDT Sediment Concentrations in Receiving Water Sites: 2008-2018



#### Total Chlordane in Sediment Sites: 2008-2018

Figure 23. Total Chlordane Sediment Concentrations in Receiving Water Sites: 2008-20182018

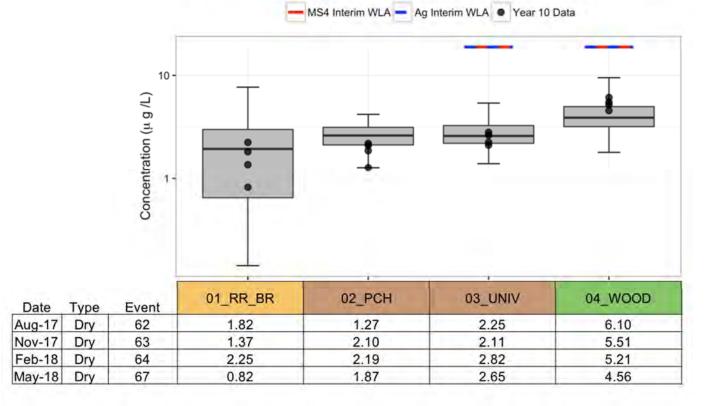


### Toxaphene in Sediment Sites: 2008-2018

Figure 24. Toxaphene Sediment Concentrations in Receiving Water Sites: 2008-2018

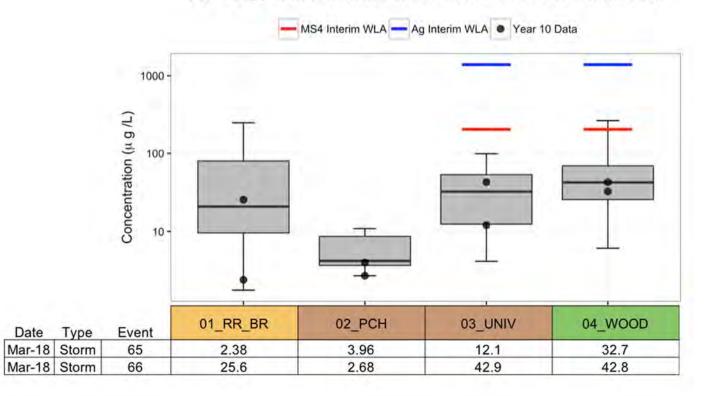
#### METALS TMDL DATA SUMMARY

The following figures present metals water quality data from receiving water, agricultural, urban, and POTW monitoring sites. Effective total metals interim load allocations and waste load allocations differ for wet and dry weather, therefore the data for each of these conditions is provided separately. Interim POTW waste load allocations for total mercury are in load form and are therefore calculated and presented in the exceedance evaluation section of the report. The Metals TMDL specifies final targets for dissolved copper, nickel and zinc to correspond with the objectives which are expressed in dissolved form. Dissolved concentrations for these three metals have been plotted for reference. Data collected during year ten, which is the reporting period for this document, have been overlain on the box plots as circles. The box plots include all of the data collected during this program (2008-2018). This was done to allow for easy comparison between recent data and what have been collected overall. The tenth year data are presented in tabular form below each box plot. Bolded values in the tables within each figure indicate the concentration was above the applicable limits for that constituent. Italicized values in the tables within each figure indicate the concentration was DNQ. Values in the tables within each figure with a "<" preceding them, indicate the constituent was ND at the MDL for that constituent. Values identified as "--" in the tables indicate no samples were collected at those sites for those events.



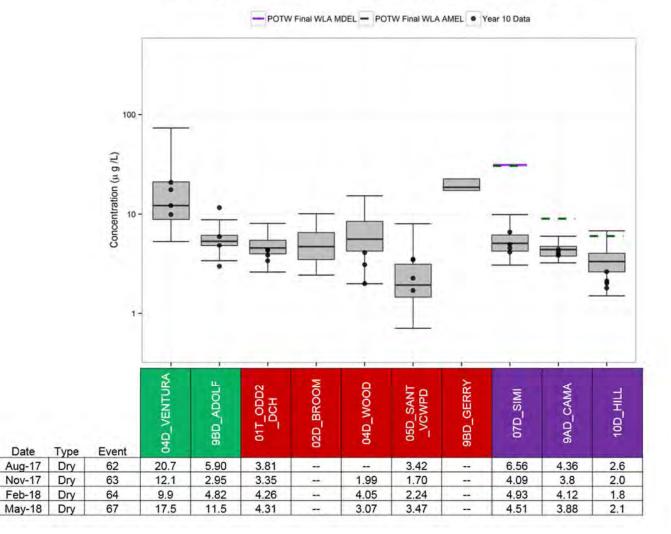
Total Copper in Receiving Water Sites: 2008-2018 Dry Weather

Figure 25. Total Copper Dry Weather Concentrations in Receiving Water Sites: 2008-2018



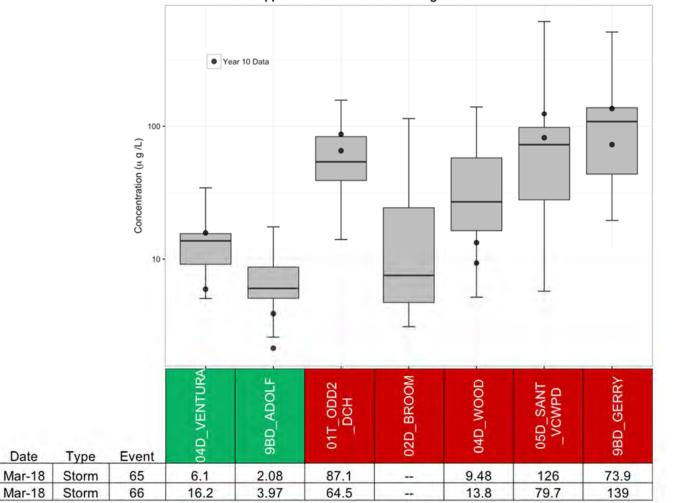
## Total Copper in Receiving Water Sites: 2008-2018 Stormwater

Figure 26. Total Copper Stormwater Concentrations in Receiving Water Sites: 2008-2018



Total Copper in Water from Urban, Ag, & POTW Sites: 2008-2018 Dry Weather

Figure 27. Total Copper Dry Weather Concentrations in Urban, Ag, and POTW Sites: 2008-2018



Total Copper in Water from Urban & Ag Sites: 2008-2018 Stormwater

Figure 28. Total Copper Wet Weather Concentrations in Urban and Ag Sites: 2008-2018

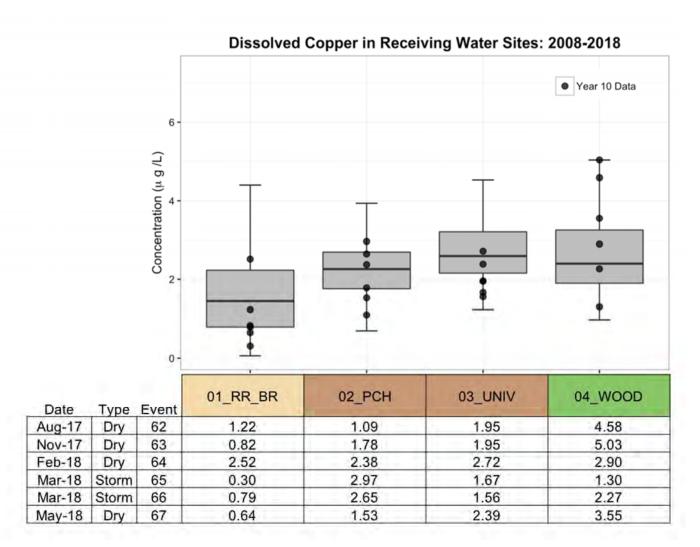


Figure 29. Dissolved Copper Concentrations in Receiving Water Sites: 2008-2018

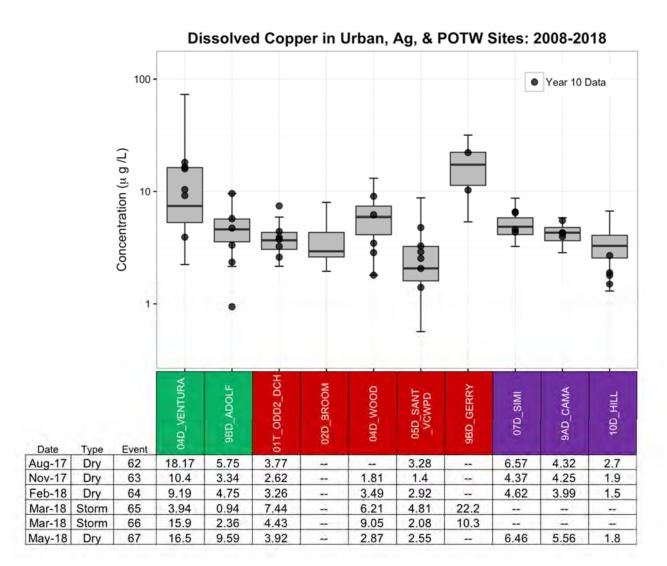
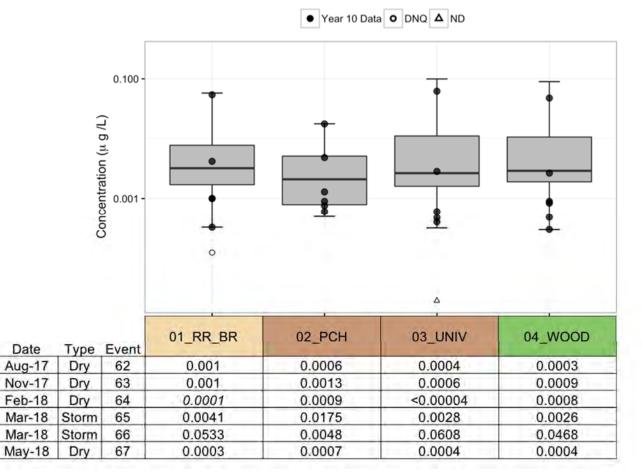
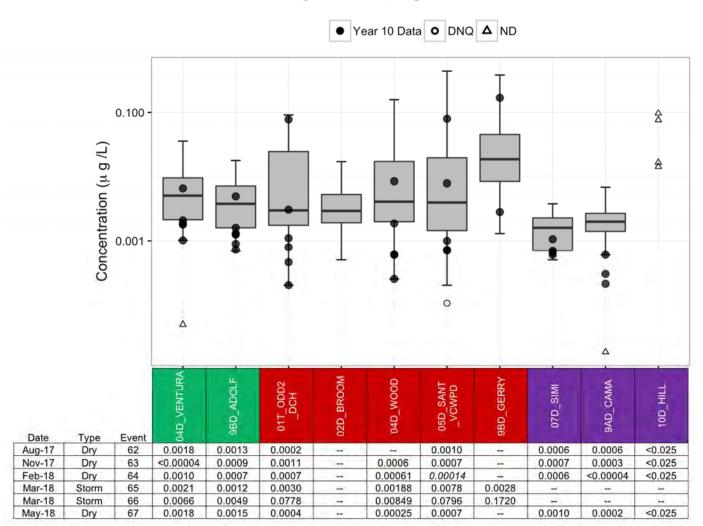


Figure 30. Dissolved Copper Concentrations in Urban, Ag, and POTW Sites: 2008-2018



Total Mercury in Receiving Water Sites: 2008-2018

Figure 31. Total Mercury Concentrations in Receiving Water Sites: 2008-2018



Total Mercury in Urban, Ag, & POTW Sites: 2008-2018

Figure 32. Total Mercury Concentrations in Urban and Ag Sites: 2008-2018

#### Total Nickel in Receiving Water Sites: 2008-2018 Dry Weather

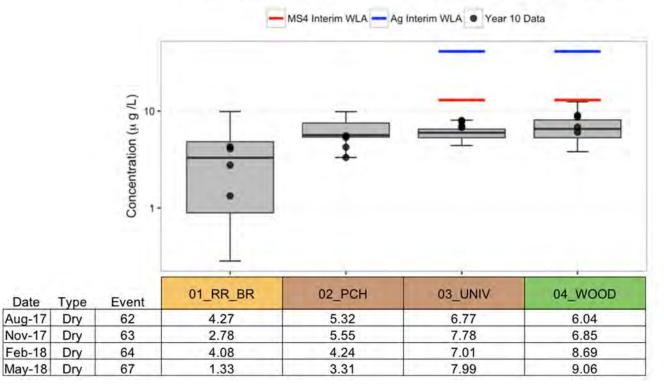
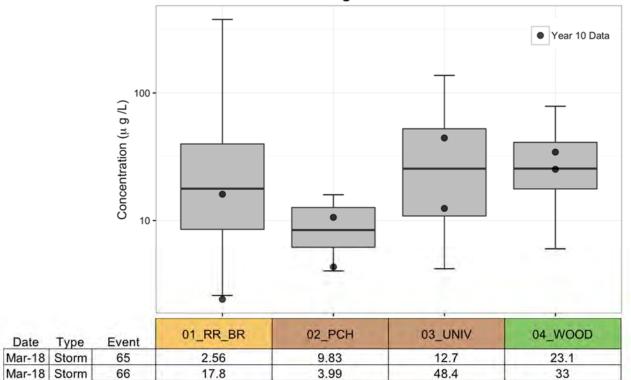
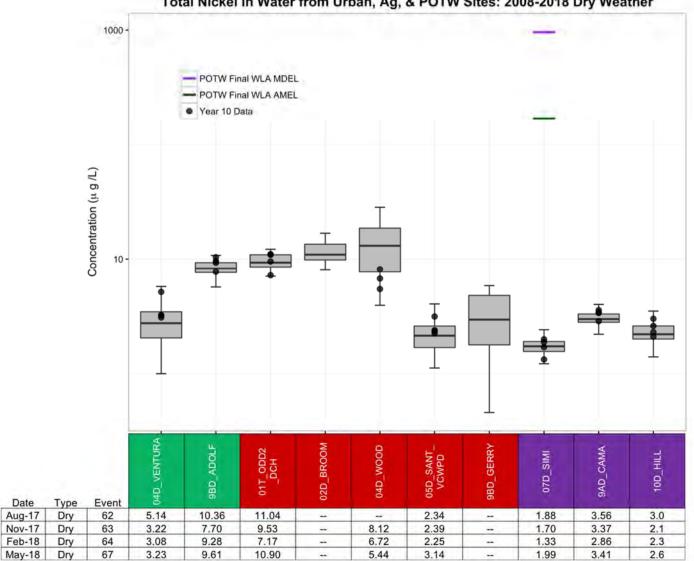


Figure 33. Total Nickel Dry Weather Concentrations in Receiving Water Sites: 2008-2018



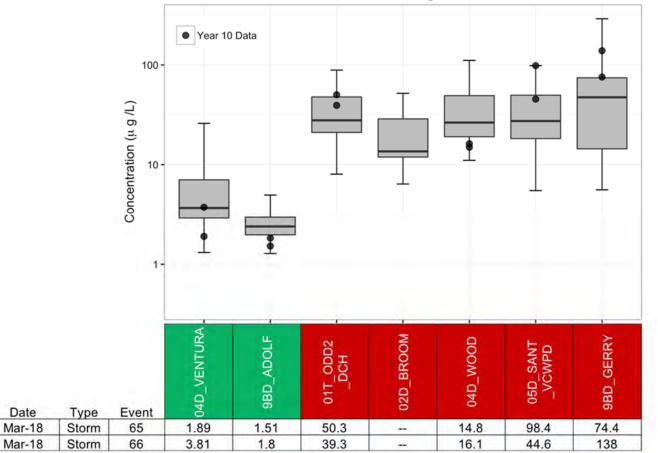
Total Nickel in Receiving Water Sites: 2008-2018 Stormwater

Figure 34. Total Nickel Stormwater Concentrations in Receiving Water Sites: 2008-2018



Total Nickel in Water from Urban, Ag, & POTW Sites: 2008-2018 Dry Weather

Figure 35. Total Nickel Dry Weather Concentrations in Urban, Ag, and POTW Sites: 2008-2018



Total Nickel in Water from Urban & Ag Sites: 2008-2018 Stormwater

Figure 36. Total Nickel Stormwater Concentrations in Urban and Ag Sites: 2008-2018

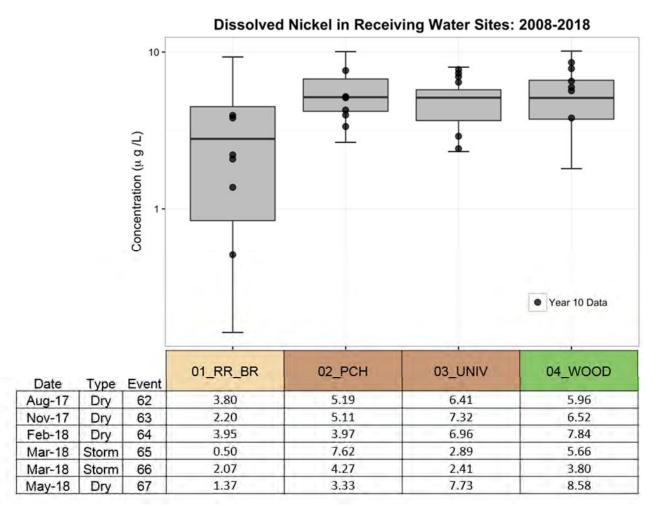
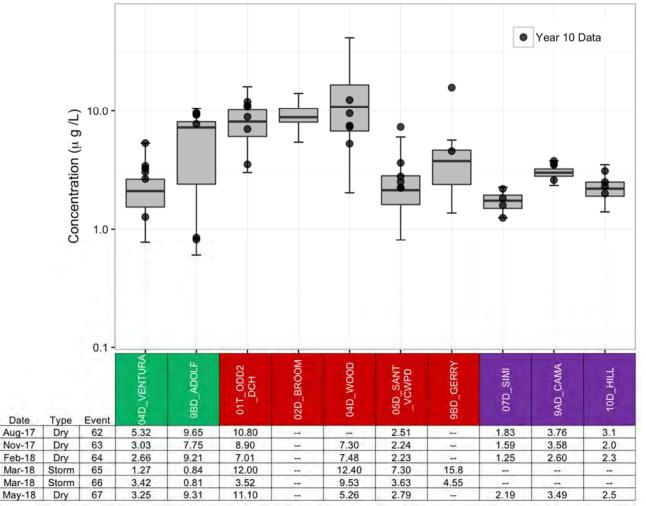
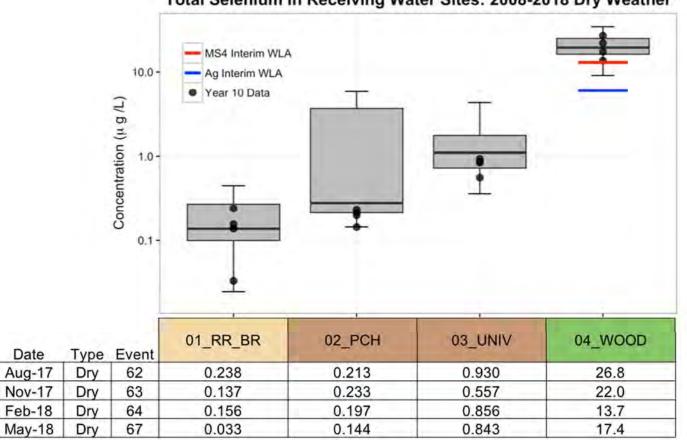


Figure 37. Dissolved Nickel Concentrations in Receiving Water Sites: 2008-2018



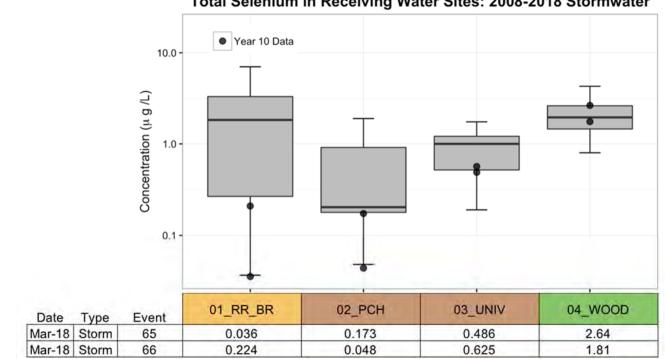
Dissolved Nickel in Urban, Ag, & POTW Sites: 2008-2018

Figure 38. Dissolved Nickel Concentrations in Urban, Ag, and POTW Sites: 2008-2018



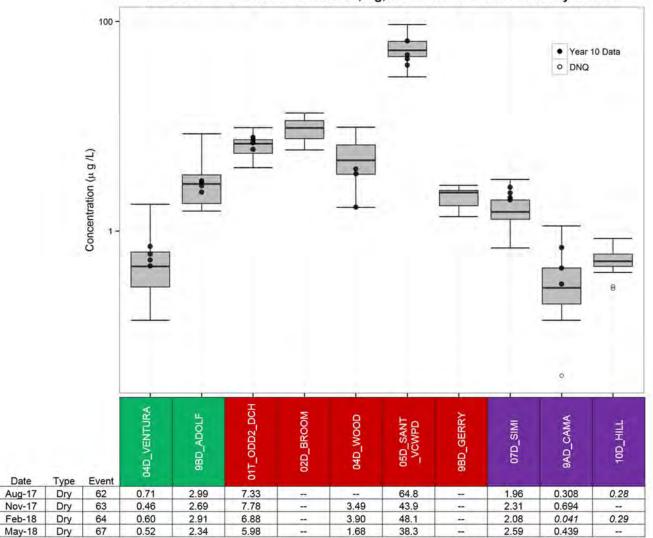
#### Total Selenium in Receiving Water Sites: 2008-2018 Dry Weather

Figure 39. Total Selenium Dry Weather Concentrations in Receiving Water Sites: 2008-2018



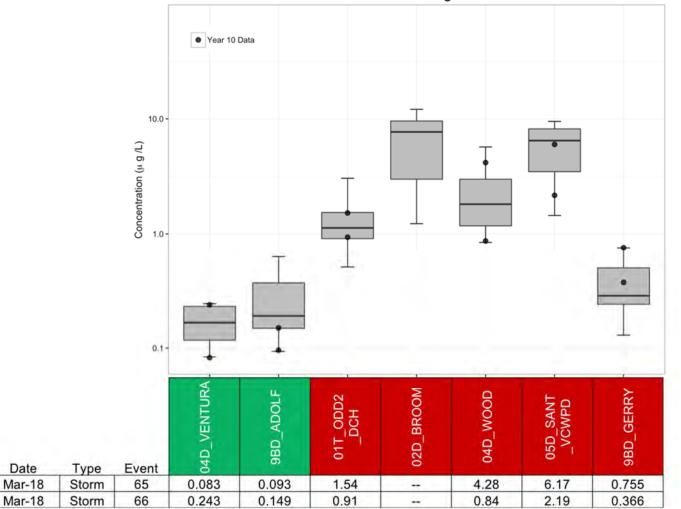
Total Selenium in Receiving Water Sites: 2008-2018 Stormwater

Figure 40. Total Selenium Stormwater Concentration in Receiving Water Sites: 2008-2018



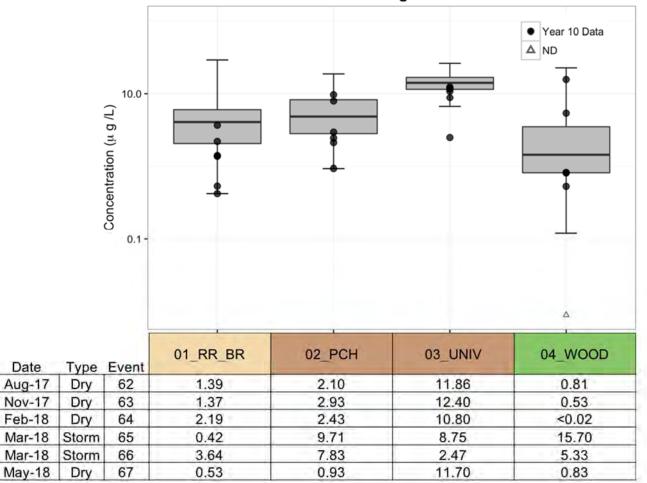
Total Selenium in Water from Urban, Ag, & POTW Sites: 2008-2018 Dry Weather

Figure 41. Total Selenium Dry Weather Concentrations in Urban, Ag, and POTW Sites: 2008-2018



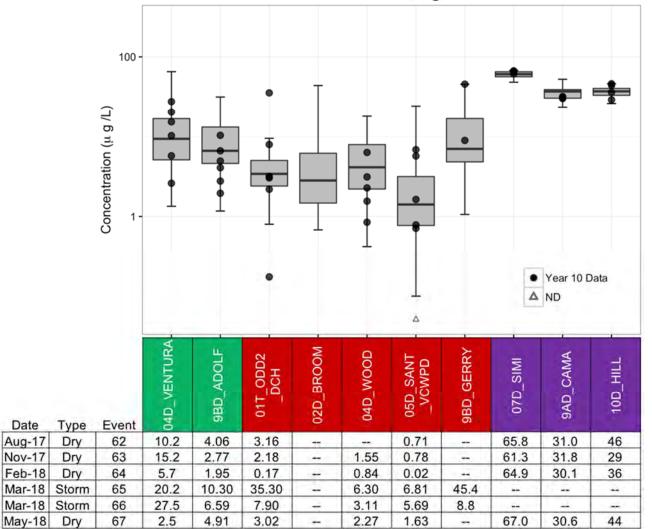
Total Selenium in Water from Urban & Ag Sites: 2008-2018 Stormwater

Figure 42. Total Selenium Stormwater Concentrations in Urban and Ag Sites: 2008-2018



Dissolved Zinc in Receiving Water Sites: 2008-2018

Figure 43. Dissolved Zinc Concentrations in Receiving Water Sites: 2008-2018

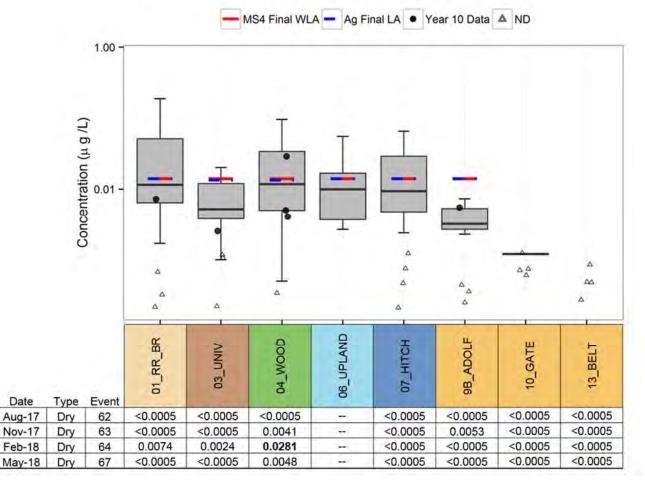


Dissolved Zinc in Water from Urban, Ag, & POTW Sites: 2008-2018

Figure 44. Dissolved Zinc Concentrations in Urban, Ag, and POTW Sites: 2008-2018

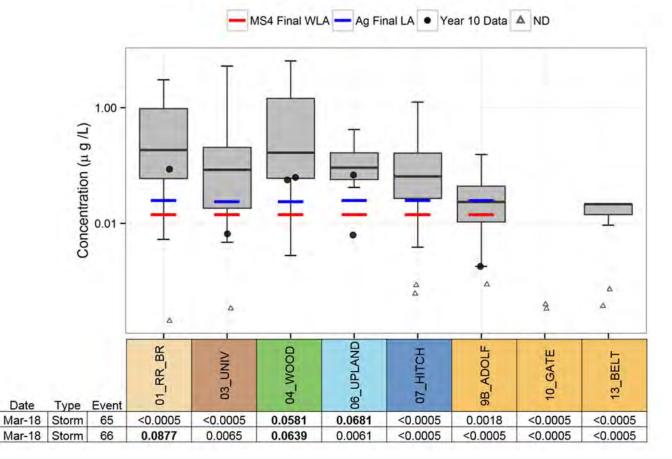
# TOXICITY TMDL

For the Toxicity TMDL, urban dischargers' and POTWs' final wasteload allocations are effective. For agricultural dischargers, interim load allocations were in effect until March 24, 2017, at which point final allocations became effective. The compliance points for these allocations are in the receiving waters at the base of the subwatersheds and are shown on the box plots for the appropriate site locations. Data for chlorpyrifos and diazinon have been separated into dry weather and stormwater since the allocations differ for the two conditions. Data collected during year ten, which is the reporting period for this document, have been overlain on the box plots as circles. The box plots include all of the data collected during this program (2008-2018). This was done to allow for easy comparison between recent data and what have been collected overall. The tenth year data are presented in tabular form below each box plot. Bolded values in the tables within each figure indicate the concentration was above the applicable limits for that constituent. Italicized values in the tables within each figure with a "<" preceding them, indicate the constituent was ND at the MDL for that constituent. Values identified as "--"" in the tables indicate no samples were collected at those sites for those events.



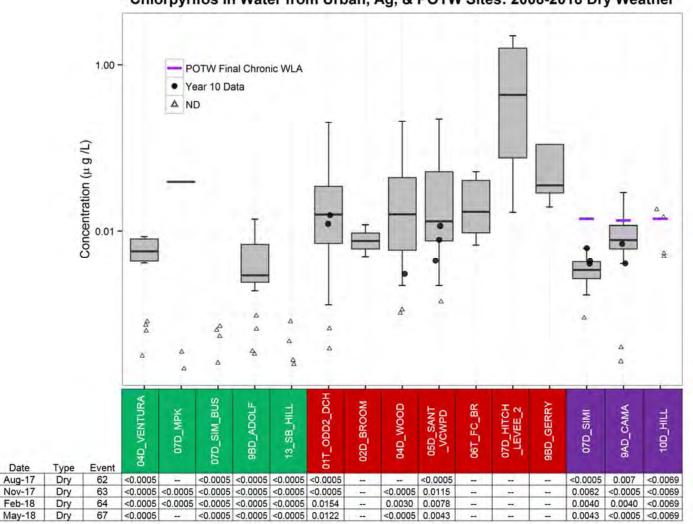
Chlorpyrifos in Receiving Water Sites: 2008-2018 Dry Weather

Figure 45. Chlorpyrifos Dry Weather Concentrations in Receiving Water Sites: 2008-2018



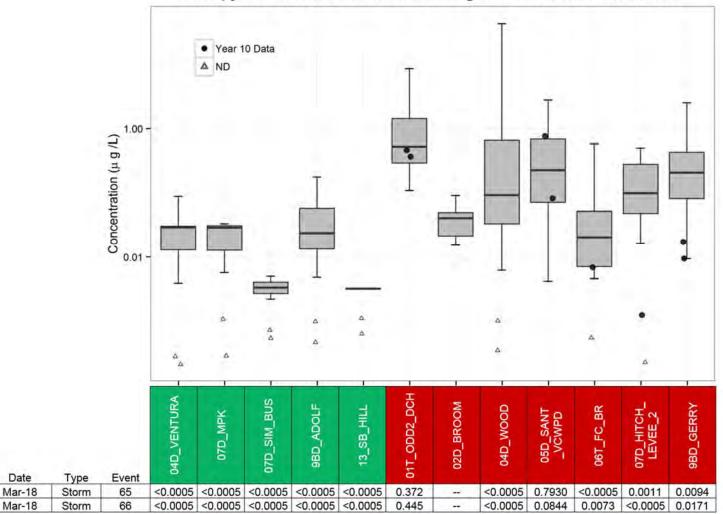
# Chlorpyrifos in Receiving Water Sites: 2008-2018 Stormwater

Figure 46. Chlorpyrifos Stormwater Concentrations in Receiving Water Sites: 2008-2018



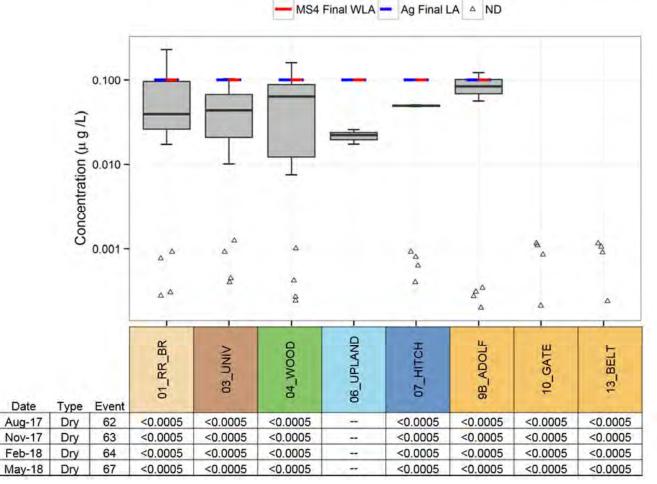
Chlorpyrifos in Water from Urban, Ag, & POTW Sites: 2008-2018 Dry Weather

Figure 47. Chlorpyrifos Dry Weather Concentrations in Urban, Ag, and POTW Sites: 2008-2018



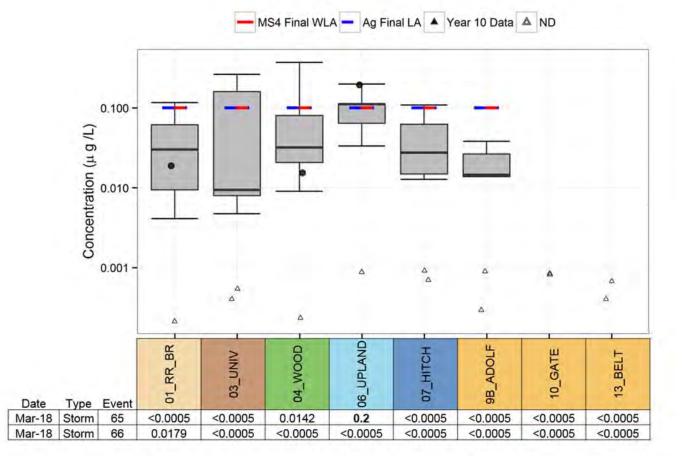
#### Chlorpyrifos in Water from Urban and Ag Sites: 2008-2018 Stormwater

Figure 48. Chlorpyrifos Stormwater Concentrations in Urban and Ag Sites: 2008-2018



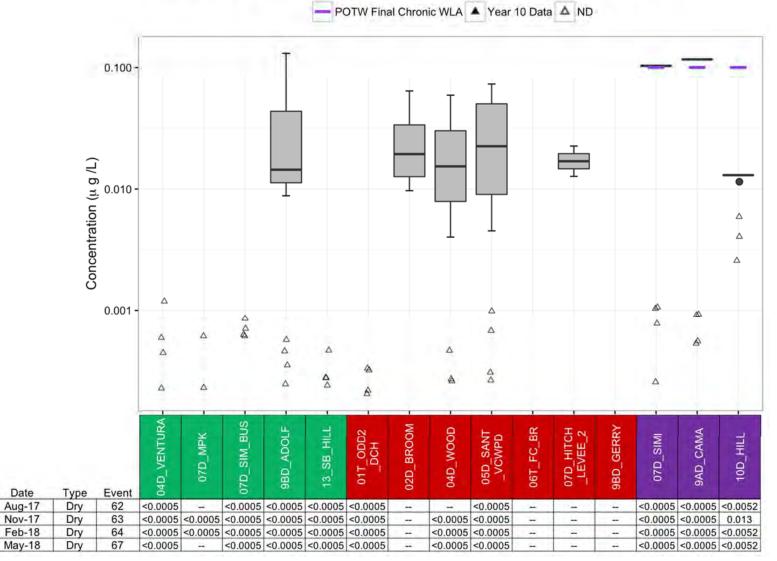
## Diazinon in Receiving Water Sites: 2008-2018 Dry Weather

Figure 49. Diazinon Dry Weather Concentrations in Receiving Water Sites: 2008-2018



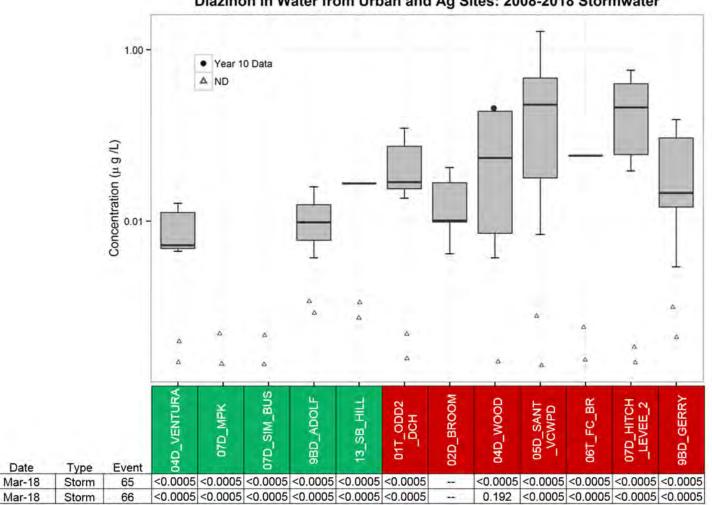
## Diazinon in Receiving Water Sites: 2008-2018 Stormwater

Figure 50. Diazinon Stormwater Concentrations in Receiving Water Sites: 2008-2018



## Diazinon in Water from Urban, Ag, & POTW Sites: 2008-2018 Dry Weather

Figure 51. Diazinon Dry Weather Concentrations in Urban, Ag, and POTW Sites: 2008-2018

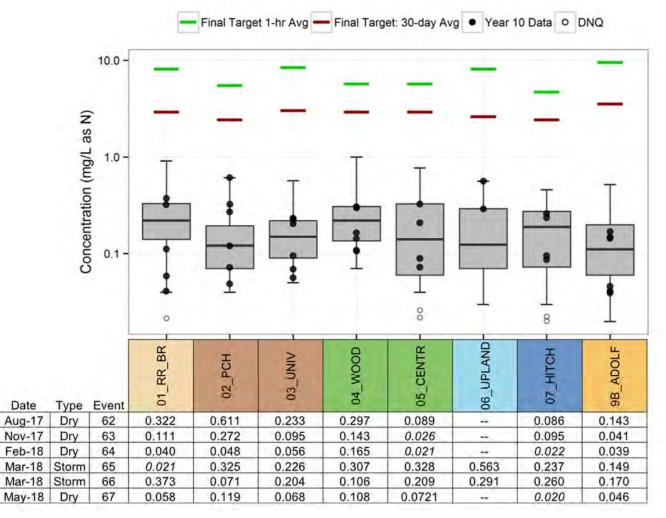


Diazinon in Water from Urban and Ag Sites: 2008-2018 Stormwater

Figure 52. Diazinon Stormwater Concentrations in Urban and Ag Sites: 2008-2018

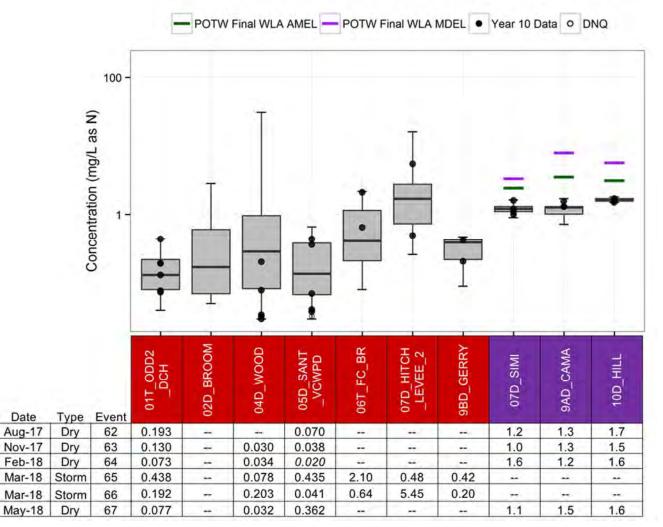
# NUTRIENTS TMDL

Final targets and allocations are effective for the Nutrients TMDL. The applicable targets for each monitoring site are presented in the figures below. Data collected during year ten, which is the reporting period for this document, have been overlain on the box plots as circles. The box plots include all of the data collected during this program (2008-2018). This was done to allow for easy comparison between recent data and what have been collected overall. The tenth year data are presented in tabular form below each box plot. Bolded values in the tables within each figure indicate the concentration was above the applicable limits for that constituent. Italicized values in the tables within each figure indicate the concentration was DNQ. Values in the tables within each figure with a "<" preceding them, indicate the constituent was ND at the MDL for that constituent. Values identified as "--" in the tables indicate no samples were collected at those sites for those events.



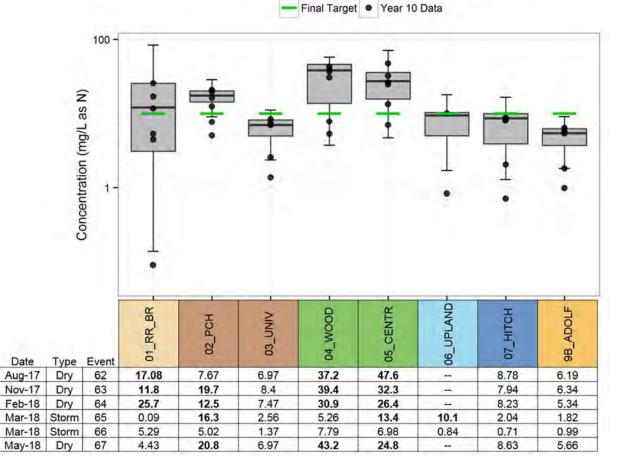
# Ammonia-N in Receiving Water Sites: 2008-2018

Figure 53. Ammonia-N Concentrations in Receiving Water Sites: 2008-2018



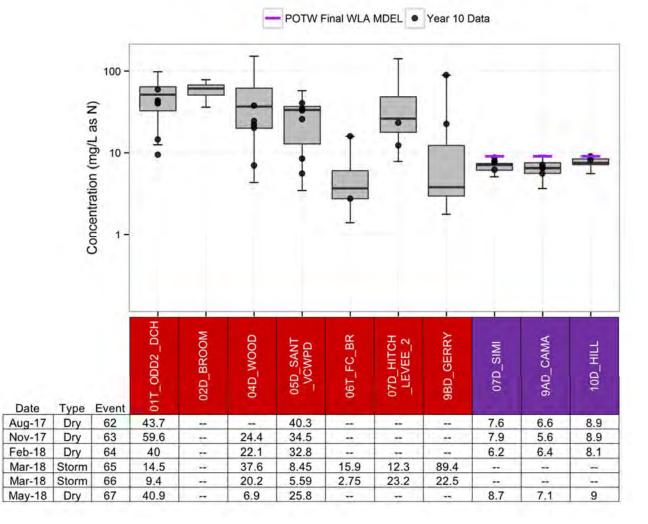
# Ammonia-N in Water from Ag & POTW Sites: 2008-2018

Figure 54. Ammonia-N Concentrations in Ag and POTW Sites: 2008-2018



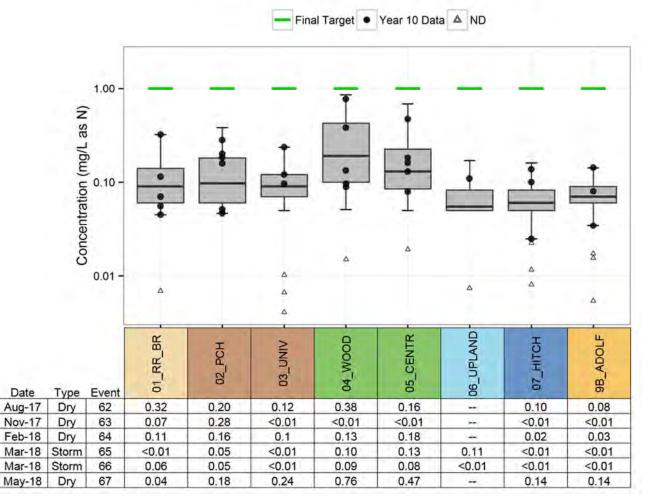
Nitrate-N in Receiving Water Sites: 2008-2018

Figure 55. Nitrate-N Concentrations in Receiving Water Sites: 2008-2018



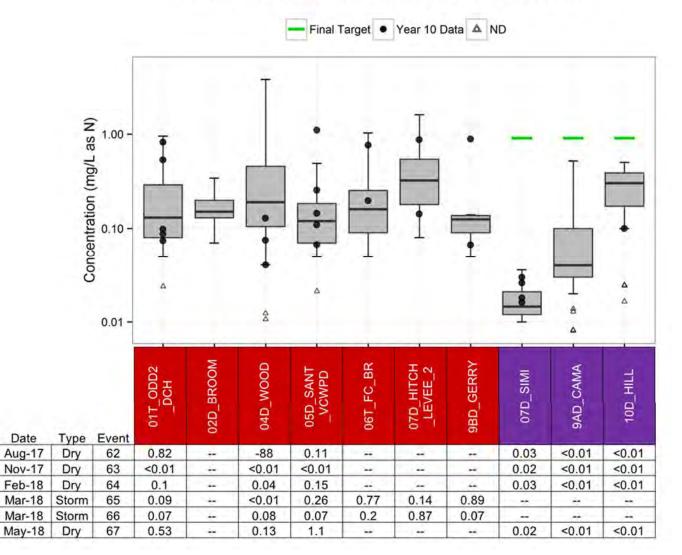
Nitrate-N in Water from Ag & POTW Sites: 2008-2018

Figure 56. Nitrate-N Concentrations in Ag and POTW Sites: 2008-2018



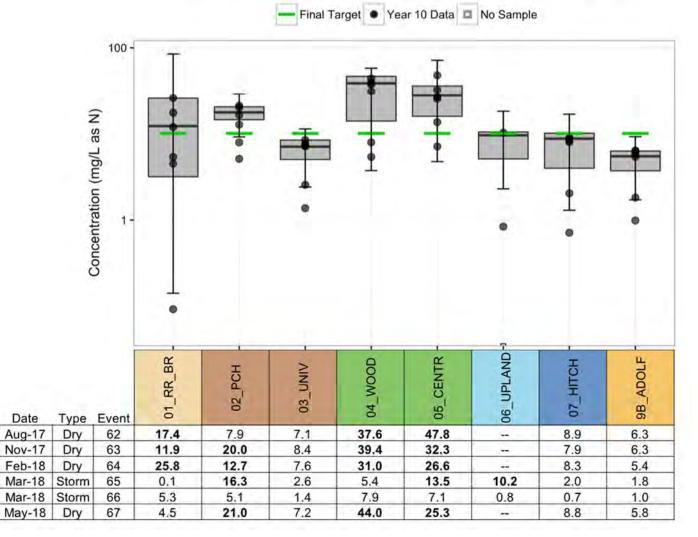
Nitrite-N in Receiving Water Sites: 2008-2018

Figure 57. Nitrite-N Concentrations in Receiving Water Sites: 2008-2018



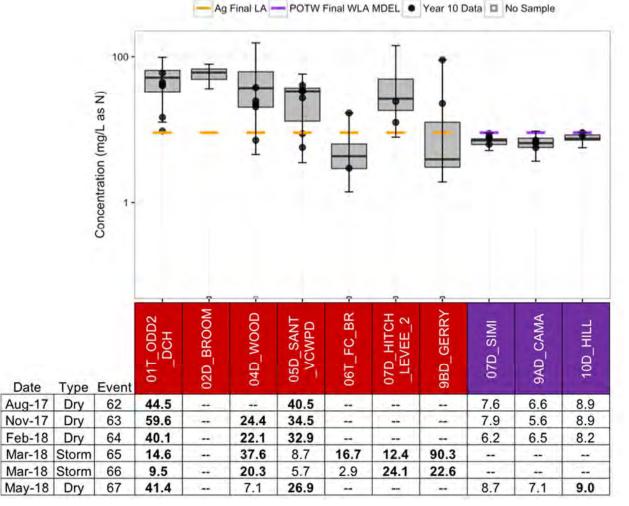
## Nitrite-N in Water from Ag & POTW Sites: 2008-2018

Figure 58. Nitrite-N Concentrations in Ag and POTW Sites: 2008-2018



# Nitrate-N + Nitrite-N in Receiving Water Sites: 2008-2018

Figure 59. Nitrate-N + Nitrite-N Concentrations in Receiving Water Sites: 2008-2018



#### Nitrate-N + Nitrite-N in Water from Ag & POTW Sites: 2008-2018

Figure 60. Nitrate-N + Nitrite-N Concentrations in Ag and POTW Sites: 2008-2018

# SALTS TMDL

For the Salts TMDL, compliance with interim dry weather salt allocations is determined using monthly mean salt concentrations for dry weather developed from the time-series of data collected at receiving water sites. Bolded values in the tables within each figure indicate the concentration was above the interim MS4 wasteload allocation and the interim load allocation for that constituent. Italicized values in the tables within each figure indicate the concentration was above the interim MS4 wasteload allocation for that constituent.

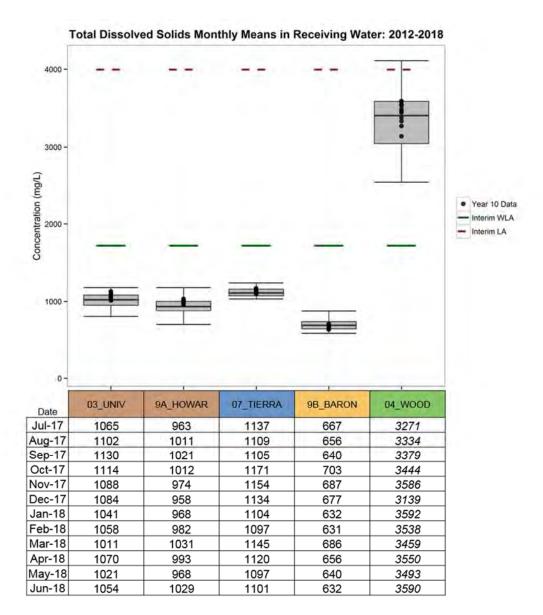
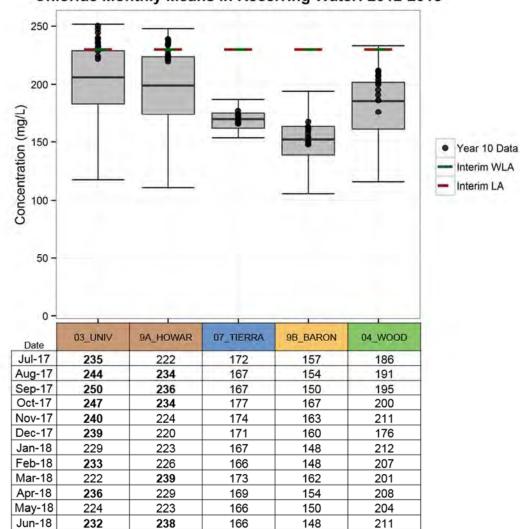


Figure 61. TDS Monthly Means for Receiving Water Sites Collected During Dry Weather



Chloride Monthly Means in Receiving Water: 2012-2018

Figure 62. Chloride Monthly Means for Receiving Water Sites Collected During Dry Weather

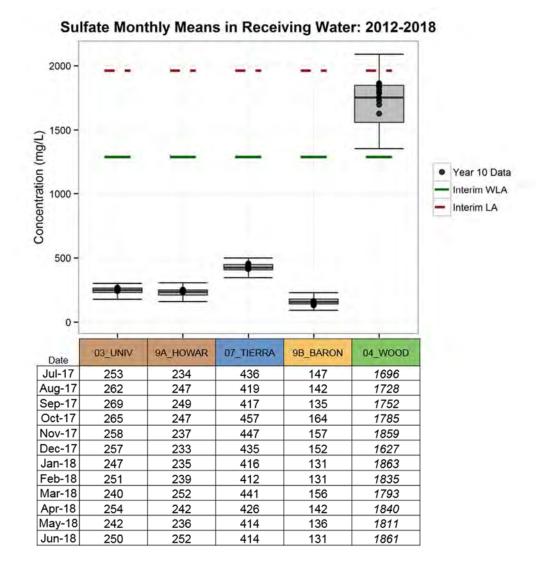


Figure 63. Sulfate Monthly Means for Receiving Water Sites Collected During Dry Weather

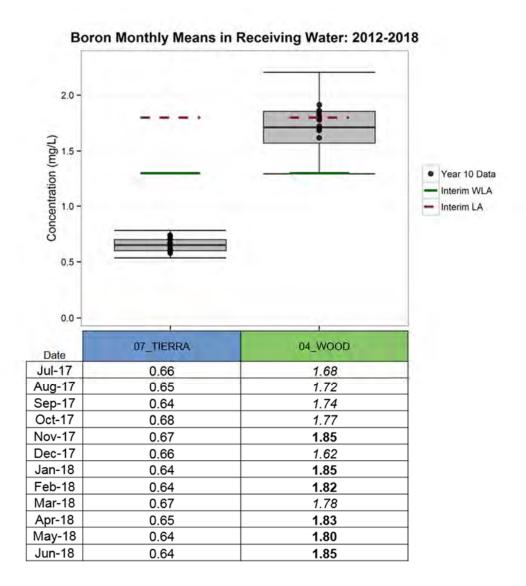
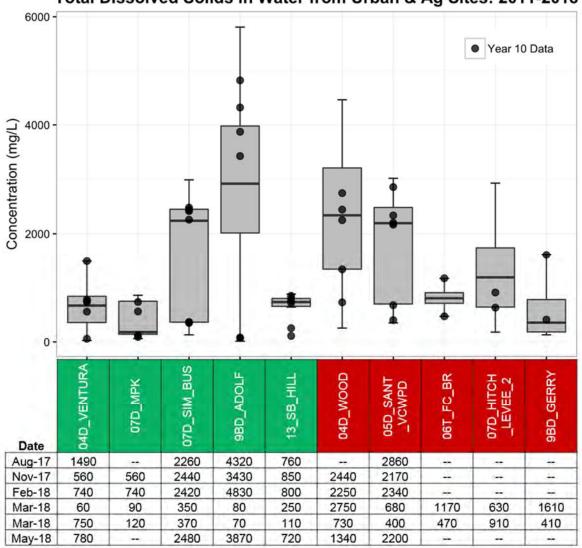


Figure 64. Boron Monthly Means for Receiving Water Sites Collected During Dry Weather



Total Dissolved Solids in Water from Urban & Ag Sites: 2011-2018

Figure 65. Total Dissolved Solids in Water from Urban and Ag Sites: 2011-2018

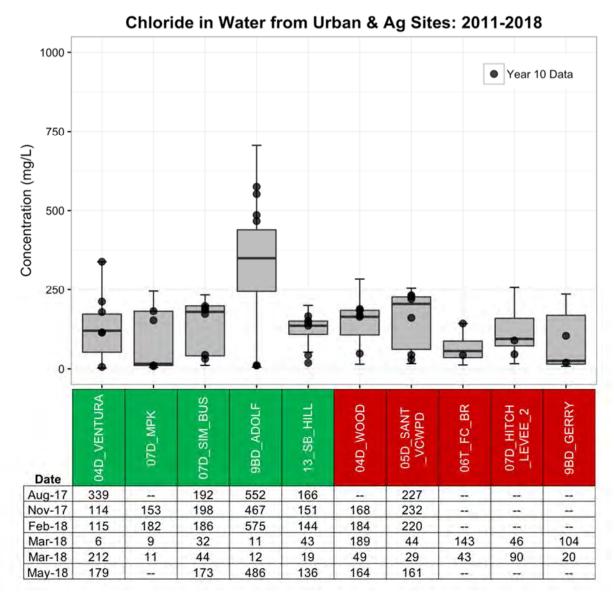


Figure 66. Chloride in Water from Urban & Ag Sites: 2011-2018

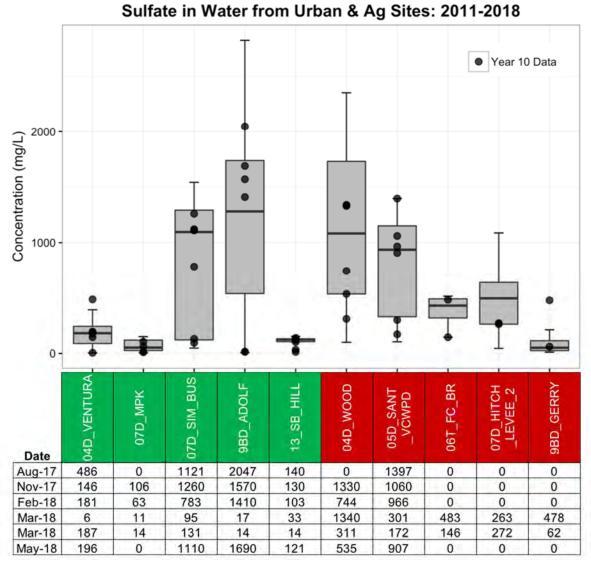
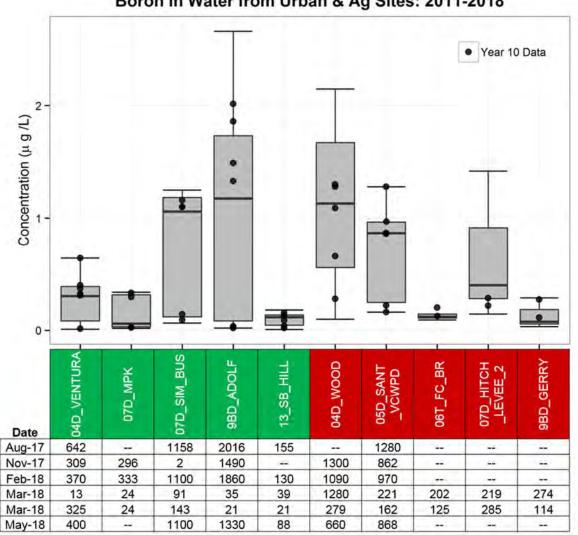


Figure 67. Sulfate in Water from Urban & Ag Sites: 2011-2018



Boron in Water from Urban & Ag Sites: 2011-2018

Figure 68. Boron in Water from Urban & Ag Sites: 2011-2018

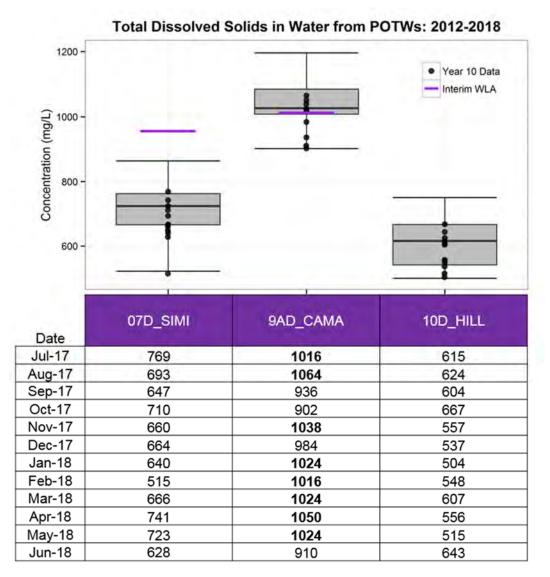


Figure 69. Total Dissolved Solids in Water from POTW Sites: 2012-2018

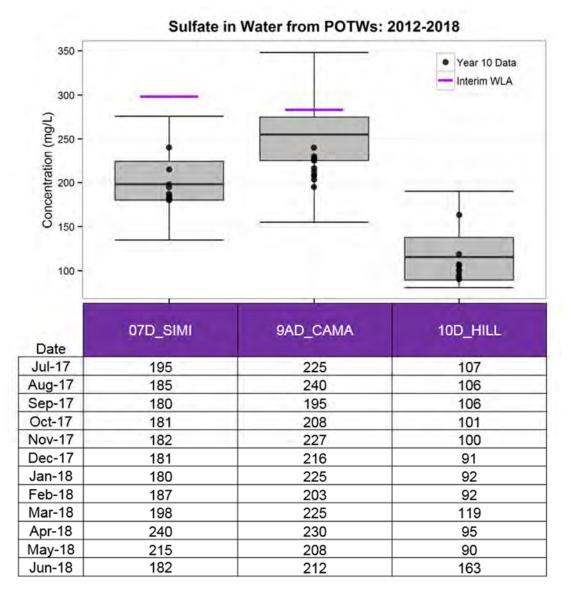
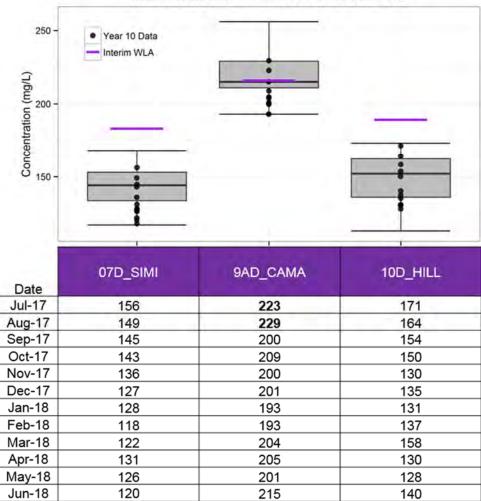
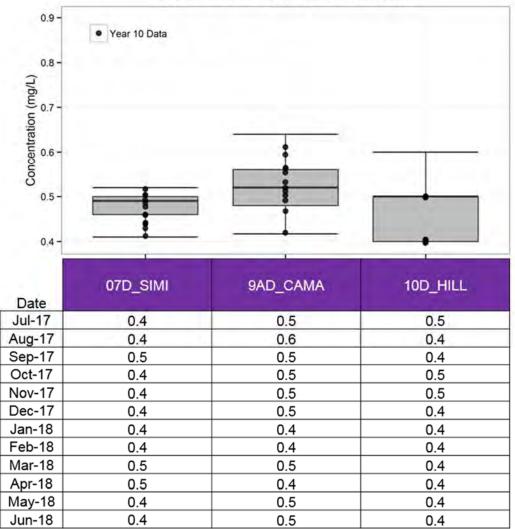


Figure 70. Sulfate in Water from POTW Sites: 2012-2018



#### Chloride in Water from POTWs: 2012-2018

Figure 71. Chloride in Water from POTW Sites: 2012-2018



Boron in Water from POTWs: 2012-2018

Figure 72. Boron in Water from POTW Sites: 2012-2018

## **FISH TISSUE DATA**

Tissue data is provided in the following tables for both Mugu Lagoon and freshwater monitoring locations. Tissue samples are only collected in Mugu Lagoon every three years; samples were collected this monitoring year. For all tables, only those constituents that have been detected in at least one sample are included. No fish were caught at 06\_UPLAND, therefore a table is not included for this site.

## Mugu Lagoon Tissue Data

		Lipids				OC P	esticide	s				PCBs	Me	tals
Date	Tissue Sample Type	Percent Lipids	Chlordane -alpha	Chlordane - gamma	2,4'- DDD	2,4'- DDE	2,4'- DDT	4,4'- DDD	4,4'- DDE	4,4'- DDT	Toxaphene	Arochlor 1260	Methyl Mercury	Total Selenium
		%	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	µg/g	µg/g
	Whole Fish Sample #1 Opaleye	13.5	DNQ	ND	ND	ND	ND	ND	12.9	ND	120	39.5	0.009	0.23
	Whole Fish Sample #2 Opaleye	5.7	ND	ND	ND	ND	ND	ND	6.6	ND	DNQ	26.7	0.011	0.22
8/29/2017	Whole Fish Sample #3 Opaleye	14.7	DNQ	ND	ND	ND	ND	ND	9.6	ND	98.8	40.8	0.009	0.21
0/29/2017	Whole Fish Sample #4 Opaleye	5.6	DNQ	DNQ	ND	ND	ND	ND	8.6	ND	82.5	65.1	0.014	0.21
	Whole Fish Sample #5 Opaleye	7.7	ND	ND	ND	ND	ND	ND	10.9	ND	76.1	24	0.015	0.22
	Whole Fish Sample #6 Opaleye	6.6	DNQ	ND	ND	ND	ND	ND	DNQ	ND	69.4	36	0.014	0.23
8/30/2017	Composite Blue Bay Mussels #1	1.8	DNQ	DNQ	11.9	DNQ	ND	30.9	145	ND	54.7	26.9	0.002	0.43

Table 9. Mugu Lagoon – Central Lagoon Tissue Data<sup>1</sup>

			Lipids				OC P	esticid	es				PCBs	Me	etals
Date	Tissue Sar	mple Type	Percent Lipids	Chlordane- alpha	Chlordane -gamma	2,4'- DDD	2,4'- DDE	2,4'- DDT	4,4'- DDD	4,4'- DDE	4,4'- DDT	Toxaphene	Aroclor 1260	Methyl Mercury	Total Selenium
			%	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	µg/g	µg/g
	Composite Musse	e Blue Bay els #1	1.8	ND	ND	9.6	DNQ	ND	20.7	129	ND	DNQ	31.9	0.004	0.38
	Whole Fish Sample #1	Opaleye	19.4	6.8	DNQ	ND	ND	ND	ND	17.6	ND	97.3	64.1	0.013	0.25
8/29/2017	Whole Fish Sample #2	Opaleye	5.3	ND	ND	ND	ND	ND	ND	7.5	ND	DNQ	DNQ	0.012	0.22
0/29/2017	Whole Fish Sample #3	Opaleye	3.7	ND	ND	ND	ND	ND	ND	6.1	ND	DNQ	ND	0.017	0.22
	Whole Fish Sample #4	Opaleye	4.5	ND	ND	ND	ND	ND	ND	DNQ	ND	DNQ	22.6	0.019	0.3
	Whole Fish Sample #5	Opaleye	2.6	ND	ND	ND	ND	ND	ND	DNQ	ND	DNQ	DNQ	0.017	0.33

Table 10. Mugu Lagoon – Western Arm Tissue Data <sup>1</sup>

## Freshwater Tissue Data

			Lipids				OC I	Pesticid	es				PCBs		
Date		FISN		FISH		Chlordane -alpha	Chlordane -gamma	2,4'- DDD	2,4'- DDE	2,4'- DDT	4,4'- DDD	4,4'- DDE	4,4'- DDT	Toxaphene	Total PCBs
				ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g		
5/8/18	Common	# 1	1.4	DNQ	ND	DNQ	ND	ND	20	250	10	50	DNQ		
5/0/10	Carp	# 2	1.76	DNQ	DNQ	DNQ	DNQ	ND	20	250	10	ND	DNQ-		

#### Table 11. Calleguas Creek – Camarillo Street CSUCI (03\_UNIV) Fish Tissue Data<sup>1</sup>

1. Only constituents with detected values are included in the table.

#### Table 12. Conejo Creek – Adolfo Road (9B\_ADOLF) Fish Tissue Data<sup>1</sup>

			Lipids				OC P	esticide	5				PCBs
Date	F	ish	Percent Lipids	Chlordane -alpha	Chlordane -gamma	2,4'- DDD	2,4'- DDE	2,4'- DDT	4,4'- DDD	4,4'- DDE	4,4'- DDT	Toxaphene	Total PCBs
			%	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
5/8/18	Common	#1	3.82	10	DNQ	10	10	ND	20	150	ND	DNQ	30.6
5/0/10	Carp	#2	1.01	DNQ	ND	DNQ	ND	ND	DNQ	70	DNQ	DNQ	ND

			Lipids			OC I	Pesticio	les				PCBs
Date	Fish		Percent Lipids	Chlordane -alpha	Chlordane -gamma	2,4'- DDD	2,4'- DDE	2,4'- DDT	4,4'- DDD	4,4'- DDE	4,4'- DDT	Total PCBs
			%	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
		#1	1.17	ND	ND	DNQ	ND	ND	DNQ	20	ND	ND
		#2	1.49	ND	ND	DNQ	ND	ND	ND	20	ND	ND
		#3	1.22	ND	ND	ND	ND	ND	DNQ	10	ND	ND
	Caldfich	#4	1.36	ND	ND	DNQ	ND	ND	DNQ	20	ND	ND
	Goldfish	#5	2.25	ND	ND	DNQ	ND	ND	ND	20	ND	ND
		#6	1.67	ND	ND	DNQ	ND	ND	ND	20	ND	ND
5/0/40		#7	2.15	ND	ND	DNQ	ND	ND	DNQ	80	ND	ND
5/8/18		#8	2.36	ND	ND	DNQ	ND	ND	10	40	ND	ND
		#9	4.47	DNQ	ND	DNQ	ND	ND	10	50	DNQ	DNQ
		#10	5.48	DNQ	ND	10	ND	ND	30	60	10	ND
	Largemouth Bass	#11	5.35	DNQ	ND	10	ND	ND	10	110	DNQ	ND
	-	#12	5.28	DNQ	ND	10	ND	ND	10	50	DNQ	ND
		#13	3.38	DNQ	ND	DNQ	ND	ND	10	70	DNQ	ND
	Fathead Minnow #14		4.8	DNQ	ND	10	ND	ND	20	510	ND	ND

#### Table 13. Arroyo Simi – Hitch Boulevard (07\_HITCH) Fish Tissue Data<sup>1</sup>

			Lipids				OC F	Pesticide	es				PCBs
Date			Percent Lipids %	Chlordane -alpha ng/g	Chlordane -gamma ng/g	2,4'- DDD ng/g	2,4'- DDE ng/g	2,4'- DDT ng/g	4,4'- DDD ng/g	4,4'- DDE ng/g	4,4'- DDT ng/g	Toxaphene ng/g	Total PCBs ng/g
5/8/18	Fathead Minnow	Comp. #1	3.60	10	DNQ	20	10	ND	70	1310	10	560	DNQ
5/0/10	Common	#1	4.71	50	10	70	20	ND	230	4030	120	1580	124
	Carp	#2	2.36	20	10	10	DNQ	ND	120	2190	40	570	65.7

Table 14. Revolon Slough – Wood Road (04\_WOOD) Fish Tissue Data Years 1 – 10<sup>1</sup>

1. Only constituents with detected values are included in the table.

#### Table 15. Revolon Slough – Wood Road (04\_WOOD) Metals Fish Tissue Data

			Lipids	Metals		
Date	Fish		Percent Lipids	Methyl Mercury	Total Selenium	
			%	μg/g	μg/g	
	Fathead Minnow	#1	3.6	0.008	2.28	
5/8/18	Common Corn	#1	4.71	0.009	1.14	
	Common Carp	#2	2.36	0.023	1.37	

## MUGU LAGOON BIRD EGG DATA

As per the CCW TMP QAPP, mercury and selenium are to be measured in bird eggs collected from around Mugu Lagoon every three years. A total of ten eggs were collected by Naval Base Ventura County environmental staff between May 8<sup>th</sup> and June 18<sup>th</sup>, 2018. Results from this egg collection can be found in the table below.

Date	Species	Total Mercury (μg/g wet weight)	Total Selenium (µg/g wet weight)
6/7/18	Least Tern	0.88	2.62
6/18/18	Least Tern	0.77	1.93
6/18/18	Least Tern	0.87	2.33
5/8/18	Snowy Plover	0.97	1.74
5/14/18	Snowy Plover	2.14	1.15
5/24/18	Snowy Plover	1.12	1.11
6/4/18	Snowy Plover	1.19	1.31
6/11/18	Snowy Plover	1.66	1.19
6/14/18	Snowy Plover	1.25	1.31
5/24/18	Snowy Plover	2.52	1.71



## TOXICITY DATA

The following is a summary of the toxicity results to date for water column and sediment at the freshwater and estuarine sampling sites. Table 17 displays significant water column mortality test results for ten years of CCWTMP events, including both dry weather and storm (bolded text) events. Significant mortality found in freshwater sediments is shown in Table 18. Toxicity was frequently identified during the first two monitoring years in water column samples, but the occurrence of toxicity has generally been decreasing over the course of monitoring. For dry weather water column sampling, toxicity has been identified historically at all sampled sites except 13\_BELT. For wet weather water column sampling, toxicity has been identified at all sites, except for 10\_GATE and 13\_BELT. Freshwater sediment toxicity is consistently found at the 04\_WOOD site and occasionally at two of the three other freshwater toxicity monitoring sites: 02 PCH and 03 UNIV.

Water column TIEs were initiated as prescribed in the QAPP, and outcomes of these efforts had limited success in identifying the true cause of toxicity. While not identifying the specific constituents causing toxicity, the TIEs have identified:

- Organic compounds are likely contributors to ambient water toxicity.
- Compounds similar to organophosphorus (OP) pesticides are continually being identified as possible contributors to the observed toxicity.

Based on the toxicity found at 04\_WOOD during the first two years of monitoring and the results of the TIE studies, the Stakeholders chose to invest resources into source control efforts to address sources potentially contributing to the toxicity issue, rather than invest resources in continuing TIE studies at this monitoring site. 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 Ag Waiver.

During the tenth year of monitoring, significant survival toxicity in the water column was observed at the 04\_WOOD site.

Freshwater sediment toxicity was found at the 04\_WOOD site and at the 02\_PCH site. No TIEs were triggered for these samples.

Mugu Lagoon sediment toxicity testing was also conducted during Event 62 at the 01\_BPT\_03, 01\_BPT\_06, 01\_BPT\_14, 01\_BPT\_15, and 01\_SG\_74 sites. Survival toxicity was observed at the 01\_BPT\_14 and 01\_SG\_74 sites for *Eohaustorius estuaries* this monitoring year.

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.

					Site ID			
CCWMTP Year	Event	04_WOOD	9B_ADOLF	03_UNIV	10_GATE	06_SOMIS/ UPLAND	13_BELT	07_HITCH
	1	Х						
	2	Х						
Year 1	3	Х	Х	X				х
i edi i	4	Х						
	5	X						Х
	6							
	9							
	12	Х						
Year 2	14	X		X		X		
	16	X		X				х
	17							
	20			Х				
	22							
	23	v						
Year 3	24	X						
	25	v						v
	<b>26</b> 27	X						х
	27					Х		
	20 29		х		х	^		
	29 30	х	^		^			
Year 4	30	^						
	32			x				
	33			A				
	34							
	35							
Year 5 <sup>1</sup>	36	X <sup>2</sup>						
	37			X <sup>3</sup>				
	38			Λ				
	39	X <sup>2</sup>						
	40				4			
Year 6	41		6	6	6	6	5	6
	42							
	43							
	44	X <sup>2</sup>		7		8		
	45	X <sup>2</sup>					9	
	46	X <sup>2</sup>		<b>X</b> <sup>10</sup>		X <sup>11</sup>		<b>X</b> <sup>10</sup>
Year 7	47	<b>X</b> <sup>2</sup>						
	48							
	49	X <sup>2</sup>				12	12	
	50							
Year 8 <sup>13</sup>	51							
	52	<b>X</b> <sup>2</sup>						

# Table 17. Water Column Toxicity for All Monitoring Events and Sites (Significant mortality denoted by "X", bolded events are wet weather events)

COMMTD					Site ID			
CCWMTP Year	Event	04_WOOD	9B_ADOLF	03_UNIV	10_GATE	06_SOMIS/ UPLAND	13_BELT	07_НІТСН
	53	<b>X</b> <sup>2</sup>						
	54							
	55							
	56							
	57							
Year 9	58							
real 9	59							
	60							
	61				14			
	62							
	63							
Veer 10	64							
Year 10	65	<b>X</b> <sup>2</sup>						
	66							
	67							

1. 10\_GATE and 13\_BELT are also toxicity investigation monitoring sites. During year 5 these sites were only sampled during Event 38.

2. A TIE was not initiated at this site. TIEs conducted during previous monitoring years identified organic compounds such as pesticides as the likely cause of the toxicity. TIEs have been suspended while efforts are taken to reduce the source of the toxicity.

- 3. A Phase I TIE was conducted for this site. While the TIE did not conclusively identify a source of toxicity, the results were indicative of organic compounds. The corresponding water quality sample detected the OP pesticide chlorpyrifos at a concentration of 0.083 µg/L. This level is above the wasteload allocation for stormwater discharges but below the agricultural discharger's interim load allocation and above the final numeric target.
- 4. Toxicity testing was not performed at the 10\_GATE site for Event 40.
- 5. Toxicity testing was not performed at the 10\_BELT site for Event 41.
- 6. Successful toxicity testing for sites with conductivity less than 3000 μS/cm could not be completed for Event 41 due to a decline in the *C. dubia* laboratory culture. Sites include: 9B\_ADOLF, 03\_UNIV, 10\_GATE, 06\_SOMIS, and 07\_HITCH.
- 7. An initial and a follow-up Phase I TIE was conducted for this site. Though the acute and chronic results of the toxicity test was not significantly different than that of the laboratory, the testing of this site did result in a greater than 50% mortality, triggering the initial and follow-up Phase I TIE. The initial TIE did not conclusively determine the source of toxicity, but did suggest that multiple co-occurring contaminants may have been responsible for the toxicity. The follow-up TIE demonstrated that no additional reductions in survival or reproduction occurred after the initial Baseline treatment, suggesting that the toxicity observed in the initial test was not persistent. This result suggests that the toxicant may have undergone natural degradation processes as the sample water aged.
- 8. Toxicity testing was not performed at the 06\_SOMIS site for Event 44.
- 9. Toxicity testing was not performed at the 13\_BELT site for Event 45.

10. A Phase I TIE was initiated at this site. While the TIE did not conclusively identify a source of toxicity, the results suggest that compounds that are activated by the Cytochrome-P450 system (e.g. OP pesticides) are contributing to sample toxicity.

- 11. A Phase I TIE was initiated at this site. While the TIE did not conclusively identify a source of toxicity, the results suggest that non-polar organic compound(s) are contributing to the ambient toxicity.
- 12. Toxicity testing was not performed at the 06\_SOMIS or 13\_BELT sites for Event 49.
- 13. During year 8, toxicity testing was only performed at the 06\_SOMIS site for Event 52.
- 14. There were no statistically significant reductions in survival in this sample as compared to the control. However, based on the observation of greater than 50 percent mortality in the 100 percent concentration of the 10\_GATE ambient water sample, a TIE targeted for organics was performed on the sample.

CCWMTP	Front		Sit	e ID	
Year	Event	04_WOOD	02_PCH <sup>1</sup>	03_UNIV	9A_HOWAR <sup>1</sup>
Year 1	1	Х			
Year 2	9	х			
Year 3	22	х			
Year 4	28	х	Х	Х	
Year 5	34	х		Х	
Year 6	39	х		X <sup>2</sup>	
Year 7	44	х		Х	
Year 8	50	х			
Year 9	56	х	Х		
Year 10	62	х	Х		

#### Table 18. Sediment Toxicity for All CCWTMP Freshwater Monitoring Events and Sites (Significant mortality denoted by "X")

1. 02\_PCH and 9A\_HOWAR are toxicity investigation monitoring sites.

A TIE targeted for organics was performed for the 03\_UNIV site due to a greater than 50 percent reduction in *H. azteca* survival.

#### Table 19. Sediment Toxicity for Mugu Lagoon Monitoring Events and Sites (Significant mortality denoted by "X")

(		·····, ····	,	, Site ID		
CCWMTP	Event					
Year	Event	01_BPT_3	01_BPT_6	01_BPT_14	01_BPT_15	01_SG_74
Year 1	1		X 1	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
Year 4	28					
Year 7	44					
Year 10	62			X <sup>1</sup>		X <sup>1</sup>

1. Survival toxicity for *Eohaustorius estuaries*.

## **Exceedance Evaluation and Discussion**

As outlined in the QAPP, data applicable to targets or allocations were reviewed for this report. The collected data were compared to the applicable targets or allocations and it is this comparison that the various agencies will use to determine necessary actions in accordance with their permit or Ag Waiver. The comparison does not provide a determination of compliance with any TMDL provision of an individual permit or Ag Waiver, as some permit/waiver conditions may vary from the comparisons provided in this section. For the comparison, various procedures were used depending on whether or not the final compliance dates for the TMDL were applicable during the monitoring year.

For TMDLs where final allocations or targets are not currently effective (OC Pesticides, Metals, and Salts 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 allocations and waste load allocations.
- 2. If an exceedance of an interim load allocation and/or waste load allocation was observed, the contributing land use data were reviewed to evaluate the potential cause of the exceedance.

POTW effluent data were compared to the relevant waste load allocations (interim or final, as appropriate).

For the Metals TMDL, the following comparisons were conducted:

- 1. For POTWs, the final waste load allocations became currently effective in March 2017. As a result, effluent monitoring results were compared to the final allocations for the analysis.
- 2. For agricultural dischargers and MS4 dischargers, final load allocations and wasteload allocations are not yet effective. As such, applicable receiving water data at the compliance locations (base of each subwatershed) were compared to the interim load allocations and wasteload allocations.

For the Nitrogen TMDL, the following 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, final load allocations are currently effective. Since agricultural dischargers are the only entities with allocations other than POTWs, compliance is evaluated by comparing receiving water results against TMDL numeric targets.

For the Toxicity TMDL, the following 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 comparison.
- 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 reviewed to evaluate whether the MS4 was potentially causing the exceedance.

- 3. For agricultural dischargers, the final 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 load allocation. If an exceedance of the applicable load allocation for a particular event was observed, the contributing agricultural land use data were reviewed to evaluate whether agricultural discharges were potentially causing the exceedance.
- 4. In cases where the applicable final 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 comparing wet weather data and the chronic toxicity allocations were used for comparing dry-weather data.

For the Salts TMDL, the following comparisons were conducted:

- 1. For POTWs, interim wasteload allocations are currently effective. As a result, effluent concentrations were compared to the interim wasteload allocations.
- 2. For agricultural and MS4 dischargers, final load allocations and wasteload allocations are not yet effective. As such, monthly dry weather mean salt concentrations at the Salts TMDL receiving water compliance sites were compared to the interim load and wasteload allocations. Appropriate land use data was evaluated in the instance of an exceedance to assess potential cause and contribution.

The following tables compare the applicable allocations based on the 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 comparison.

## **RECEIVING WATER SITE COMPARISON**

Site & Constituent	Units	Interim WLA & LA <sup>1</sup>	Event 62 Aug-2017
Mugu Lagoon – Easte			
Total Chlordane <sup>2</sup>	ng/g dw	25	DNQ
4,4'-DDD	ng/g dw	69	DNQ
4,4'-DDE	ng/g dw	300	22.3
4,4'-DDT	ng/g dw	39	DNQ
Dieldrin	ng/g dw	19	ND
PCBs <sup>3</sup>	ng/g dw	180	DNQ
Toxaphene	ng/g dw	22900	ND

 Table 20. OC Pesticides, PCBs, & Siltation in Sediment

Site & Constituent	Units	Interim WLA & LA <sup>1</sup>	Event 62 Aug-2017
Mugu Lagoon – Easte	rn Part of West	tern Arm (01_BPT_6)	
Total Chlordane <sup>2</sup>	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 <sup>3</sup>	ng/g dw	180	ND
Toxaphene	ng/g dw	22900	ND
Mugu Lagoon – Centr	al Part of West	ern Arm (01_BPT_14)	
Total Chlordane <sup>2</sup>	ng/g dw	25	ND
4,4'-DDD	ng/g dw	69	ND
4,4'-DDE	ng/g dw	300	6.5
4,4'-DDT	ng/g dw	39	ND
Dieldrin	ng/g dw	19	ND
PCBs <sup>3</sup>	ng/g dw	180	ND
Toxaphene	ng/g dw	22900	ND
Mugu Lagoon – Centr	al Lagoon (01_	BPT_15)	
Total Chlordane <sup>2</sup>	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 <sup>3</sup>	ng/g dw	180	ND
Toxaphene	ng/g dw	22900	ND
Mugu Lagoon – Centr	al Lagoon, Sou	ith of Drain #7 (01_SG_74	4)
Total Chlordane <sup>2</sup>	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 <sup>3</sup>	ng/g dw	180	ND
Toxaphene	ng/g dw	22900	ND

Site & Constituent	Units	Interim WLA & LA <sup>1</sup>	Event 62 Aug-2017		
Calleguas Creek –	Hwy 1 Bridge (02	PCH)			
Total Chlordane <sup>2</sup>	ng/g dw	17	ND		
4,4'-DDD	ng/g dw	66	ND		
4,4'-DDE	ng/g dw	470	ND		
4,4'-DDT	ng/g dw	110	ND		
Dieldrin	ng/g dw	3	ND		
PCBs <sup>3</sup>	ng/g dw	3800	ND		
Toxaphene	ng/g dw	260	ND		
Revolon Slough –	Wood Road (04_I	NOOD)			
Total Chlordane <sup>2</sup>	ng/g dw	48	DNQ		
4,4'-DDD	ng/g dw	400	DNQ		
4,4'-DDE	ng/g dw	1600	24.40		
4,4'-DDT	ng/g dw	690	DNQ		
Dieldrin	ng/g dw	5.7	ND		
PCBs <sup>3</sup>	ng/g dw	7600	ND		
Toxaphene	ng/g dw	790	ND		
Calleguas Creek –	Camarillo Street	CSUCI (03_UNIV)			
Total Chlordane <sup>2</sup>	ng/g dw	17	ND		
4,4'-DDD	ng/g dw	66	ND		
4,4'-DDE	ng/g dw	470	DNQ		
4,4'-DDT	ng/g dw	110	ND		
Dieldrin	ng/g dw	3	ND		
PCBs <sup>3</sup>	ng/g dw	3800	ND		
Toxaphene	ng/g dw	260	ND		
Conejo Creek – Ad	dolfo Road (9B_A	DOLF)			
Total Chlordane <sup>2</sup>	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	DNQ		
Dieldrin	ng/g dw	3	ND		
PCBs <sup>3</sup>	ng/g dw	3800	ND		
Toxaphene	ng/g dw	260	ND		

Site & Constituent	Units	Interim WLA & LA <sup>1</sup>	Event 62 Aug-2017
Arroyo Las Posas – U	oland Road (0	6_UPLAND)	
Total Chlordane <sup>2</sup>	ng/g dw	3.3	ND
4,4'-DDD	ng/g dw	290	ND
4,4'-DDE	ng/g dw	950	DNQ
4,4'-DDT	ng/g dw	670	ND
Dieldrin	ng/g dw	1.1	ND
PCBs <sup>3</sup>	ng/g dw	25,700	ND
Toxaphene	ng/g dw	230	ND
Arroyo Simi – Hitch Be	oulevard (07_H	ІІТСН)	
Total Chlordane <sup>2</sup>	ng/g dw	3.3	ND
4,4'-DDD	ng/g dw	14	ND
4,4'-DDE	ng/g dw	170	DNQ
4,4'-DDT	ng/g dw	25	ND
Dieldrin	ng/g dw	1.1	ND
PCBs <sup>3</sup>	ng/g dw	25,700	ND
Toxaphene	ng/g dw	230	ND

ND=not detected; DNQ=detected not quantifiable

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). Results in green type are below the applicable allocations.

Site & Constituent	Units	Target	Event 62 Dry Aug-17	Event 63 Dry Nov-17	Event 64 Dry Feb-18	Event 65 Wet Mar-18	Event 66 Wet Mar-18	Event 67 Dry May-18
Mugu Lagoon - R	onald R	eagan Brid						
Ammonia-N	mg/L	8.1	0.32	0.11	0.041	DNQ	0.37	0.06
Nitrate-N	mg/L	10	17.08	11.80	25.70	0.091	5.29	4.43
Nitrite-N	mg/L	1	0.32	0.07	0.11	ND	0.055	0.04
Nitrate-N + Nitrite-N	mg/L	10	17.40	11.87	25.81	0.091	5.35	4.47
Calleguas Creek	– Hwy 1	Bridge (02	2_PCH)					
Ammonia-N	mg/L	5.5	0.61	0.27	0.049	0.33	0.07	0.12
Nitrate-N	mg/L	10	7.67	19.70	12.50	16.30	5.02	20.80
Nitrite-N	mg/L	1	0.20	0.28	0.16	0.047	0.051	0.18
Nitrate-N + Nitrite-N	mg/L	10	7.87	19.98	12.66	16.35	5.07	20.98
Calleguas Creek	– Camai	rillo Street	CSUCI (0	3_UNIV)				
Ammonia-N	mg/L	8.4	0.23	0.10	0.06	0.23	0.20	0.07
Nitrate-N	mg/L	10	6.97	8.40	7.47	2.56	1.37	6.97
Nitrite-N	mg/L	1	0.12	ND	0.10	ND	ND	0.24
Nitrate-N + Nitrite-N	mg/L	10	7.09	8.40	7.57	2.56	1.37	7.21
Revolon Slough -	- Wood	Road (04_	WOOD)					
Ammonia-N	mg/L	5.7	0.30	0.14	0.17	0.31	0.11	0.11
Nitrate-N	mg/L	10	37.20	39.40	30.90	5.26	7.79	43.20
Nitrite-N	mg/L	1	0.38	ND	0.13	0.10	0.09	0.76
Nitrate-N + Nitrite-N	mg/L	10	37.58	39.40	31.03	5.36	7.88	43.96
Beardsley Wash	– Centra	l Avenue	(05_CENT	R)				
Ammonia-N	mg/L	5.7	0.09	DNQ	DNQ	0.33	0.21	0.07
Nitrate-N	mg/L	10	47.60	32.30	26.40	13.40	6.98	24.80
Nitrite-N	mg/L	1	0.16	ND	0.18	0.13	0.08	0.47
Nitrate-N + Nitrite-N	mg/L	10	47.76	32.30	26.58	13.53	7.06	25.27
Arroyo Las Posa	s – Upla	nd Road (		ID)				
Ammonia-N	mg/L	8.1	NS	NS	NS	0.56	0. 29	NS
Nitrate-N	mg/L	10	NS	NS	NS	10.10	0.84	NS
Nitrite-N	mg/L	1	NS	NS	NS	0.11	ND	NS
Nitrate-N + Nitrite-N	mg/L	10	NS	NS	NS	10.21	0.84	NS

## Table 21. Nitrogen Compounds in Water

Site & Constituent	Units	Target	Event 62 Dry Aug-17	Event 63 Dry Nov-17	Event 64 Dry Feb-18	Event 65 Wet Mar-18	Event 66 Wet Mar-18	Event 67 Dry May-18
Arroyo Simi – H	itch Boul	evard (07_	_HITCH)					
Ammonia-N	mg/L	4.7	0.09	0.10	DNQ	0.24	0.26	DNQ
Nitrate-N	mg/L	10	8.78	7.94	8.23	2.04	0.71	8.63
Nitrite-N	mg/L	1	0.10	ND	0.02	ND	ND	0.14
Nitrate-N + Nitrite-N	mg/L	10	8.88	7.94	8.25	2.04	0.71	8.77
Conejo Creek –	Adolfo R	oad (9B_A	DOLF)					
Ammonia-N	mg/L	9.5	0.14	0.04	0.04	0.15	0.17	0.04
Nitrate-N	mg/L	10	6.19	6.34	5.34	1.82	0.99	5.66
Nitrite-N	mg/L	1	0.08	ND	0.03	ND	ND	0.14
Nitrate-N + Nitrite-N	mg/L	10	6.27	6.34	5.37	1.82	0.99	5.80

NS=no sample, dry; NR=not required; ND=not detected; DNQ=detected not quantifiable; 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. For the comparison, monitoring results at receiving water compliance sites were compared against TMDL numeric targets (R4-2008-009).

2. One-hour average.

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

Results in green type are below the applicable allocations.

Site & Constituent	Units	Dry WLA <sup>1</sup>	Dry LA <sup>2</sup>	Event 62 Dry Aug-17	Event 63 Dry Nov-17	Event 64 Dry Feb-18	Event 67 Dry May-18	Wet WLA <sup>1</sup>	Wet LA <sup>2</sup>	Event 65 Wet Mar-18	Event 66 Wet Mar-18
Mugu Lagoo	n – Ron	ald Reag	an Bridge (	(01_RR_BR)							
Chlorpyrifos	ug/L	0.014	0.014	ND	ND	0.0074	ND	0.014	0.025	ND	0.0877
Diazinon	ug/L	0.1	0.1	ND	ND	ND	ND	0.1	0.1	ND	0.0179
Calleguas Cr	eek – C	amarillo	Street CSU	CI (03_UNIV	り						
Chlorpyrifos	ug/L	0.014	0.0133	ND	ND	0.0025	ND	0.014	0.024	ND	0.0066
Diazinon	ug/L	0.1	0.1	ND	ND	ND	ND	0.1	0.1	ND	ND
Revolon Slou	lgh – W	ood Roa	d (04_WOO	D)							
Chlorpyrifos	ug/L	0.014	0.0133	ND	0.0041	0.0281	0.0049	0.014	0.024	0.0581	0.0639
Diazinon	ug/L	0.1	0.1	ND	ND	ND	ND	0.1	0.1	0.0142	ND
Arroyo Las P	osas –	Upland F	Road (06_U	PLAND)							
Chlorpyrifos	ug/L	0.014	0.014	NS	NS	NS	NS	0.014	0.025	0.0681	0.0062
Diazinon	ug/L	0.1	0.1	NS	NS	NS	NS	0.1	0.1	0.2	ND
Arroyo Simi	– Hitch	Boulevar	d (07_HITC	:H)							
Chlorpyrifos	ug/L	0.014	0.014	ND	ND	ND	ND	0.014	0.025	ND	ND
Diazinon	ug/L	0.1	0.1	ND	ND	ND	ND	0.1	0.1	ND	ND
Conejo Creel	k – Adol	lfo Road	(9B_ADOL	F)							
Chlorpyrifos	ug/L	0.014	0.014	ND	0.0053	ND	ND	0.014	0.025	0.0018	ND
Diazinon	ug/L	0.1	0.1	ND	ND	ND	ND	0.1	0.1	ND	ND
Conejo Creel	k – Hill G	Canyon E	Below N Fo	rk (10_GATE	E)						
Chlorpyrifos	ug/L	0.014	0.014	ND	ND	ND	ND	0.014	0.025	ND	ND
Diazinon	ug/L	0.1	0.1	ND	ND	ND	ND	0.1	0.1	ND	ND
Conejo Creel	k – S Fo	rk Behin	d Belt Pres	s Build (13_	BELT)						
Chlorpyrifos	ug/L	0.014	0.014	ND	ND	ND	ND	0.014	0.025	ND	ND
Diazinon	ug/L	0.1	0.1	ND	ND	ND	ND	0.1	0.1	ND	ND

#### Table 22. Toxicity, Diazinon, and Chlorpyrifos in Water

ND=not detected; NS=no sample collected due to site being dry.

1. Final Dry and Wet Weather wasteload allocations for Stormwater Dischargers effective as of March 24, 2008 (R4-2005-009).

2. Final Dry and Wet Weather load allocations for Irrigated Agriculture; effective as of March 24, 2016 (R4-2005-009).

Results in **bold red type** exceed applicable final wasteload allocation and load allocation.

Results in green type are below the applicable allocations.

#### Table 23. Metals and Selenium in Water

Constituent	Units	Dry Interim WLA <sup>1</sup>	Dry Interim LA <sup>2</sup>	Event 62 Dry Aug-2017	Event 63 Dry Nov-2017	Event 64 Dry Feb-2018	Event 67 Dry May-2018	Wet Interim WLA <sup>1</sup>	Wet Interim LA <sup>2</sup>	Event 65 Wet Mar-2018	Event 66 Wet Mar-2018	Annual Average <sup>3</sup>
Revolon Slough	– Wood	d Road (04	4_WOOD)									
Total Copper	µg/L	19	19	6.11	5.51	5.21	4.56	204	1390	32.7	42.8	
Total Nickel	µg/L	13	42	6.04	6.85	8.69	9.06	74 <sup>4</sup>	74 <sup>4</sup>	23.1	33.0	
Total Selenium	µg/L	13	6	26.9	22	13.7	17.4	290 <sup>4</sup>	290 <sup>4</sup>	2.64	1.81	
Total Mercury <sup>5</sup>	lbs/yr	1.7	2									0.13 <sup>6</sup>
Calleguas Creel	k – Cam	arillo Stre	et CSUCI	(03_UNIV)								
Total Copper	µg/L	19	19	2.25	2.11	2.82	2.65	204	1390	12.1	42.9	
Total Nickel	µg/L	13	42	6.78	7.78	7.01	7.99	74 <sup>4</sup>	74 <sup>4</sup>	12.7	48.4	
Total Selenium	µg/L			0.93	0.56	0.856	0.84			0.49	0.63	
Total Mercury ⁵	lbs/yr	3.3	3.9									0.31

1. Interim wasteload allocations for Stormwater Dischargers; effective until March 2022 (R4-2006-0012)

2. Interim 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 real time data loggers.

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 wasteload allocations and load allocations are expressed as annual loads. Total annual flow for 07/01/17 to 06/30/18 into Mugu Lagoon from Calleguas Creek is calculated as 3,417 Mgal/yr. Total annual flow for 07/01/17 to 06/30/18 into Mugu Lagoon from Revolon Slough is calculated as 1,813 Mgal/yr. As such, the interim wasteload allocation and load allocation shown for both Calleguas Creek and Revolon Slough correspond to the flow range of 0 to 15,000 to Mgal/yr, per R4-2006-0012.

6. Daily flow measurements were not available from 12/16/2017 to 12/20/2017 due to an outage. Therefore, total annual flow used in the calculation of this value do not include flow measurements from these dates.

Results in **bold red type** exceed applicable interim wasteload allocation and load allocation. Results in green type are below the applicable allocations.

	Unite	Interin	n Limit	1.1.47	Aug 17	San 17	Oct 17	Nev 17	Dec 17	lan 10	Eab 10	Mar 10	Amr 40	May 10	lun 40
	Units	WLA	LA	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18
Revolon S	lough – W	ood Roa	d (04_W	OOD)											
TDS	mg/L	1720	3995	3444	3586	3139	3271	3334	3379	3592	3538	3459	3550	3493	3590
Chloride	mg/L	230	230	200	211	176	186	191	195	212	207	201	208	204	211
Sulfate	mg/L	1289	1962	1785	1859	1627	1696	1728	1752	1863	1835	1793	<b>1840</b>	1811	1861
Boron	mg/L	1.3	1.8	1.8	1.8	1.6	1.7	1.7	1.7	1.9	1.8	1.8	1.8	1.8	1.9
Calleguas	Creek – U	niversity	Drive C	SUCI (03_U	INIV)										
TDS	mg/L	1720	3995	1114	1088	1084	1065	1102	1130	1041	1058	1011	1070	1021	1054
Chloride	mg/L	230	230	247	240	239	235	244	250	229	233	222	236	224	232
Sulfate	mg/L	1289	1962	265	258	257	253	262	269	247	251	240	254	242	250
Conejo Cre	ek – How	ard Road	d Bridge	(9A_HOWA	AR)										
TDS	mg/L	1720	3995	1012	974	958	963	1011	1021	968	982	1031	993	968	1029
Chloride	mg/L	230	230	234	224	220	222	234	236	223	226	239	229	223	238
Sulfate	mg/L	1289	1962	247	237	233	234	247	249	235	239	252	242	236	252
Conejo Cre	ek – Barc	on Brothe	ers Nurs	ery (9B_BA	RON)										
TDS	mg/L	1720	3995	703	687	677	667	656	640	632	631	686	656	640	632
Chloride	mg/L	230	230	167	163	160	157	154	150	148	148	162	154	150	148
Sulfate	mg/L	1289	1962	164	157	152	147	142	135	131	131	156	142	136	131
Arroyo Sin	ni – Tierra	Rejada I	Road (07	_TIERRA)											
TDS	mg/L	1720	3995	1171	1154	1134	1137	1109	1105	1104	1097	1145	1120	1097	1101
Chloride	mg/L	230	230	177	174	171	172	167	167	167	166	173	169	166	166
Sulfate	mg/L	1289	1962	457	447	435	436	419	417	416	412	441	426	414	414
Boron	mg/L	1.3	1.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.6

#### Table 24. Monthly Mean Salts Concentrations

Notes:

a. Monthly dry weather mean salt concentrations were generated using mean daily salt concentrations (from 5-min data) for days that met the definition of dry weather in the Salts TMDL (i.e., discharge < 86th percentile flow and no measureable rain in preceding 24 hrs). The 86th percentile of mean daily discharge at 03\_Univ (generated using 5-min discharge data for the period July 1, 2017-June 30, 2018) was used as the flow-related threshold for distinguishing wet and dry days for all five compliance sites. Daily precipitation records for 24 gages in the CCW watershed (accessed via the VCWPD Hydrologic Data Server) were used to determine days with "measureable precipitation". Days were considered as having measureable precipitation if two or more rain gages in the watershed received 0.1 inch or more of precipitation.

Results in **bold red type** exceed both the applicable interim wasteload allocation and load allocation. Results in **bold purple type** exceed the interim wasteload allocation, but not the interim load allocation. Results in green type are below the applicable allocations.

## POTW DATA COMPARISON

#### Table 25. Nitrogen Compounds – POTWs

Site & Constituent	Units	Final WLA <sup>1</sup>	Event 62 Dry Aug-17	Event 63 Dry Nov-17	Event 64 Dry Feb-18	Event 67 Dry May-18
Simi Valley Water Quality Cont	rol Plant	(07D_SIMI)				
Ammonia-N	mg/L	3.5 <sup>2</sup> , 7.8 <sup>3</sup>	1.20	1	1.60	1.10
Nitrate-N	mg/L	9	7.60	7.90	6.20	8.70
Nitrite-N	mg/L	0.9	0.03	0.02	0.03	0.02
Nitrate-N + Nitrite-N	mg/L	9	7.63	7.92	6.23	8.72
Camarillo Water Reclamation F	Plan (9AL	D_CAMA)				
Ammonia-N	mg/L	3.1 <sup>2</sup> , 5.6 <sup>3</sup>	1.30	1.30	1.29	1.56
Nitrate-N	mg/L	9	6.60	5.60	6.48	7.11
Nitrite-N	mg/L	0.9	ND	ND	ND	ND
Nitrate-N + Nitrite-N	mg/L	9	6.60	5.6	6.48	7.11
Hill Canyon Wastewater Treatn	nent Plar	nt (10D_HILL)				
Ammonia-N	mg/L	2.4 <sup>2</sup> , 3.3 <sup>3</sup>	1.70	1.50	1.60	1.60
Nitrate-N	mg/L	9	8.90	8.90	8.10	9.00
Nitrite-N	mg/L	0.9	ND	ND	0.10	ND
Nitrate-N + Nitrite-N	mg/L	9	8.90	8.90	8.20	9.00

ND=constituent not detected at the MDL. 1. The effective date for these wasteload allocations was July 16, 2007 (R4-2008-009) 2. Wasteload allocations as Average Monthly Effluent Limit 3. Wasteload allocations as Maximum Daily Effluent Limit

Results in green type are below the applicable allocations.

			Event 62	Event 63	Event 64	Event 67
POTW & Constituent	Units	Final WLA <sup>1</sup>	Dry Aug-2017	Dry Nov-2017	Dry Feb-2018	Dry May-2018
				100-2017	1 60-2010	Way-2010
Camarillo Water Re			,			
Total Chlordane <sup>2</sup>	ng/L	1.2	ND	ND	ND	ND
4,4'-DDD	ng/L	1.7	ND	ND	ND	ND
4,4'-DDE	ng/L	1.2	ND	ND	ND	ND
4,4'-DDT	ng/L	1.2	ND	ND	ND	ND
Dieldrin	ng/L	0.28	ND	ND	ND	ND
PCBs <sup>3</sup>	ng/L	0.34	ND	ND	-	-
Toxaphene	ng/L	0.33	ND	ND	ND	141
Hill Canyon Wastew	vater Treat	tment Plant (10	D_HILL)			
Total Chlordane <sup>2</sup>	ng/L	1.2	ND	ND	ND	ND
4,4'-DDD	ng/L	1.7	ND	ND	ND	ND
4,4'-DDE	ng/L	1.2	ND	ND	ND	ND
4,4'-DDT	ng/L	1.2	ND	ND	ND	ND
Dieldrin	ng/L	0.28	ND	ND	ND	ND
PCBs <sup>3</sup>	ng/L	0.34	ND	ND	ND	ND
Toxaphene	ng/L	0.33	ND	ND	ND	ND
Simi Valley Water G	uality Cor	ntrol Plant (07D	_SIMI)			
Total Chlordane <sup>2</sup>	ng/L	1.2	ND	ND	ND	ND
4,4'-DDD	ng/L	1.7	ND	ND	ND	ND
4,4'-DDE	ng/L	1.2	ND	ND	ND	ND
4,4'-DDT	ng/L	1.2	ND	ND	ND	ND
Dieldrin	ng/L	0.28	ND	ND	ND	ND
PCBs <sup>3</sup>	ng/L	0.34	ND	ND	ND	ND
Toxaphene	ng/L	0.33	ND	ND	ND	ND

#### Table 26. OC Pesticides, PCBs, and Siltation - POTWs

ND=constituent not detected at the MDL.

1. Final wasteload allocations were added to each of the POTWs' permits in 2015.

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).

Results in green type are below the applicable allocations.

Results in **bold red type** exceed applicable wasteload allocation.

			Event 62	Event 63	Event 64	Event 67
POTW &		Final	Dry	Dry	Dry	Dry
Constituent	Units	WLA	Aug-2017		•	-
Camarillo Water Red	clamation	Plant (9AD_	CAMA)			
Chlorpyrifos	μg/L	0.0133	0.007	ND	0.004	ND
Diazinon	μg/L	0.1	ND	ND	ND	ND
Hill Canyon Wastew	ater Treat	ment Plant	(10D_HILL)			
Chlorpyrifos	μg/L	0.014	ND	ND	ND	ND
Diazinon	μg/L	0.1	ND	0.013	ND	ND
Simi Valley Water Q	uality Con	trol Plant (0	)7D_SIMI)			
Chlorpyrifos	μg/L	0.014	ND	0.006	0.004	0.004
Diazinon	μg/L	0.1	ND	ND	ND	ND

## Table 27. Toxicity, Chlorpyrifos, and Diazinon - POTWs

ND=constituent not detected at MDL.

Results in green type are below the applicable allocations.

				-			
Units	Final Daily Max WLA <sup>1</sup>	Final Monthly Avg WLA <sup>1</sup>	Final WLA <sup>1</sup>	Event 62 Dry Aug-20 17	Event 63 Dry Nov-2017	Event 64 Dry Feb-2018	Event 67 Dry May-2018
Reclamation	Plant (9AD_0	CAMA)					
µg/L		9.0		4.37	3.80	4.12	3.88
lbs/day <sup>2</sup>			0.54	0.13	0.10	0.12	0.11
µg/L				3.57	3.37	2.86	3.41
lbs/day <sup>2</sup>			0.2	0.10	0.09	0.09	0.09
lbs/month 4			0.015	0.0005	0.0003	0.00002	0.0002
tewater Treati	ment Plant (1	10D_HILL)					
µg/L		6.0		2.60	2.0	1.8	2.1
lbs/day <sup>2</sup>			0.7	0.17	0.12	0.11	0.15
µg/L				3.0	2.1	2.3	2.6
lbs/day <sup>2</sup>			0.3	0.19	0.13	0.14	0.18
lbs/month 4			0.022	0.026	0.025	0.022	0.028
r Quality Con	trol Plant (07	7D_SIMI)					
μg/L	31.0	30.5		6.6	4.1	4.9	4.5
µg/L	960	169		1.9	1.7	1.3	2.0
lbs/month <sup>3</sup>			0.031	0.0012	0.0013	0.0012	0.0021
	Reclamation μg/L μg/L lbs/day <sup>2</sup> μg/L lbs/month <sup>4</sup> tewater Treatu μg/L lbs/day <sup>2</sup> μg/L lbs/day <sup>2</sup> lbs/day <sup>2</sup> μg/L lbs/day <sup>2</sup> μg/L lbs/day <sup>2</sup>	UnitsDaily Max WLA1Reclamation Plant (9AD_0)µg/Lµg/Lµg/Llbs/day 2lbs/day 2lbs/day 2µg/Lµg/Lµg/Lµg/Lµg/Lµg/Lµg/Lµbs/day 2µg/L31.0µg/L31.0µg/L960	Daily Max WLA1         Monthly Avg WLA1           Reclamation         Hant (9AD_CAMA)           µg/L          9.0           lbs/day 2             µg/L             µg/L             µg/L             µg/L             lbs/day 2             lbs/month 4             µg/L          6.0           lbs/day 2             µg/L             µg/L             µg/L             µg/L             µg/L             µg/L             µg/L             µg/L             µg/L         31.0         30.5           µg/L         960         169	Daily Max WLA1         Monthly Avg WLA1         Final WLA1           Reclamation         Plant (9AD_CAMA)         WLA1           µg/L          9.0            lbs/day 2           0.54           µg/L           0.54           µg/L           0.54           µg/L           0.54           µg/L           0.2           lbs/day 2          0.015           tewater Treatment Plant (10D_HILL)          0.7           µg/L           0.7           µg/L           0.7           µg/L           0.7           µg/L           0.3           lbs/day 2           0.022           r Quality Control Plant (07D_SIMI)          0.022           µg/L         31.0         30.5            µg/L         960         169	UnitsFinal MonthlyFinal WLA1Dry Aug-20 17ReclamationPlant (9AD_CAMA)WLA1Dry Aug-20 17µg/L9.04.37lbs/day20.540.13µg/L3.570.13µg/L0.20.10lbs/day20.20.10lbs/day20.0150.0005tewater Treatment Plant (10D_HILL)μg/L0.70.17µg/L6.02.60lbs/day20.30.19µg/L0.30.19lbs/day20.30.19µg/L0.0220.026r Quality Control Plant (07D_SIMI)6.6µg/L31.030.56.6µg/L9601691.9	UnitsDaily Max Monthly VLA1Monthly Avg WLA1Final WLA1Dry Aug-2017Dry Aug-2017Reclamation Plant (9AD_CAMA)µg/L9.04.373.80lbs/day20.540.130.10µg/L0.540.130.10µg/L0.20.100.09lbs/day20.0150.00050.0003lbs/day20.0150.00050.0003lbs/day20.70.170.12µg/L0.30.190.13lbs/day20.0220.0260.025µg/L0.0220.0260.025r Quality Control Plant (OTD_SIMI)1.91.7	UnitsDaily Max MOMINIY Avg WLA1Final WLA1Dry MLA1Dry Aug-2017Dry Nov-2017Dry Feb-2018Reclamation Plant (9AD_CAMA)µg/L9.04.373.804.12lbs/day20.540.130.100.12µg/L0.540.130.100.12µg/L0.540.100.090.09lbs/day20.20.100.090.09lbs/day20.0150.00050.00030.0002lbs/month40.0150.00050.0030.0002tewater Treatment Plant (DD_HILL)2.602.01.8µg/L6.02.602.01.8µg/L0.30.190.130.14µg/L0.0220.0260.0250.022µg/L0.0220.0260.0250.022µg/L31.030.56.64.14.9µg/L9601691.91.71.3

Table 28. Metals - POTWs: Camarillo Water Reclamation Plant and Hill Canyon Wastewater Treatment Plant

1. Final wasteload allocations effective as of March 26, 2017 (R16-007).

2. During load calculation, the daily mean flow on the date of sampling was multiplied by the concentration of total copper or total nickel to yield the daily total copper or total nickel in pounds.

 For total mercury concentrations reported as not detected (ND); one half of the method detection limit was used to calculate the monthly loads
 During load calculation, the average monthly flow for each POTW was multiplied by the number of days in the month corresponding to when the sample was collected to get a total monthly flow. The total monthly flow was multiplied by the concentration of total mercury to yield the monthly total mercury load in pounds.

Results in green type are below the applicable allocations.

Results in **bold red type** exceed applicable wasteload allocation.

#### Table 29. Salts - POTWs

POTW & Constituent	Units	Monthly Avg Interim WLA	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18
Camarillo Water Re	eclamat	tion Plant (9A	D_CAM	<b>4)</b> <sup>1</sup>										
Boron	mg/L	N/A	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.6	0.5	0.5	0.5
Chloride	mg/L	216	223	229	200	209	200	201	193	193	204	205	201	215
Sulfate	mg/L	283	225	240	195	208	227	216	225	203	225	230	208	212
Total Dissolved Solids	mg/L	1012	1016	1064	936	902	1038	984	1024	1016	1024	1050	1024	910
Hill Canyon Waste	water T	reatment Plan	nt (10D_	HILL)										
Boron	mg/L	N/A	0.5	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Chloride	mg/L	189	171	164	154	150	130	135	131	137	158	130	128	140
Sulfate	mg/L	N/A	107	106	106	101	100	91	92	92	119	95	90	163
Total Dissolved Solids	mg/L	N/A	615	624	604	667	557	537	504	548	607	556	515	643
Simi Valley Water	Quality	Control Plant	(07D_S	IMI)										
Boron	mg/L	N/A	0.48	0.44	0.5	0.49	0.49	0.43	0.46	0.41	0.52	0.5	0.46	0.44
Chloride	mg/L	183	156	149	145	143	136	127	128	118	122	131	126	120
Sulfate	mg/L	298	195	185	180	181	182	181	180	187	198	240	215	182
Total Dissolved Solids	mg/L	955	769	693	647	710	660	664	640	515	666	741	723	628

N/A: "The 95<sup>th</sup> percentile concentration is below the Basin Plan objective so interim limits are not necessary."

Results in **bold red type** exceed applicable interim wasteload allocation.

Results in green type are below the applicable allocations.

Due to water conservation and alterations in the composition of the water supply available in the POTW service area, effluent salt concentrations have increased since the
adoption of the TMDL. The increased salts concentrations are being addressed through a Time Schedule Order that provides for higher TDS and sulfate interim limits and a stay
of interim limits for chloride (SWRCB WQO 2003-0019). TSO limits are as follows: TDS 1242 mg/L, sulfate 359 mg/L, and chloride 351 mg/L, all of which were met during the entire
monitoring year.

## EXCEEDANCE EVALUATION DISCUSSION

## OC Pesticides, Toxicity, Metals, Nutrients, and Salts

The data comparisons shown in **Table 20** through **Table 29** above demonstrate that for the most part, the CCW is meeting the applicable interim or final wasteload allocations and load allocations currently in effect for the Nutrients, OC Pesticides, Toxicity, Salts, and Metals TMDLs. While this report provides a comparison of water quality monitoring results to applicable TMDL allocations and targets, it does not reflect an assessment of compliance with individual permit or Conditional Waiver for Irrigated Agricultural Lands (Ag Waiver) TMDL requirements for the responsible parties. The following observations summarize the comparison of monitoring results with applicable TMDL allocations:

- 1. No exceedances of the interim wasteload allocations or load allocations for OCs or PCBs were observed at any location in the watershed. One exceedance of final wasteload allocations for toxaphene was observed at Camarillo Water Reclamation Plant.
- 2. Exceedances of numeric targets for Nitrate-N and Nitrate-N + Nitrite-N were observed at compliance sites in the following subwatersheds: Mugu Lagoon, Calleguas Creek, Revolon Slough, and Las Posas. Most of the exceedances occurred during dry events, but there were a total of six wet weather exceedances in Calleguas Creek, Revolon Slough, and Las Posas. No exceedances of final nutrient wasteload allocations were measured at any POTW compliance site.
- 3. There were four exceedances of the final chlorpyrifos allocations during wet weather, and one exceedance during dry weather. One exceedance of the diazinon final allocations occurred during wet weather. No exceedances of the final diazinon allocations were observed during dry weather. These exceedances were considered in concert with urban and agricultural land use data. There were no exceedances of the final wasteload allocations for chlorpyrifos or diazinon at any POTW.
- 4. There were four exceedances of the interim load allocation and interim wasteload allocation for total selenium measured during the dry weather sampling events at the 04\_WOOD site. 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. There were no exceedances of final wasteload allocations for metals or selenium at any POTW.
- 5. This monitoring year only one site exhibited significant survival toxicity in water. This occurred during a storm event at the Revolon Slough receiving water site. In regards to sediment toxicity, samples collected at 04\_WOOD, 02\_PCH, and two of the Mugu Lagoon sites (01\_BPT\_14 and 01\_SG\_74) exhibited survival toxicity in relation to the control.
- 6. Two Salts TMDL compliance sites met interim wasteload and load allocations for all salts constituents, 9B\_BARON and 07\_TIERRA. Another two sites met all interim allocations except for chloride, those were 03\_UNIV and 9A\_HOWAR. One final compliance site, 04\_WOOD, had exceedances for all the salts constituents except for chloride. This site generally met the interim load allocations but exceeded the interim wasteload allocations. POTWs are meeting interim salts wasteload allocations, with the

exception of Camarillo Water Reclamation Plant (WRP), which experienced exceedances of chloride and TDS. The exceedances of interim salts wasteload allocations for the Camarillo WRP have resulted from increased influent salt concentrations due to water conservation and a shift in the composition of the water supplied within the service area. Because the process for addressing salts is a watershed effort involving significant capital investments, the Camarillo WRP received an amended Time Schedule Order in December 2015 (R4-2011-0126-A03) to adjust the interim limits for TDS, sulfate and chloride (TSO limits: 1242 mg/L TDS, 359 mg/L sulfate, 351 mg/L chloride). As a result, the interim limits in the TMDL are not the currently applicable interim limits for the Camarillo WRP discharge and the TSO limits were met the entire monitoring year.

## Nutrients

Exceedances of numeric targets for Nitrate-N and Nitrate-N + Nitrite-N were observed in Mugu Lagoon, Revolon Slough, Beardsley Wash, Arroyo Las Posas, and Calleguas Creek. Nitrate-N exceedances are summarized in **Table 30** below. The table focuses on Nitrate-N results since Nitrate-N + Nitrite-N exceedances were caused by high Nitrate-N values. Nitrite-N was below the 1 mg/L target at all sites for every event.

Nitrogen TMDL	Event 62 Dry	Event 63 Dry	Event 64 Dry	Event 65 Wet	Event 66 Wet	Event 67 Dry
Compliance Sites	Aug-17	Nov-17	Feb-18	Mar-18	Mar-18	May-18
01_RR_BR	Yes	Yes	Yes	No	No	No
02_PCH	No	Yes	Yes	Yes	No	Yes
03_UNIV	No	No	No	No	No	No
04_WOOD	Yes	Yes	Yes	No	No	Yes
05_CENTR	Yes	Yes	Yes	Yes	No	Yes
06_UPLAND	NS	NS	NS	Yes	No	NS
07_HITCH	No	No	No	No	No	No
9B_ADOLF	No	No	No	No	No	No

Table 30.	Exceedances	of Nitrate-N	Numeric	TMDL	Target of	10 mg/L
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NR=not required, NS=no sample, dry

No signifies that monitoring results were below the Nitrate-N target during the monitoring event.

Yes signifies that monitoring results were above the Nitrate-N target during the monitoring event.

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 load allocations for agriculture became effective in July 2010. Under the 2016 Conditional Waiver (Order No. R4-2016-0143), agricultural dischargers have until October 14, 2025 to comply with the nitrogen load allocations. The Water Quality Management Plans developed by VCAILG for compliance with the Ag Waiver will specify steps and milestones that work towards achieving these load allocations through the implementation of management practices.

## Chlorpyrifos

Further examination of the chlorpyrifos exceedances at receiving water sites was needed to determine whether urban or agricultural dischargers were contributing. The final wasteload allocations for urban dischargers and final load allocations for agriculture are in effect and per the TMDL compliance is to be assessed in the receiving waters.

Monitoring data at urban land use sites from each subwatershed for which an exceedance was observed in the receiving water was compared to the wasteload allocation to determine if MS4 discharges significantly contributed to the exceedance. If the urban land use data were below the wasteload allocation, the MS4 dischargers were considered to be meeting allocations. If the urban land use data were above the wasteload allocation, the MS4 could be contributing to the exceedance in the receiving water.

As shown in **Table 22**, there were five exceedances of chlorpyrifos targets and one exceedance of diazinon targets at the receiving water sites. In three cases, urban land use data for the same event were less than the final MS4 wasteload allocation for chlorpyrifos (**Table 31**). In addition, further examination of the chlorpyrifos exceedances at receiving water sites was needed to determine whether agricultural dischargers were contributing. The final load allocations for urban dischargers are in effect and per the TMDL, compliance is to be assessed in the receiving waters.

Monitoring data at agricultural land use sites from each subwatershed for which an exceedance was observed in the receiving water was compared to the wasteload allocation to determine if agricultural discharges significantly contributed to the exceedance. If the agricultural land use data were below the load allocation, the agricultural dischargers were considered to be meeting allocations. If the agricultural land use data were above the load allocation, the agricultural dischargers could be contributing to the exceedance in the receiving water.

Sites Exceeding WLAs	Constituent	Event 62 Dry Aug-17	Event 63 Dry Nov-17	Event 64 Dry Feb-18	Event 65 Wet Mar-18	Event 66 Wet Mar-18	Event 67 Dry May-18
01_RR_BR	Chlorpyrifos					NA <sup>1</sup>	
04_WOOD	Chlorpyrifos			No	No	No	
06_UPLAND	Chlorpyrifos				NA <sup>1</sup>		
06_UPLAND	Diazinon				NA <sup>1</sup>		

 Table 31. Compliance and Land Use Sites Comparison to Determine MS4 Chlorpyrifos WLA

 Compliance

No= none of the MS4 land use site for the subwatershed exceeded the MS4 wasteload allocation during the monitoring event. Yes=the MS4 land use site for the subwatershed exceeded the MS4 wasteload allocation during the monitoring event.

1. There are no urban land use monitoring sites in these reaches.

Blank cells indicate that a wasteload allocation exceedance did not occur at the compliance monitoring site during a particular event.

 Table 32. Compliance and Land Use Sites Comparison to Determine Ag Chlorpyrifos LA

 Compliance

Sites Exceeding WLAs	Constituent	Event 62 Dry Aug-17	Event 63 Dry Nov-17	Event 64 Dry Feb-18	Event 65 Wet Mar-18	Event 66 Wet Mar-18	Event 67 Dry May-18
01_RR_BR	Chlorpyrifos					Yes	
04_WOOD	Chlorpyrifos			No	No	No	
06_UPLAND	Chlorpyrifos				No		
06_UPLAND	Diazinon				No		

Yes=the Ag land use site for the subwatershed exceeded the Ag load allocation during the monitoring event.

1. There are no urban land use monitoring sites in these reaches.

Blank cells indicate that a load allocation 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 wasteload allocation 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 33** below.

		Dry Weather Events									
Site ID	Use	Inter	rim	62	63	64	67				
		WLA <sup>1</sup>	Aug- 17	Nov-17	Feb-18	May- 18	May-17				
04_WOOD	RW	13	6	26.87	22	13.7	17.4				
04D_WOOD	Ag		6	NS	3.49	3.90	1.68				
05D_SANT_VCWPD	Ag		6	64.85	43.9	48.1	38.3				
04D_VENTURA	Urban	13		0.71	0.46	0.61	0.53				

### Table 33. Selenium Monitoring Data (ug/L) in the Revolon Slough Subwatershed

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; Urban - Urban

NS – Not sampled, dry

As noted in the table above, high levels of selenium were also observed at 05D\_SANT\_VCWPD, one of the agricultural land use sites in the Revolon Slough subwatershed. As discussed in the TMDL, a primary source of selenium in this area is considered to be rising groundwater levels and the interim allocations were to be considered in this context.

## Salts

A summary of monitoring results for total dissolved solids, sulfate, and boron at sites in the Revolon Slough subwatershed are shown in **Table 34** through **Table 36** and chloride in the Conejo Creek watershed in **Table 37** below.

Mean monthly dry weather TDS, sulfate, and boron concentrations in Revolon Slough at 04\_WOOD exceeded their respective interim MS4 WLAs during all twelve months of the monitoring period. However, mean monthly dry weather TDS, chloride, and sulfate concentrations in Revolon Slough at 04\_WOOD did not exceed their respective LAs during the monitoring period. Mean monthly dry weather boron concentrations exceeded load allocations in Revolon Slough at 04\_WOOD on two occasions. Site 04D\_WOOD represents agricultural discharge water quality in the Revolon Slough subwatershed. At this site, no exceedances of the interim LAs occurred. Concentrations of salts at 04D\_VENTURA, which is an urban land use site in the upper Revolon Slough watershed, were consistently below the interim MS4 WLAs for TDS, sulfate, and boron.

Mean monthly dry weather chloride concentrations in Conejo Creek at 9A\_HOWAR exceeded the interim LA and interim MS4 WLA during five months of the monitoring period. However, mean monthly dry weather TDS and sulfate concentrations in Conejo Creek at 9A\_HOWAR did not exceed their respective LAs or WLAs during the monitoring period. Site 9BD\_ADOLF

represents urban discharge water quality in the Conejo Creek subwatershed. At this site, exceedances of the interim LA occurred during all four sampling events. The agricultural site 9BD\_GERRY for this subwatershed had no flow during the four dry weather sampling events.

Mean monthly dry weather chloride concentrations in Calleguas Creek at 03\_UNIV exceeded the interim LA and interim MS4 WLA during nine months of the monitoring period. However, there are no land use monitoring sites located in Reach 3 of Calleguas Creek to compare land use water quality data to receiving water quality data.

Site ID	Use	Inter Lim		Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18
		WLA	LA												
04_WOOD 1	RW	1720	3995	3444	3586	3139	3271	3334	3379	3592	3538	3459	3550	3493	3590
04D_WOOD <sup>2</sup>	Ag		3995		NS			2440			2250			1340	
04D_VENTURA <sup>2</sup>	Urban	1720			1490			560			740			780	

#### Table 34. Total Dissolved Solids Monitoring Data (mg/L) in Revolon Slough

NS=no sample, dry

Data presented are monthly means
 Data presented are quarterly dry weather grabs

Results in **bold type** exceed applicable interim wasteload allocation or interim load allocation.

#### Table 35. Sulfate Monitoring Data (mg/L) in Revolon Slough

Site ID	Use	Inte Lim		Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18
		WLA	LA		-									-	
04_WOOD 1	RW	1289	1962	1785	1859	1627	1696	1728	1752	1863	1835	1793	1840	1811	1861
04D_WOOD <sup>2</sup>	Ag		1962		NS			1330			744			535	
04D_VENTURA <sup>2</sup>	Urban	1289			486			146			181			196	

NS=no sample, dry

1. Data presented are monthly means

2. Data presented are quarterly dry weather grabs

Results in **bold type** exceed applicable interim wasteload allocation or interim load allocation.

#### Table 36. Boron Monitoring Data (mg/L) in Revolon Slough

Site ID	Use			Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18
		WLA	LA			-							-	-	
04_WOOD 1	RW	1.3	1.8	1.8	1.8	1.6	1.7	1.7	1.7	1.9	1.8	1.8	1.8	1.8	1.9
04D_WOOD <sup>2</sup>	Ag		1.8		NS			1.3			1.1			0.66	
04D_VENTURA <sup>2</sup>	Urban	1.3			0.64			0.31			0.37			0.4	

NS=no sample, dry

1. Data presented are monthly means

2. Data presented are quarterly dry weather grabs

Results in **bold type** exceed the applicable interim wasteload allocation or interim load allocation

Site ID	Use	Inter Lim		Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18
		WLA	LA												
9A_HOWAR <sup>1</sup>	RW	230	230	234	224	220	222	234	236	223	226	239	229	223	238
9BD_GERRY <sup>2</sup>	Ag	230			NS			NS			NS			NS	
9BD_ADOLF <sup>2</sup>	Urban		230		552			467			575			486	

#### Table 37. Chloride Monitoring Data (mg/L) in Conejo Creek

NS=no sample, dry

Data presented are monthly means
 Data presented are quarterly dry weather grabs
 Results in **bold type** exceed applicable interim wasteload allocation or interim load allocation.

## **Revisions and Recommendations**

The QAPP specifies that upon the completion of each CCWTMP annual report, revisions to standard procedures will be made, including: site relocation, ceasing monitoring efforts and/or deleting certain constituents from sample collection. An updated QAPP was submitted in December 2014 that incorporated the proposed revisions and recommendations included in the previous six CCWTMP annual reports. Additional modifications that reflect the most current lab methods and procedures for the field conditions were also part of the QAPP update process. Monitoring for the 2017-2018 monitoring year was conducted per the revised QAPP.

In August 2018, during the first monitoring event of year 11, construction activities were observed at the monitoring site 04D\_VENTURA. This is an urban land use site in the City of Camarillo. It was determined that a stretch of the stormwater channel is being enclosed directly up and downstream of the existing monitoring location. The site is being considered for relocation downstream, but still within the City's urban area. Once the site is selected, details will be provided to the Regional Water Board via separate submittal.

The Stakeholders will be submitting TMDL receiving water data to the California Environmental Data Exchange Network (CEDEN) going back to the beginning of the monitoring program in 2008. TMDL receiving water monitoring data will continue to be uploaded for future monitoring events, as well.