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**VENTURA COUNTY AGRICULTURAL
IRRIGATED LANDS GROUP (VCAILG)**

Water Quality Management Plan

DRAFT

submitted to:

**LOS ANGELES REGIONAL WATER QUALITY
CONTROL BOARD**

prepared by:

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On behalf of the:

**VENTURA COUNTY AGRICULTURAL
IRRIGATED LANDS GROUP (VCAILG)**



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Appendix A. Grower Survey of Best Management Practices

Appendix B. Maps Showing Relationship Between Responsibility Areas and HUC-12 Watersheds

Appendix C. Maps of Enrolled and Not Enrolled Agricultural Parcels by Responsibility Area

Appendix D. VCAILG Members' Status in Completing Education Requirements

Appendix E. Parcel List Detailing VCAILG Membership Status, BMP Survey Completion and Payment of Fees

Appendix F. Outreach Handouts

GIS shapefiles organized as follows:

- HUC Boundary Shapefile
- Monitoring Site Drainage Area Shapefile
- Monitoring Site Shapefile
- Parcels with Membership Status Shapefile
- Responsibility Area Boundary Shapefile

Document Overview

The 2016 *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Agricultural Lands within the Los Angeles Region* (“Conditional Waiver”, Order No. R4-2016-0143) includes the requirement for discharger groups to develop a water quality management plan (WQMP) to address exceedances of water quality benchmarks. The WQMP is an iterative process which includes plans for additional or upgraded management practices to achieve water quality benchmarks. This is the second WQMP submitted for compliance with the 2016 Conditional Waiver, on behalf of the Ventura County Agricultural Irrigated Lands Group (VCAILG). The first WQMP for compliance with the 2016 Conditional Waiver was submitted in April 2017 and revised to address Regional Board comments in October 2017. The plan is based on water quality monitoring data from 2007 through June 2018.

WAIVER REQUIREMENTS FOR THE SECOND 2016 CONDITIONAL WAIVER WQMP

Appendix 3 of the Conditional Waiver details the monitoring and reporting requirements for any Ventura County discharger group, with section 2 outlining WQMP requirements. The major elements are as follows:

- Summary of Existing Conditions (organized by monitoring site) and to include: maps, graphs of constituents that exceed the exceedance threshold for the associated water quality benchmark, a report of the management practices currently implemented, a comparison of the graphs/exceeded constituents to the level of management practice implementation and a pesticide use evaluation.
- Proposal for Additional or Upgraded Management Practices
- Outreach Plan

Beginning with the second WQMP, Source Investigations are required to discern patterns in discharge quality, evaluate management practice effectiveness, and identify specific crops and practices to be prioritized for outreach and management practice implementation. The ultimate result of the Source Investigation Work Plan implementation and Source Investigation Report is to inform the next WQMP Outreach Plan; providing greater detail in how the VCAILG directs its members to address specific water quality constituents. The Source Investigation Work Plan was submitted October 1, 2018 and the VCAILG will begin implementation as soon as possible after Executive Officer approval, no later than January 2019. Therefore, the Source Investigation efforts will inform the priorities and BMP implementation goals in the third WQMP.

As for this second WQMP, water quality benchmark exceedances and changes in BMP implementation between the first and second management practice survey were used to set schedules and goals while the more specific Source Investigation work is taking place.

WQMP STRUCTURE

To meet the requirements of a WQMP, this plan is organized into the following sections:

- Introduction
- Group Membership and Setting

- Description of VCAILG governance and membership at the time when management practice surveys were completed to produce this WQMP; general overview of agriculture in Ventura County.
- WQMP Development Process
 - Responsibility areas that associate VCAILG monitoring sites with pertinent HUC-12 watersheds were defined in the first WQMP, but the information is included here for reference.
- Summary of Existing Conditions by Responsibility Area
 - General map of each responsibility area associated with a VCAILG monitoring site. More detailed maps with HUC-12 watershed boundaries and showing enrolled and non-enrolled agricultural parcels can be found in Appendix B and C, respectively.
 - Best Management Practice (BMP) survey results from December 2016/January 2017 and May/June 2018 by responsibility area.
 - Exceedance graphs and summary table of constituent exceedances for each responsibility area.
 - Proposal for additional management practices presented as tables that bring together benchmark exceedances, applicable BMPs to address those exceedances, current level of BMP adoption, and designation of whether additional implementation of each BMP is being recommended.
 - Pesticide use evaluation for the three current use pesticides with water quality benchmarks
- Schedule
 - Revised schedule with target adoption rates for applicable BMPs in each responsibility area for this Conditional Waiver term
- Outreach Plan
 - Description of VCAILG's approach to informing its members of the benchmark exceedances within their responsibility area and the applicable BMPs required for implementation.
- Explanation of Compliance List Appendices
 - The Conditional Waiver requires that the compliance status of VCAILG members be reported as part of the WQMP. This includes membership in VCAILG and payment of fees, survey completion, and education credits.

Introduction

On April 14, 2016, the Los Angeles Regional Water Quality Control Board adopted the *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands within the Los Angeles Region* (“Conditional Waiver”, Order No. R4-2016-0143). The purpose of the Conditional Waiver is to assess the effects of, and control discharges from irrigated agricultural lands in Los Angeles and Ventura Counties, including irrigation return flows, flows from tile drains, and storm water runoff. These discharges can affect water quality by transporting nutrients, pesticides, sediment, salts, and other pollutants from cultivated fields into surface waters, potentially impairing designated beneficial uses. Owners and operators of agricultural lands in Ventura and Los Angeles Counties must comply with provisions contained in the Conditional Waiver or be regulated under other Regional Board programs. The 2016 Order was the third iteration of the Conditional Waiver adopted for the Los Angeles Region.

The Conditional Waiver allows individual landowners and growers to comply with its provisions by working collectively as a Discharger Group, or as an individual. A Discharger Group is defined by the Conditional Waiver as “any group of dischargers and/or organizations that forms to comply with this Order. Discharger Groups can be, but are not limited to, organizations formed on a geographic basis or formed with other factors in common such as commodities.” The primary purpose of allowing Discharger Groups is to encourage collaboration on monitoring and reporting and to increase the effectiveness of management practices throughout a watershed to attain water quality benchmarks. Those landowners and growers choosing to comply with the Conditional Waiver as a Discharger Group must signify by submitting a Group Notice of Intent and by developing a Discharger Group monitoring program.

To assist agricultural landowners and growers that farm within the boundaries of Ventura County, various agricultural organizations, water districts and individual farmers joined together in 2006 to form the Ventura County Agricultural Irrigated Lands Group (VCAILG), which is intended to act as one unified “Discharger Group” for those agricultural landowners and growers that wish to participate. A Notice of Intent (NOI) to comply was submitted to the Regional Board by the VCAILG under the two previous Conditional Waivers and on October 14, 2016 an NOI for compliance with the 2016 Conditional Waiver was submitted. The NOI included the VCAILG membership roster, as well as the required Quality Assurance Project Plan (QAPP) and Monitoring and Reporting Program Plan (MRP), which detail the water quality monitoring and reporting procedures being conducted in compliance with the terms of the Conditional Waiver.

Following the completion of each monitoring year, VCAILG submits Annual Monitoring Reports (AMR) that provide a detailed summary of activities conducted by the VCAILG during the past year, including, among other things, a discussion of monitoring results that exceeded water quality benchmarks. The most recent AMR is being submitted concurrently to this WQMP and reports on data collected between July 2017 and June 2018.

The data compilation and identification of benchmark exceedances in the AMR, lends itself to the work of developing a Water Quality Management Plan (WQMP), which serves to evaluate long-term water quality in the context of on-farm management practices, and develop a plan to implement additional and upgraded practices in order to achieve water quality benchmarks, as well as the approach of VCAILG to inform and provide outreach to its members regarding the outcome and need for additional management practices. This document serves as the second WQMP to meet the requirements of the 2016 Conditional Waiver and presents water quality

monitoring data collected from 2007 to 2018, after considering exceedances for the most recent three monitoring years.

Group Membership and Setting

VCAILG oversight is provided by a 17-member Steering Committee and a 5-member Executive Committee (also members of the Steering Committee). Steering Committee membership consists of agricultural organization representatives, agricultural water district representatives, landowners and growers from the three primary watersheds in Ventura County (Calleguas Creek, Santa Clara River, and Ventura River). Steering Committee membership also represents the major commodities grown in Ventura County (strawberries, nursery stock, citrus, vegetables, and avocados). The Steering Committee roster is presented in Table 1.

Because the VCAILG is an unincorporated organization, the Farm Bureau of Ventura County acts as the responsible entity for the collection of funds, contracting with consultants, and other fiscal and/or business matters that require an organization with some form of tax status; the Farm Bureau is a non-profit 501(c)(5) organization.

Table 2 contains a summary of the VCAILG membership statistics, including the number of landowners and parcels enrolled, as well as irrigated acreage enrolled in each watershed. Per the October 2018 membership rolls, VCAILG represents 1,469 Ventura County agricultural landowners and 83,259 irrigated acres. According to the Ventura County Assessor's records, there are an estimated 393 landowners not enrolled in VCAILG. Therefore, VCAILG represents 79 percent of agricultural landowners in Ventura County covering approximately 90 percent of the estimated irrigated acreage. Current membership status by parcel is detailed in Appendix E.

Table 1. VCAILG Steering Committee Membership

Member, Organization ¹	Crop(s) Represented	Watershed(s) Represented
Edgar Terry, Terry Farms, Inc. (Committee Chair)	Strawberries, Vegetables	Calleguas Creek, Santa Clara River
Jared Bouchard, Pleasant Valley Co. Water District*	N/A	N/A
Jonathan Chase, Hailwood, Inc.	Strawberries, Vegetables	Calleguas Creek
Robert Crudup, BrightView Tree Co.	Nursery Stock	Santa Clara River
Paul DeBusschere, DeBusschere Ranch	Strawberries, Avocados	Calleguas Creek
Mike Friel, Laguna Grove Service	Citrus	Calleguas Creek
Jurgen Gramckow, Southland Sod Farms	Sod, Hay, Oats, Vegetables	Calleguas Creek, Santa Clara River, Ventura River
Gus Gunderson, Limoneira Company	Avocado, Citrus	Santa Clara River
Craig Held, Rancho Gemelos/Held Ranches	Orchards	Santa Clara River
John Krist, Farm Bureau of Ventura County*	N/A	N/A
John Mathews, Arnold, Bleuel, LaRochelle, et al.*	N/A	N/A
Doug O'Hara, Somis Pacific Ag Management Company	Avocado, Citrus	Calleguas Creek, Santa Clara River
Kelle Pistone, Assoc. of Water Agencies of Ventura County*	N/A	N/A
Rob Roy, Ventura County Agricultural Association*	N/A	N/A
Mike Sullivan, Essick Farm Management	Orchards	Ventura River
Craig Underwood, Underwood Ranches	Avocado, Citrus, Vegetables	Calleguas Creek, Santa Clara River
Jason Vis, Lloyd Butler Ranch	Avocado, Citrus	Calleguas Creek, Santa Clara River

N/A = Not Applicable

1. An asterisk denotes Executive Committee membership

Table 2. VCAILG Membership Statistics as of October 2018

Watershed	Landowner Count	Parcel Count	Irrigated Acres
Calleguas Creek	726	1,542	43,901
Oxnard Coastal	65	126	4,558
Santa Clara River	533	1,272	29,819
Ventura River	209	413	4,982
<i>Total</i>	<i>1,533</i>	<i>3,353</i>	<i>83,259</i>

1. There are 1,469 unique landowners enrolled, a number of whom own property in more than one watershed.

IRRIGATED AGRICULTURE IN VENTURA COUNTY

Ventura County covers 1,843 square miles (approximately 1.2 million acres) with 43 miles of coastline (Figure 1). The Pacific Ocean forms its southwestern boundary, with Los Angeles County to the southeast, Kern County to the north and Santa Barbara County to the west. The Los Padres National Forest accounts for the northern half of the county, with residential, agricultural and business uses in the southern portion. Of the estimated 293,549 acres of agricultural land in the county, there are approximately 92,250 acres of irrigated cropland. The Calleguas Creek Watershed contains the highest number of irrigated acres (approximately 50,000), followed by the Santa Clara River Watershed (approximately 32,000), the Oxnard Plain and Coastal Watersheds (approximately 5,400), and finally the Ventura River Watershed (approximately 4,800).¹

Agriculture is a major industry in Ventura County, generating over \$2.1 billion in gross sales for 2017, placing the county 8th in a statewide ranking of California's 58 counties.² This gross value is a decrease of 0.4% from 2016.³ Strawberries were the number one grossing crop type, lemons were the second highest grossing crop, and celery was the third highest grossing crop in Ventura County in 2017. Table 3 lists Ventura County's ten leading crops in gross value for 2017. Characteristics of each of the three main watersheds in Ventura County are discussed in more detail in the following sections.

¹ Estimates of irrigated agricultural acreage by watershed are based on the VCAILG membership database and also includes estimated irrigated acreage for parcels not enrolled in VCAILG.

² California Department of Food and Agriculture. *California Agricultural Statistics Review 2016-2017*. Agricultural Statistics Overview.

³ Ventura County Agricultural Commissioner. *Ventura County's Crop and Livestock Report 2017*. July 31, 2018.

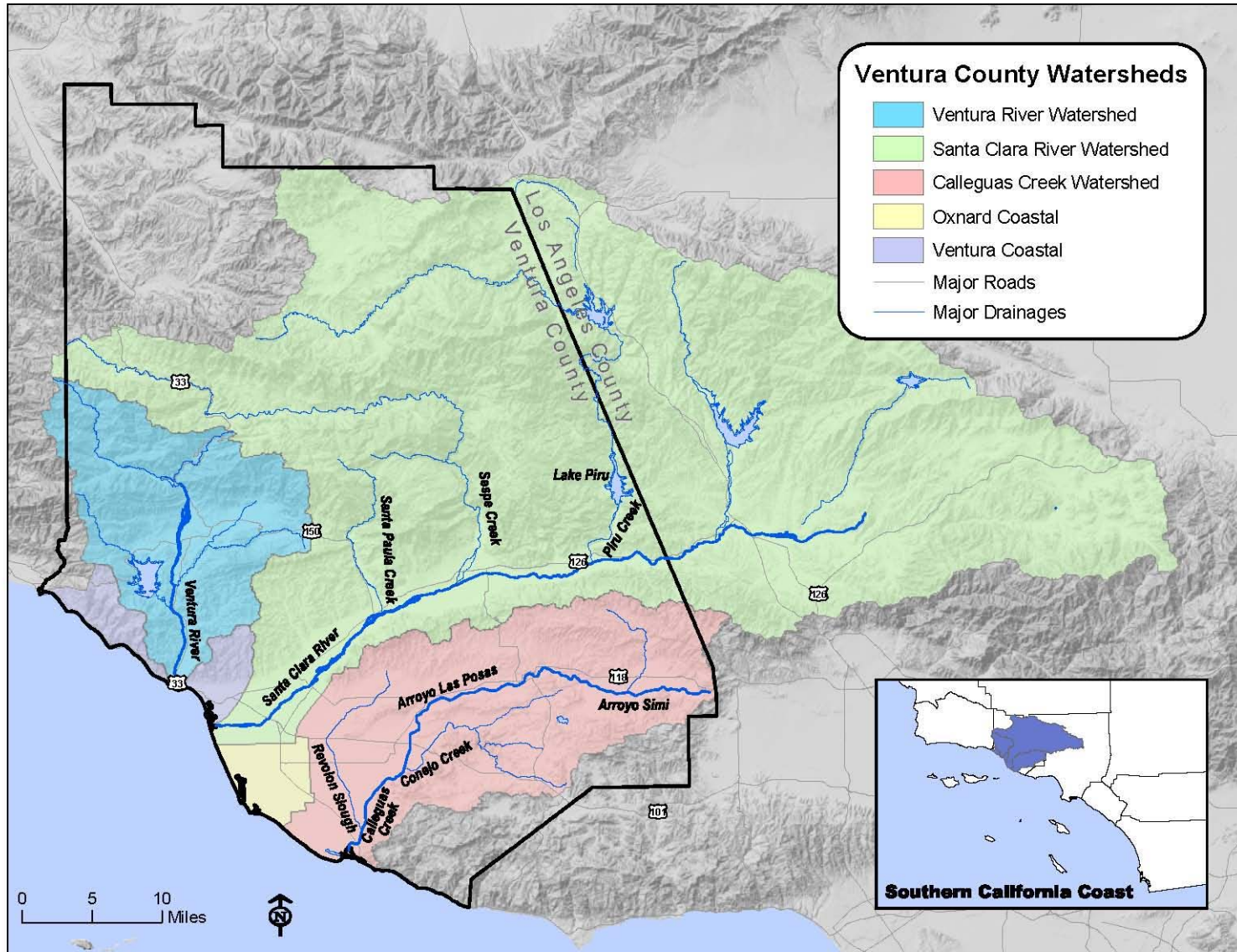


Figure 1. Ventura County Watersheds

Table 3. Ventura County’s Leading Agricultural Commodities–2017

Commodity	Gross Value (\$)
1. Strawberries	654,312,000
2. Lemons	258,602,000
3. Raspberries	210,408,000
4. Nursery Stock	197,969,000
5. Celery	166,725,000
6. Avocados	118,680,000
7. Peppers	49,904,000
8. Tomatoes	47,507,000
9. Cut Flowers	45,809,000
10. Kale	33,919,000

Source: Ventura County Agricultural Commissioner. *Ventura County’s Crop and Livestock Report 2017*. July 31, 2018.

Calleguas Creek Watershed

The Calleguas Creek Watershed (Figure 2) is approximately 30 miles long, 14 miles wide, and drains an area of approximately 343 square miles or 219,520 acres. Cities within the watershed include Camarillo, Thousand Oaks, Moorpark, and Simi Valley. 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 main waterbodies in the watershed include Calleguas Creek, Revolon Slough, Beardsley Channel, Conejo Creek, Arroyo Santa Rosa, Arroyo Las Posas and Arroyo Simi. All of these waterbodies appear on the federal 303(d) list of impaired waterbodies, triggering the requirement to develop Total Maximum Daily Loads (TMDLs) for specified pollutants identified as causing impairments. Runoff from irrigated agricultural lands has been identified as one of the sources of these water quality impairments for specified pollutants. To date, TMDLs have been adopted for Nitrogen Compounds, Trash, Organochlorine Pesticides, Polychlorinated Biphenyls (PCBs) and Siltation, Toxicity, Metals and Selenium, and Salts.

At the northwest end of the Oxnard Plain lies a small coastal watershed that drains to McGrath Lake. A TMDL has been adopted to address pesticides and PCBs impairments in the lake. This TMDL applies to the area within the Oxnard Coastal watershed that drains to the Central Ditch at Harbor Boulevard.

Avocados and citrus crops such as lemons and oranges are typically grown in flat or gently sloping foothill areas in the watershed. Agricultural land located on the Oxnard Plain is planted predominately in a wide variety of truck crops, including strawberries, raspberries, peppers, green beans, celery, and onions, as well as sod farms and nurseries. Many farms located in the watershed grow multiple crops during a single calendar year. This multi-cropping technique is most common in the lower parts of the watershed, adjacent to Revolon Slough and Lower Calleguas Creek. Figure 2 shows the distribution of crop types throughout the Calleguas Creek and Oxnard Coastal Watersheds.

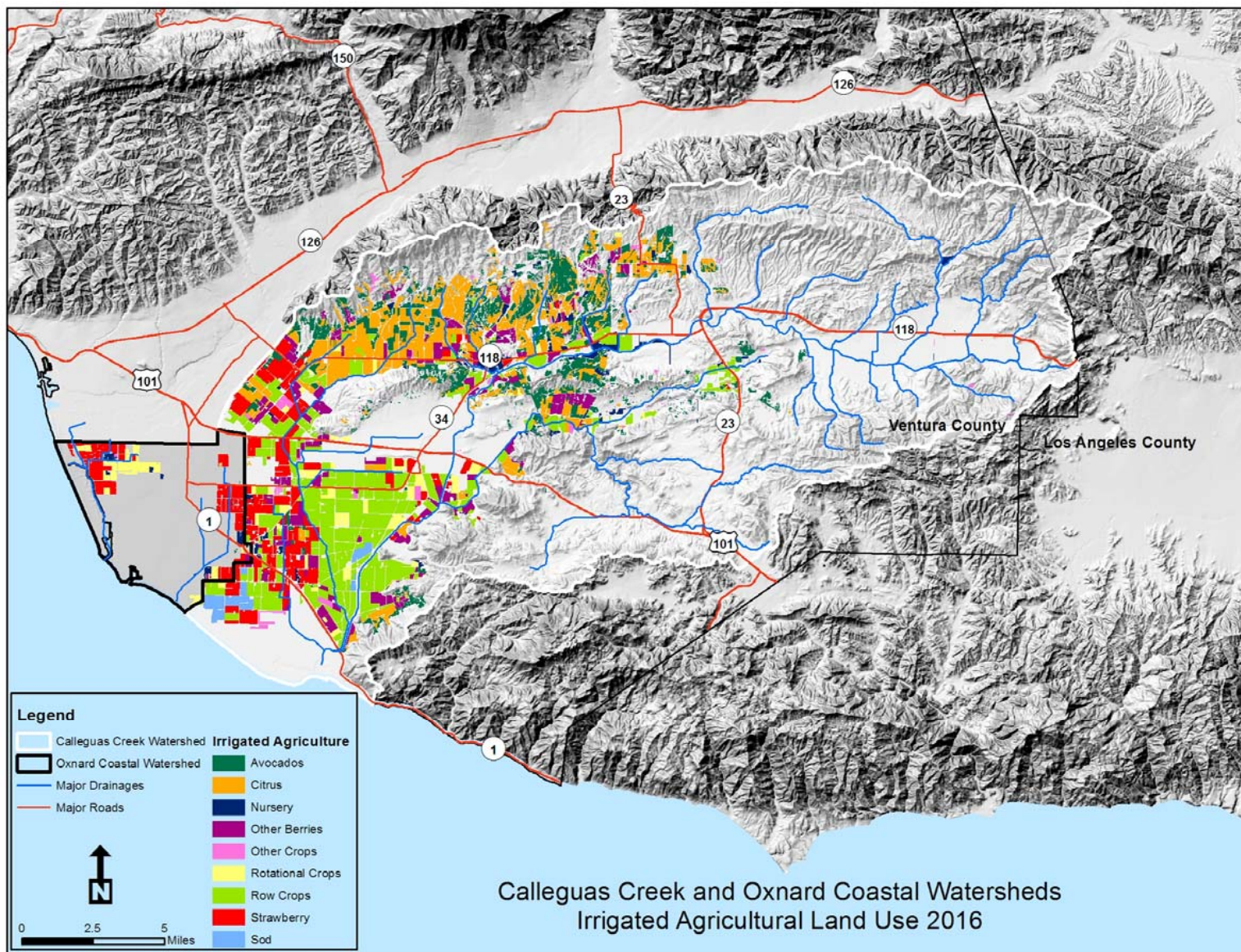


Figure 2. Calleguas Creek and Oxnard Coastal Watersheds Agricultural Land Use

Santa Clara River Watershed

The Santa Clara River is the largest river system in southern California remaining in a relatively natural state. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard. The Santa Clara River and tributary system has a watershed area of about 1,634 square miles (Figure 3). Cities within the watershed include Ventura, Santa Paula, Fillmore, Piru, Santa Clarita, and Newhall. Within Ventura County, major tributaries the Sespe, Piru, and Santa Paula Creeks. Approximately 60 percent of the watershed is located in Ventura County. The most prevalent land use in the 500-year flood plain of the Santa Clara River is agriculture (62 percent), followed by industry (22 percent). Row crops and orchards are planted across the valley floor primarily in Ventura County and extend up adjacent slopes.

Several Santa Clara River reaches and tributaries appear on the federal 303(d) list of impaired waterbodies due to salts, nitrogen compounds, bacteria, and pesticides. TMDLs have been adopted for Nitrogen Compounds (upper and lower Santa Clara River reaches), Chloride (Reach 4B) and Bacteria (Estuary and Reaches 3, 5, 6, and 7). A TMDL for toxaphene in the Santa Clara River Estuary was incorporated in the 2010 Conditional Waiver as a single regulatory action and is also included in the 2016 Conditional Waiver.

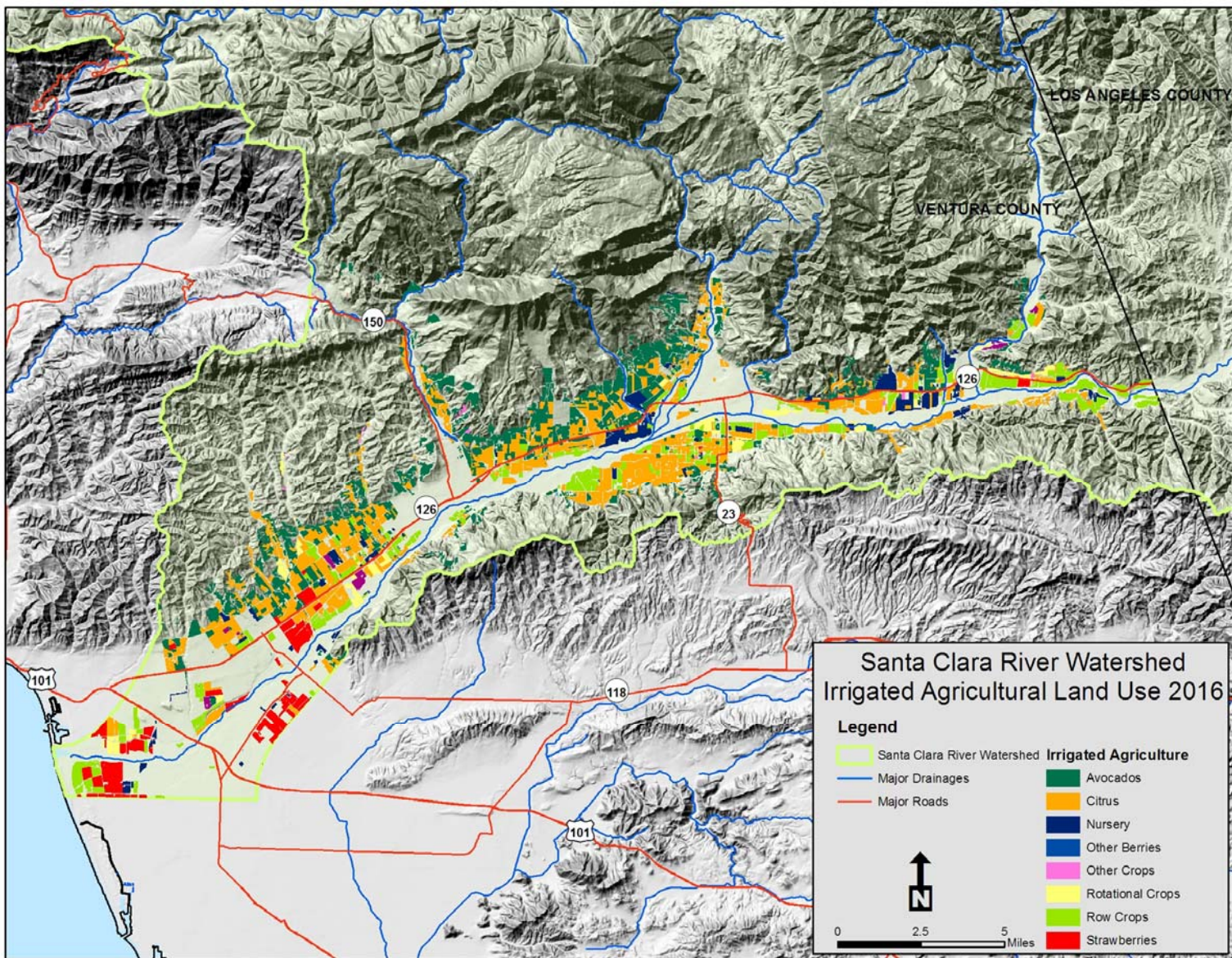


Figure 3. Santa Clara River Watershed Agricultural Land Use

Ventura River Watershed

The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles, which is located within the western Transverse Ranges and is 31 miles long from upper Matilija Canyon to the Pacific Ocean (Figure 4). From the upper slopes of the Transverse Ranges, the surface water system in the Ventura River Watershed generally flows in a southerly direction to the estuary, located at the mouth of the Ventura River. Main tributaries in the watershed include Matilija Creek, Coyote Creek and San Antonio Creek. The City of Ojai and communities of Meiners Oaks, Oak View and Casitas Springs are located in the watershed, with surrounding suburban and agricultural areas comprising the Ventura River, Santa Ana, and Upper Ojai Valleys. Portions of the City of San Buenaventura border the lower reaches of the Ventura River. Irrigated agriculture constitutes approximately five percent of land uses in the watershed, with avocado and citrus as the predominant crops grown.

Several Ventura River reaches and tributaries appear on the federal 303(d) list of impaired waterbodies due to Algae/Eutrophic Conditions, Bacteria, Pumping/Water Diversion, and Trash. The Ventura River Estuary Trash TMDL became effective in 2008. A TMDL for algae, eutrophic conditions, and nutrients became effective in July 2013 (Algae TMDL). In its approval notice for the Algae TMDL, the USEPA determined that the Algae TMDL addresses the beneficial use impairments on the 303(d) list identified as being caused by pumping and water diversions. Consequently, a separate TMDL for pumping and water diversions is not expected to be adopted.

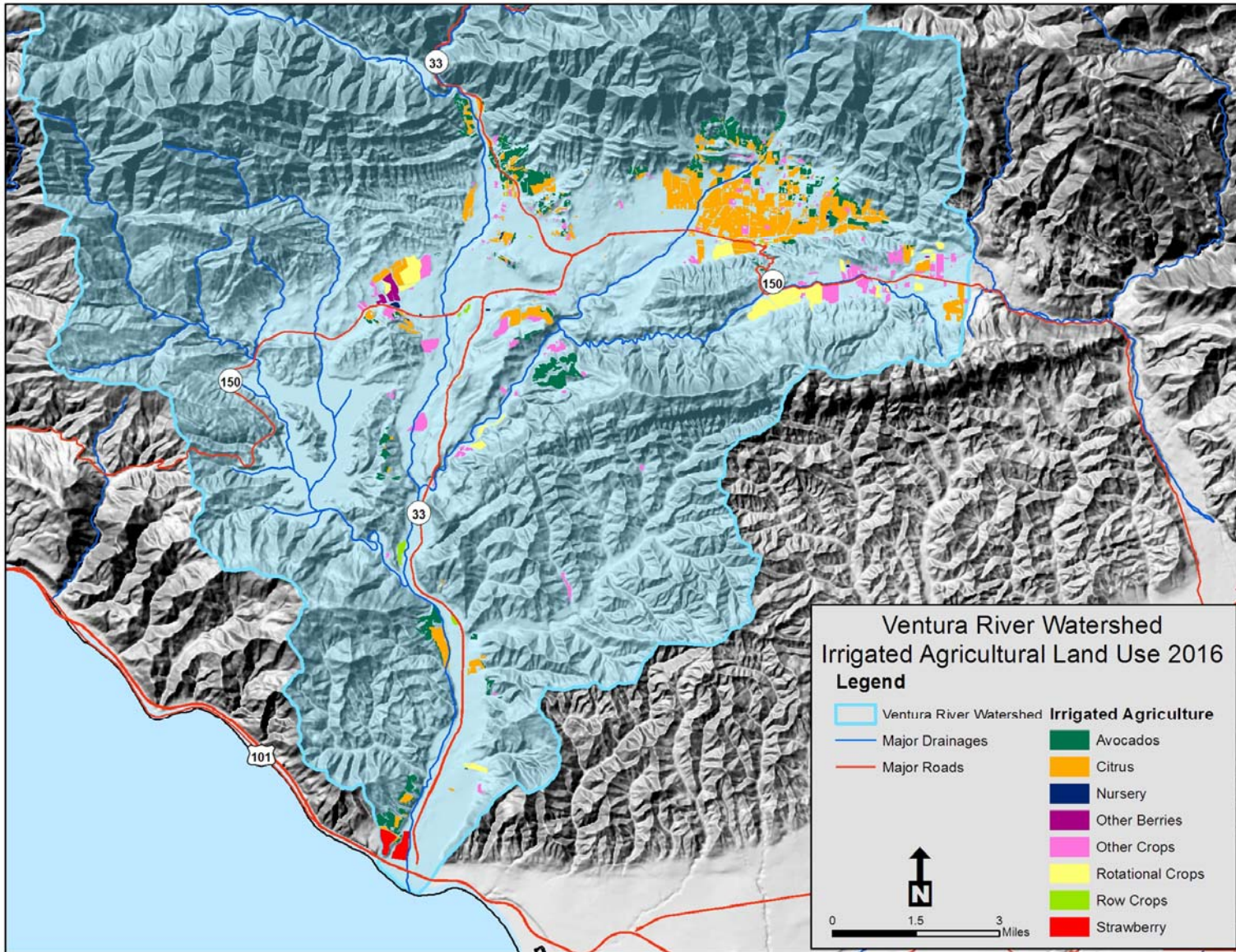


Figure 4. Ventura River Watershed Agricultural Land Use

WQMP Development Process

This WQMP is an update to the first WQMP developed under the 2016 Conditional Waiver. Initial development involved three distinct processes that joined together to result in area specific best management practice (BMP recommendations) in order to meet water quality benchmarks by their specified compliance dates. As before, this WQMP is an adaptive management plan which will be revised and modified with each iteration as additional survey and monitoring data is available and as additional BMPs are implemented by VCAILG members. The three processes of assigning responsibility areas (completed during the first WQMP), compiling management practice surveys (done for both WQMPs with this iteration showing side-by-side results), and evaluating benchmark exceedances (revised in this WQMP to include more recent data) are described below.

RESPONSIBILITY AREAS

Appendix 3, Section 2.a.i. of the Conditional Waiver specifies:

“The WQMP shall be organized by monitoring site. For each monitoring site provide:

i. A map showing the monitoring site, the land area draining to the monitoring site, the HUC-12 watershed in which the monitoring site is located, any adjacent HUC-12 watersheds that do not include a monitoring site⁶, and the enrolled and non-enrolled irrigated agricultural parcels with the HUC-12 watersheds.....

⁶Discharger groups shall propose a method for associating adjacent HUC-12 watersheds with monitoring sites in the WQMP.” (emphasis added)

HUC-12 watersheds (hereinafter “HUC12s”) with monitoring sites were associated with adjacent HUC12s by defining twenty “responsibility areas,” covering all of Ventura County, which resulted in associations between HUC12s, VCAILG monitoring sites, TMDL compliance sites and TMDL Ag Land Use Sites (in the CCW), and TMDL assessment sites (for TMDLs outside of the CCW). Responsibility areas consist (with minor variations) of one or more HUC12s, or partial HUC12s - and were designed to be consistent with drainage patterns, regulatory reaches and TMDL responsibilities. In three cases, a HUC12 contained land that drains to different regulatory reaches. This meant that not all of the growers in those HUC12s are responsible for water quality outcomes at the same monitoring sites and the growers might also have different TMDL obligations. In these three cases, ArcGIS was used to divide the HUC12 into partial HUC12s to separate the land areas draining to different regulatory reaches, as follows:

The “Revolon Slough-Calleguas Creek” HUC12 was divided into two partial HUC12s:

- “Revolon Slough-Calleguas Creek (Revolon)” encompassing land draining to Revolon Slough (Reach 4)
- Revolon Slough-Calleguas Creek (Calleguas)” encompassing land draining to Calleguas Creek (Reaches 2 and 3)

The “Mugu Lagoon” HUC12 was divided into two partial HUC12s:

- “Mugu Lagoon-South” encompassing land draining to Mugu Lagoon
- “Mugu Lagoon-North” encompassing land draining to Beardsley Wash

The “Las Posas Arroyo” HUC12 was divided into two partial HUC12s:

- “Las Posas Arroyo-Reach 6” encompassing land draining to Arroyo Las Posas (Reach 6)
- “Las Posas Arroyo-Reach 7” encompassing land draining to Arroyo Simi (Reach 7)

Most responsibility areas include a nested VCAILG monitoring site drainage. In these cases, the VCAILG monitoring site at the base of the drainage was assigned as the Conditional Waiver benchmark “beacon site” for that responsibility area, and exceedances of benchmarks at that VCAILG monitoring site were used, in part, together with monitoring data from TMDL-related monitoring sites and BMP survey results to inform selection of BMPs for increased future implementation. A nested VCAILG monitoring site was not available for some responsibility areas (for example, responsibility areas containing the HUC12s draining to Conejo Creek, Calleguas Creek reaches 2 and 3, the Malibu Creek watershed, and several coastal watersheds). For these responsibility areas, crop percentages were evaluated and used to select the most representative VCAILG monitoring site from a neighboring responsibility area to serve as the Conditional Waiver benchmark beacon site. Despite its location in the Beardsley Wash subwatershed, 05T_HONDO was assigned as a benchmark beacon site for the responsibility area containing the Malibu Creek Watershed because this monitoring site was chosen by Regional Board staff as a proxy VCAILG monitoring site for enrolled parcels in the Malibu Creek watershed.

In the following four cases, a HUC12 (or partial HUC12, see above) contained two nested VCAILG monitoring site drainages:

- San Antonio Creek HUC12 contained drainages for both VRT_THACH and VRT_SANTO monitoring sites
- Adams Canyon-Santa Clara River HUC12 contained drainages for both S02T_TODD and S02T_ELLS monitoring sites
- Revolon Slough - Calleguas Creek (Revolon) partial HUC12 contained drainages for both 04D_ETTG and 04D_LAS monitoring sites
- Timber Canyon-Santa Clara River HUC12 contained drainages for both S03T_TIMB and S03D_BARDS monitoring sites

In these cases, crop percentages were derived for each of the nested monitoring site drainages and the surrounding HUC12 (or partial HUC12). The VCAILG monitoring site drainage whose agricultural land use most closely matched the rest of the HUC12 was retained as part of the associated responsibility area. In the following three cases the less-suited VCAILG monitoring site drainage was defined as a stand-alone responsibility area with no external surrounding land:

- San Antonio Creek (VRT_SANTO) responsibility area
- Ellsworth Barranca (S02T_ELLS) responsibility area
- South Revolon (04D_LAS) responsibility area

In the fourth case, S03T_TIMB was identified as the benchmark beacon site for a responsibility area involving a neighboring HUC12 that is non-contiguous with the drainage area for S03T_TIMB. The responsibility areas and associated HUC12s and Waiver Benchmark beacon sites are listed in Table 4.

ArcGIS was used to permanently assign each irrigated agricultural parcel in the County (known to VCAILG as of November 2018) to one of the twenty responsibility areas and to VCAILG monitoring site drainages (the latter, where pertinent). Parcels were located using a Ventura County Assessor’s Parcel map shapefile downloaded in November 2016. For parcels that

straddled the boundary of a responsibility area and/or a VCAILG monitoring site drainage, the parcel was assigned to the area which contained $\geq 50\%$ of its assessed acreage. A very small proportion ($<1\%$) of parcels were not found in the Assessor's shapefile. These parcels were located using available pdf versions of the Assessor's parcel maps and Google Earth to locate the parcels in relation to responsibility area boundaries. The updates are made on an ongoing basis as parcels are split or re-numbered.

A map for each responsibility area illustrating the information in Table 4 is included in Appendix B. A map illustrating enrolled, un-enrolled, and exempt (not irrigated) parcels for each responsibility area is provided in Appendix C. Maps showing responsibility area and monitoring site drainage area boundaries, and all monitoring sites used for evaluation of water quality (benchmark waiver sites and TMDL-related monitoring sites), are provided later in the document. Summaries of the enrolled, un-enrolled and exempt acreage are tabulated for each responsibility area later in the document.

Table 4. Responsibility Areas and Associated HUC-12s and VCAILG Monitoring Sites

Responsibility Area	Associated VCAILG Monitoring Site	Included HUC-12s
Mugu Lagoon	01T_ODD3 EDI	<ul style="list-style-type: none"> • Partial HUC-12 Mugu Lagoon-South
Etting-Wood	04D_ETTG	<ul style="list-style-type: none"> • Partial HUC-12 Revolon Slough-Calleguas Creek (Revolon) minus the drainage area of monitoring site 04D_LAS
Lower Calleguas Creek	04D_ETTG	<ul style="list-style-type: none"> • Partial HUC-12 Revolon Slough-Calleguas Creek (Calleguas)
South Revolon	04D_LAS	<ul style="list-style-type: none"> • none
LaVista Drain	05D_LAVD	<ul style="list-style-type: none"> • Partial HUC-12 Mugu Lagoon-North
Beardsley Wash	05T_HONDO	<ul style="list-style-type: none"> • Beardsely Wash HUC-12
Malibu	05T_HONDO	<ul style="list-style-type: none"> • Potrero Valley Creek HUC-12 • Medea Creek HUC-12 • Las Virgenes Creek HUC-12 • Cold Creek-Malibu Creek HUC-12
Arroyo Conejo	06T_LONG2	<ul style="list-style-type: none"> • Lower Conejo Arroyo HUC-12 • Upper Conejo Arroyo HUC-12
Las Posas	06T_LONG2	<ul style="list-style-type: none"> • Partial HUC-12 Las Posas Arroyo-Reach 6
Arroyo Simi	06T_LONG2	<ul style="list-style-type: none"> • Partial HUC-12 Las Posas Arroyo-Reach 7 • Lower Simi Arroyo HUC-12 • Upper Simi Arroyo HUC-12
McGrath Lake Coastal	OXD_CENTR	<ul style="list-style-type: none"> • Arundell Barranca-Frontal Pacific Ocean HUC-12 • McGrath Lake-Frontal Pacific Ocean HUC-12 • the portion of Harmon Canyon-Santa Clara River HUC-12 falling within the OXD-CENTR monitoring site drainage area
Todd Barranca	S02T_TODD	<ul style="list-style-type: none"> • Harmon Canyon-Santa Clara River HUC-12, minus the portion in the OXD_CENTR monitoring site drainage area

Responsibility Area	Associated VCAILG Monitoring Site	Included HUC-12s
		<ul style="list-style-type: none"> Adams Canyon-Santa Clara River HUC-12, minus the drainage area of monitoring site S02T_ELLS
Ellsworth Barranca	S02T_ELLS	<ul style="list-style-type: none"> none
Bardsdale	S03D_BARDS	<ul style="list-style-type: none"> Timber Canyon-Santa Clara River HUC-12, minus the drainage area of monitoring site S03T_TIMB
Santa Paula Creek	S03T_TIMB	<ul style="list-style-type: none"> Santa Paula Creek HUC-12 plus the drainage area of monitoring site S03T_TIMB in neighboring HUC-12
Boulder Creek	S03T_BOULD	<ul style="list-style-type: none"> Boulder Creek-Sespe HUC-12 Hopper Canyon HUC-12 Pole Creek-Santa Clara River HUC-12
Tapo Canyon	S04T_TAPO	<ul style="list-style-type: none"> Lake Piru-Piru Creek HUC-12 Hosler Canyon-Piru Creek HUC-12 Salt Canyon-Santa Clara River HUC-12
Ventura River Inland	VRT_THACH	<ul style="list-style-type: none"> Matilija Creek HUC-12 North Fork Matilija Creek HUC-12 Upper Ventura River HUC-12 Coyote Creek HUC-12 Lower Ventura River HUC-12 San Antonio Creek HUC-12 minus the drainage area for monitoring site VRT_SANTO
Ventura River Coastal	VRT_THACH	<ul style="list-style-type: none"> Rincon Creek HUC-12 Los Sauces Creek-Frontal Pacific Ocean HUC-12
San Antonio Creek	VRT_SANTO	<ul style="list-style-type: none"> none

MANAGEMENT PRACTICE SURVEY PROCESS

Appendix 3, Section 2.a.iii. of the Conditional Waiver specifies that the WQMP contain a report of existing management practices being implemented. A management practice survey template was due to the Regional Board Executive Officer for review and approval August 12, 2016. The VCAILG received approval of the survey October 10, 2016. In compliance with the requirement to make the survey available to its members within eight months of Conditional Waiver adoption, the VCAILG sent notification letters to its members and opened the survey website in December 2016.⁴ The results of this first survey were provided in the first WQMP. The second survey period took place during May and June 2018. Results of both surveys are displayed side-by-side for each responsibility area.

⁴ Hard copy versions of the survey were available upon request. The survey is included herein as Appendix A.

Because separate surveys were submitted for individual parcels, and because each surveyed member parcel was unambiguously assigned to a responsibility area (and a VCAILG monitoring site drainage, where pertinent), it was a straightforward procedure to tally up the acres, or linear feet, upon which practices or BMPs were indicated as in use for individual responsibility areas and VCAILG monitoring sites. In addition, it was straightforward to tally the total irrigated acreage that applied to each survey question. Aggregate survey results were reported in two ways:

- Surveyed units (acres or linear feet) meeting criterion
- Percent of total applicable surveyed units meeting criterion (can be considered an estimated adoption rate)

Survey results were tabulated separately for VCAILG monitoring site drainages and the overall responsibility area acreage. Overall, VCAILG members completed surveys covering 69,667 irrigated acres. This represents 83.5% of the irrigated acres enrolled in VCAILG.

WATER QUALITY BENCHMARK EXCEEDANCE EVALUATION PROCESS

Water Quality Benchmarks

This section presents the water quality benchmarks as specified in the 2016 Conditional Waiver, used to evaluate the VCAILG monitoring data. Additional standard water quality benchmarks (Conditional Waiver Appendix 4) were added in 2016 for bifenthrin and *E. coli*. Bifenthrin data is available as it is included in the pyrethroid pesticides analysis suite and an exceedance analysis is included in this WQMP. *E. coli* testing was not required until the approval of the 2016 MRP and QAPP and began in January 2017.⁵ An exceedance analysis is included in this iteration of the WQMP. The standard water quality benchmarks are presented below, followed by water quality benchmarks based upon total maximum daily load (TMDL) load allocations (LAs) for agricultural discharges (Conditional Waiver Appendix 5). Due to the complexity of appropriately comparing TMDL LAs to the proper location, site type, sample media, and sampling condition, these benchmarks are described separately. However, when presenting the benchmark exceedance graphs for each responsibility area, all applicable benchmarks are considered and shown together.

Standard Water Quality Benchmarks (Conditional Waiver Appendix 4)

“Standard water quality benchmarks” in the Conditional Waiver include numeric and narrative water quality objectives contained in Appendix 4, and include several narrative and numeric Basin Plan objectives and water quality standards from the California Toxics Rule (CTR). In cases where the Conditional Waiver, in Appendix 4, references the Basin Plan or CTR, without specifying a benchmark number, the lowest applicable number was selected for each watershed. The Conditional Waiver specifies the goal for attaining these benchmarks as ten years from WQMP submittal.

Several of the narrative water quality objectives contained in the Basin Plan specify that discharges of wastes to receiving waters cannot alter “natural” or “ambient” conditions above or below a stated level. Many of the VCAILG monitoring sites are located on agricultural drains

⁵ Conditional approval of the VCAILG MRP and QAPP was received December 16, 2016.

that discharge to receiving waters. Because “natural” and “ambient” conditions have not been established in receiving waters or are non-existent on agricultural drains and ephemeral streams, monitoring data from sites located on agricultural drains are evaluated based on the assumption that if benchmarks are not exceeded in the agricultural drain, it is unlikely that the discharge from that drain will cause benchmark exceedances in the receiving water.

Table 5. Conditional Waiver Appendix 4 Standard Water Quality Benchmarks Derived From Narrative Objectives

Constituent	Watershed ¹	Narrative Objective ²	Applicable Benchmark
pH	CC, OXD, SCR, VR	The pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels shall not be changed by more than 0.5 pH units from natural conditions as a result of waste discharges.	$6.5 \leq \text{pH} \leq 8.5$ Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established
Temperature	CC, OXD, SCR, VR	For waters designated WARM, water temperature shall not be altered by more than 5°F above the natural temperature. At no time shall WARM-designated waters be raised above 80°F as a result of waste discharges.	WARM: $\leq 80^\circ\text{F}$ Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established
	SCR, VR	For waters designated COLD, water temperature shall not be altered by more than 5°F above the natural temperature.	COLD: No numeric benchmark. Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established
Dissolved Oxygen	OXD	No single dissolved oxygen determination shall be less than 5 mg/L, except when natural conditions cause lesser concentrations.	$\geq 5 \text{ mg/L}$
	CC, SCR, VR	The dissolved oxygen content of all surface waters designated as WARM shall not be depressed below 5 mg/L as a result of waste discharges.	WARM: $\geq 5 \text{ mg/L}$
	SCR, VR	The dissolved oxygen content of all surface waters designated as COLD and SPWN shall not be depressed below 7 mg/L as a result of waste discharges.	COLD, SPWN: $\geq 7 \text{ mg/L}$
Turbidity	CC, OXD, SCR, VR	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in natural turbidity attributable to controllable water quality factors shall not exceed the following limits: <ul style="list-style-type: none"> ▪ Where natural turbidity is between 0 and 50 NTU, increases shall not exceed 20%; ▪ Where natural turbidity is greater than 50 NTU, increases shall not exceed 10%. 	No numeric benchmarks. Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established
Total Suspended Solids (TSS)	CC, OXD, SCR, VR	Wastes shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.	No numeric benchmarks.
Toxicity	CC, OXD, SCR, VR	All waters shall be free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal or aquatic life. There shall be no chronic toxicity in ambient waters outside mixing zones.	$\leq 1.0 \text{ TUc}^3$ Benchmarks for specific potentially toxic constituents are listed in Tables 16 through 20.

1. CC = Calleguas Creek Watershed OXD = Oxnard Coastal Watershed SCR = Santa Clara River Watershed VR = Ventura River Watershed
2. Source: Water Quality Control Plan, Los Angeles Region (Basin Plan), 1994.
3. Source: "Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands," Order No. R4-2016-0143, Los Angeles Regional Water Quality Control Board, adopted April 14, 2016.

Table 6. Conditional Waiver Appendix 4 Standard Water Quality Benchmarks for Salts and Nutrients (Basin Plan Table 3-8 Numeric Water Quality Objectives)

Watershed / Reach	Reach Description	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Nitrogen (mg/L)	Ammonia ¹ (mg/L)	Phosphate (mg/L)
CC below Potrero Rd.	-----	-----	-----	-----	10 ²	pH, temperature dependent	-----
CC above Potrero Rd.	-----	150	250	850	10 ³	pH, temperature dependent	-----
OXD	-----	-----	-----	-----	10 ²	pH, temperature dependent	-----
SCR Reach 1	Tidally-influenced mouth of Santa Clara River upstream to 101 Bridge	-----	-----	-----	10 ²	pH, temperature dependent	-----
SCR Reach 2	Upstream of Hwy 101 Bridge to Freeman Diversion	150	600	1200	10 ²	pH, temperature dependent	-----
SCR Reach 3	Upstream of Freeman Diversion to A Street Bridge in Fillmore	100 ⁴	650	1300	5 ³	pH, temperature dependent	-----
SCR Reach 4	Upstream of A Street Bridge in Fillmore to Blue Cut Gaging Station	100	600	1300	5 ³	pH, temperature dependent	-----
VR Reach 4	Between Camino Cielo Rd. and Casitas Vista Rd.	60	300	800	5 ³	pH, temperature dependent	-----

Watersheds: CC = Calleguas Creek OXD = Oxnard Coastal SCR = Santa Clara River VR = Ventura River

1. Ammonia benchmarks are based on 1) freshwater ammonia objectives as calculated according to LARWQCB Resolutions 2002-011 and 2005-014, and 2) saltwater ammonia objectives as calculated according to LARWQCB Resolution 2004-022. Ammonia objectives are calculated based on the pH and temperature of the receiving water measured at the time of sample collection for ammonia analysis. Ammonia objectives used as benchmarks are chronic, 30-day averages.
2. There is no site-specific nitrogen objective in the Basin Plan (Table 3-8) applicable to this reach. The Basin Plan objective of 10 mg/L Nitrate-N was used for comparison with VCAILG data collected at monitoring sites in this reach.
3. The Nitrogen benchmark listed is as Nitrate-N plus Nitrite-N.
4. The 100 mg/L benchmark for chloride is the revised water quality objective adopted by the Regional Board in Resolution 2003-015.

Table 7. Conditional Waiver Appendix 4 Standard Water Quality Benchmarks for Copper

Constituent	Freshwater ^{1,2}		Brackish or Saltwater ¹	
	Benchmark (µg/L)	Benchmark Source	Benchmark (µg/L)	Benchmark Source
Copper	= $0.96e^{[0.8545(\ln hardness)+(-1.702)]}$	CTR CCC ³	3.1	CTR CCC ³

1. Freshwater benchmark applies to discharges to waters with salinities <1 ppt at least 95% of the time. Saltwater benchmark applies when salinities are ≥10 ppt at least 95% of the time. For discharges between these categories, or tidally influenced freshwater that supports EST beneficial uses, the lower criteria of the two shall be used; which is the saltwater benchmark.
2. As per footnote “m” to the Table in Paragraph (b)(1) of the CTR; “The freshwater criteria for metals are expressed in terms of the dissolved fraction of the metal in the water column.” In instances where the measured hardness is >400 mg/L as CaCO₃, a hardness of 400 is used to calculate the benchmark. This was done in accordance with CTR §31692, f. Hardness.
3. CTR = California Toxics Rule (USEPA, May 18, 2000).
CCC = Criteria Continuous Concentration

Table 8. Conditional Waiver Appendix 4 Standard Water Quality Benchmarks for Current Use Pesticides (Organophosphorus and Pyrethroid Pesticides)

Constituent	CC, OXD, SCR, VR Watersheds
	Benchmark (µg/L)
Chlorpyrifos	0.025
Diazinon	0.10
Bifenthrin	0.0006

Watersheds: CC = Calleguas Creek OXD = Oxnard Coastal SCR = Santa Clara River VR = Ventura River

Table 9. Conditional Waiver Water Quality Benchmark for *E. coli*

Constituent	CC, OXD, SCR, VR Watersheds	
	Unit	Benchmark
<i>E. coli</i>	MPN/100mL	235

Watersheds: CC = Calleguas Creek OXD = Oxnard Coastal SCR = Santa Clara River VR = Ventura River

Table 10. Conditional Waiver Appendix 4 Water Quality Benchmarks for Legacy Pesticides (Organochlorine Pesticides)

Constituent	CC, OXD, SCR, VR Watersheds	
	Benchmark (µg/L)	Benchmark Source ¹
Chlordane, sum	0.00059	CTR HHO
4,4'-DDD	0.00084	CTR HHO
4,4'-DDE	0.00059	CTR HHO
4,4'-DDT	0.00059	CTR HHO
Dieldrin	0.00014	CTR HHO
Toxaphene	0.00075	CTR HHO

Watersheds: CC = Calleguas Creek OXD = Oxnard Coastal SCR = Santa Clara River VR = Ventura River

1. CTR = California Toxics Rule (USEPA, May 18, 2000).
HHO = Human Health for Consumption of Organisms Only (30-day average)
HHWO = Human Health for Consumption of Water and Organisms (MUN-designation) (30-day average)

Water Quality Benchmarks Based Upon TMDL LAs (Conditional Waiver Appendix 5)

Effective TMDL monitoring requirements were incorporated into both the 2010 and 2016 Conditional Waivers (Order No. R4-2010-0186 and R4-2016-0143, respectively). VCAILG coordinates with established TMDL monitoring programs or conducts additional monitoring where necessary in order to meet TMDL requirements. Several TMDLs became effective during the 2010 waiver period and were later added to the 2016 Conditional Waiver. Monitoring approaches to meet the requirements of all effective TMDLs were included in the 2016 VCAILG MRP and QAPP. For some TMDLs, sufficient data is not yet available to go through the complete exceedance evaluation process described in the following section, however, where data was available or if two or more exceedances have already occurred (negating the need for additional years of data to trigger further action in the WQMP), then graphs of the available monitoring data and BMP implementation actions are included. Summaries of each TMDL including the LA benchmarks and sites used to evaluate benchmark attainment are provided below. Along with the specific benchmarks, the Conditional Waiver also includes deadlines for achieving them as listed in Table 11.

Table 11. TMDL Water Quality Benchmarks Compliance Dates

TMDLs	Compliance Date
Calleguas Creek Watershed and Mugu Lagoon Siltation TMDL ^[1]	March 24, 2015
Revolon Slough and Beardsley Wash Trash TMDL	October 14, 2020
Calleguas Creek Watershed and Mugu Lagoon Toxicity, Chlopyrifos, and Diazinon TMDL	March 24, 2022
Calleguas Creek Watershed and Mugu Lagoon Metals and Selenium TMDL	March 26, 2022
Calleguas Creek Watershed Boron, Chloride, Sulfate and TDS (Salts) TMDL	December 23, 2023
Calleguas Creek Nitrogen Compounds and Related Effects TMDL	October 14, 2025
Calleguas Creek Watershed and Mugu Lagoon OC Pesticides and PCBs TMDL	March 24, 2026
Oxnard Drain #3 Pesticides, PCBs, and Sediment Toxicity TMDL	April 14, 2026
Upper Santa Clara River Chloride TMDL	October 14, 2020
Santa Clara River Nitrogen Compounds TMDL	October 14, 2022
Santa Clara River Estuary Toxaphene TMDL	October 7, 2025
Santa Clara River Bacteria TMDL	March 21, 2023 / 2029 ^[2]
Ventura River Algae TMDL	June 28, 2019
Ventura River Estuary Trash TMDL	October 14, 2020
McGrath Lake OC Pesticides and PCBs TMDL	June 30, 2021
Malibu Creek Watershed Sedimentation and Nutrients TMDL	June 2, 2021
Malibu Creek Watershed Nutrients TMDL	October 14, 2022

1. Additional time may be added to this TMDL deadline should a TMDL reconsideration revise the implementation schedule based on the results of special studies.

2. March 21, 2023 for dry weather and March 21, 2029 for wet weather.

Calleguas Creek Watershed and Mugu Lagoon OC Pesticides and PCBs TMDL

Interim sediment LAs are currently in effect for this TMDL with final LAs to be achieved by March 24, 2026. A conservative analysis was performed by comparing monitoring data to the

final LAs rather than only the interim LAs since sediment sampling is performed on an annual basis as compared to quarterly dry weather water quality monitoring. Compliance with these LAs is measured at the base of the subwatershed in the receiving water. The receiving water compliance sites associated with at least one responsibility area are: 01_BPT_14, 01_BPT_15, 03_UNIV, 04_WOOD, 06_SOMIS/UPLAND, 07_HITCH, and 9B_ADOLF.

Table 12. CCW OC Pesticides and PCBs Sediment Allocations

Interim Sediment LAs							
Constituent	Units ¹	Subwatershed					
		Mugu Lagoon ²	Calleguas Creek	Revolon Slough	Arroyo Las Posas	Arroyo Simi	Conejo Creek
Chlordane	ng/g	25	17	48	3.3	3.3	3.4
4,4'-DDD	ng/g	69	66	400	290	14	5.3
4,4'-DDE	ng/g	300	470	1,600	950	170	20
4,4'-DDT	ng/g	39	110	690	670	25	2
Dieldrin	ng/g	19	3	5.7	1.1	1.1	3
PCBs	ng/g	180	3,800	7,600	25,700	25,700	3,800
Toxaphene	ng/g	22,900	260	790	230	230	260
Final Sediment LAs							
Chlordane	ng/g	3.3	3.3	0.9	3.3	3.3	3.3
4,4'-DDD	ng/g	2.0	2.0	2.0	2.0	2.0	2.0
4,4'-DDE	ng/g	2.2	1.4	1.4	1.4	1.4	1.4
4,4'-DDT	ng/g	0.3	0.3	0.3	0.3	0.3	0.3
Dieldrin	ng/g	4.3	0.2	0.1	0.2	0.2	0.2
PCBs	ng/g	180.0	120.0	130.0	120.0	120.0	120.0
Toxaphene	ng/g	360.0	0.6	1.0	0.6	0.6	0.6

1. ng/g = nanograms/ gram

2. The Mugu Lagoon subwatershed includes Duck Pond/Agricultural Drain/Mugu/Oxnard Drain #2.

Calleguas Creek Watershed and Mugu Lagoon Toxicity, Chlorpyrifos, and Diazinon TMDL

Interim LAs are currently in effect for this TMDL with final LAs to be achieved by March 24, 2022. A conservative analysis for benchmark compliance was performed applying the allowable exceedance rate to the final LAs to ensure proactive BMP implementation. Compliance with these LAs is measured at the base of each subwatershed. The Toxicity TMDL receiving water compliance monitoring sites associated with at least one responsibility area include: 01_RR_BR, 04_WOOD, 03_UNIV, 9B_ADOLF, 07_HITCH, 06_SOMIS/UPLAND. CCW TMDL Monitoring Program agricultural land use site data within the same subwatershed was then used to verify exceedances were the result of ag discharges. This evaluation of receiving water and agricultural land use site data is included in each CCW TMDLs Annual Monitoring Report.

Table 13. CCW Toxicity, Chlorpyrifos, and Diazinon Load Allocations

Constituent	Interim LA ¹		Final LA ¹
	Acute (1 hour) (µg/L) ²	Chronic (4 day) (µg/L) ³	Acute and Chronic (µg/L) ²
Chlorpyrifos	2.57	0.81	0.014 / 0.0133 ⁴
Diazinon	0.278	0.138	0.1
Toxicity	1 TU _c	1 TU _c	1 TU _c

1. These TMDL LAs apply to the receiving water at the base of each subwatershed.
2. Acute LAs are used for assessing wet-weather data.
3. Chronic LAs are used for assessing dry-weather data.
4. Final chlorpyrifos LA of 0.014 applies to the Arroyo Simi, Arroyo Las Posas, Conejo, and Mugu Lagoon subwatersheds; 0.0133 applies to Calleguas and Revolon subwatersheds.

Calleguas Creek Watershed Boron, Chloride, Sulfate, and TDS (Salts) TMDL

Interim dry weather LAs are measured as in-stream monthly averages at the base of each subwatershed, except for chloride which is measured as an instantaneous maximum. Dry weather LAs apply when flow rates are below the 86th percentile and there was no measurable precipitation in the previous 24 hour period. Final LAs are to be achieved by December 23, 2023. The Salts TMDL receiving water compliance monitoring sites associated with at least one responsibility area include: 04_WOOD, 03_UNIV, 9B_BARON, and 07_TIERRA. CCW TMDL Monitoring Program agricultural land use site data within the same subwatershed was then used to verify exceedances were the result of ag discharges; this evaluation is included in each CCW TMDLs Annual Monitoring Report.

Table 14. CCW Salts TMDL Dry Weather Load Allocations

Constituent	Interim Dry Weather LA (mg/L)
Boron Total	1.8
Chloride Total	230
Sulfate Total	1,962
TDS Total	3,995

Calleguas Creek Watershed and Mugu Lagoon Metals and Selenium (Metals) TMDL

Interim LAs are currently in effect for this TMDL with final LAs to be achieved by March 26, 2022. Dry weather LAs apply to days when flows in the stream are less than the 86th percentile flow rate for the subwatershed. Wet weather LAs apply to days when flows in the stream exceed the 86th percentile flow rate for the subwatershed. The LAs for total recoverable metals and selenium are applied in the receiving water at the compliance points (04_WOOD for Revolon Slough and 03_UNIV for Calleguas Creek). CCW TMDL Monitoring Program agricultural land use data was used to verify exceedances were the result of ag discharges.

Table 15. CCW Metals TMDL Load Allocations for Total Recoverable Metals and Selenium

Constituent	Calleguas and Conejo Creeks			Revolon Slough		
	Dry Daily Max (µg/L)	Dry Monthly Avg. (µg/L)	Wet Daily Max (µg/L)	Dry Daily Max (µg/L)	Dry Monthly Avg. (µg/L)	Wet Daily Max (µg/L)
Copper	24	19	1,390	24	19	1,390
Nickel	43	42	---	43	42	---
Selenium	---	---	---	6.7 ¹	6 ¹	---

1. Attainment of interim LAs will be evaluated in consideration of background loading data, if available.

Interim LAs for mercury are evaluated based on suspended sediment measured in-stream at the base of Revolon Slough and Calleguas Creek.

Table 16. CCW Metals TMDL Load Allocations for Mercury in Suspended Sediment

Flow Range (Million gallons/year)	Calleguas Creek (lbs/yr)	Revolon Slough (lbs/yr)
0-15,000	3.9	2
15,000-25,000	12.6	4.8
>25,000	77.5	12.2

Calleguas Creek Watershed Nitrogen TMDL

LAs for the CCW Nitrogen TMDL are to be achieved by October 14, 2025. The CCW TMDL Monitoring Program measures compliance in the receiving water and the contribution of agriculture is evaluated at the ag land use sites within the same reach as the receiving water site.

Table 17. CCW Nitrogen TMDL Load Allocations

Constituent	Load Allocation (mg/L)
Nitrate-N + Nitrite-N	9

Revolon Slough and Beardsley Wash Trash TMDL

The LA for this TMDL is zero trash. Dischargers may achieve compliance with the LAs by implementing a minimum frequency of assessment and collection/best management practice (MFAC/BMP) program. The final compliance date specified in the Conditional Waiver is October 14, 2020. VCAILG members are complying with the Trash TMDL requirements through a MFAC/BMP Program. The MFAC program includes regular collection and assessment of trash. VCAILG members are in compliance with the TMDL requirement to ensure zero trash immediately after each MFAC event. Additionally, VCAILG has implemented additional BMPs to control trash and reduce the accumulation of trash between collection events. The importance of collecting and properly disposing of trash has also been a reoccurring topic at multiple VCAILG education classes. No further evaluation has been performed for this TMDL.

Santa Clara River Nitrogen Compounds TMDL

The LA for the SCR Nitrogen Compounds TMDL is to be achieved by October 14, 2022. Monitoring data collected at the VCAILG monitoring program sites located within the SCR watershed is compared to the LA.

Table 18. Santa Clara River Nitrogen TMDL Load Allocation

Constituent	Load Allocation (mg/L) ¹
Ammonia-N + Nitrate-N + Nitrite-N	10

1. The specified LA applies to all Santa Clara River reaches within Ventura County.

Upper Santa Clara River Chloride TMDL

The chloride LA applies to reaches 4B, 5, and 6 of the SCR and there is one VCAILG monitoring site that drains to reach 4B (S04T_TAPO). The Conditional Waiver compliance date for this TMDL is October 14, 2020.

Table 19. Upper Santa Clara River Chloride TMDL Load Allocation

Constituent	Load Allocation (mg/L) ¹
Chloride	100

1. Allocation applies as a 3-month rolling average.

Santa Clara River Estuary Toxaphene TMDL

The SCR Estuary Toxaphene TMDL applies to reaches 1 and 2 of the SCR. LAs were established for toxaphene measured in fish tissue collected in the estuary and suspended sediment discharges. Suspended sediment is measured at two TMDL assessment sites, one in reach 1 (S01D_MONAR) and another in reach 2 (S02T_ELLS). The Conditional Waiver compliance date for this TMDL is October 7, 2025.

Table 20. Santa Clara River Estuary Toxaphene TMDL Load Allocations

Reach	Toxaphene in Fish Tissue (µg/kg)	Toxaphene in Suspended Sediment (µg/kg)
Santa Clara River Estuary	6.1	0.1

Santa Clara River Bacteria TMDL

The SCR Bacteria TMDL was incorporated in the 2016 Conditional Waiver and the monitoring strategy was approved as part of the VCAILG MRP and QAPP. Monitoring for this TMDL began in 2017 and a compliance evaluation can be found in the 2018 VCAILG Annual Monitoring Report. Both sites monitored for this TMDL met the interim allowable exceedance days. Final compliance dates for this TMDL are March 21, 2023 for dry weather and March 21, 2029 for wet weather.

Ventura River Estuary Trash TMDL

The LA for this TMDL is zero trash. Dischargers may achieve compliance with the LAs by implementing a minimum frequency of assessment and collection/best management practice (MFAC/BMP) program. The final compliance date specified in the Conditional Waiver is October 14, 2020. VCAILG members are complying with the Trash TMDL requirements through a MFAC/BMP Program. The MFAC program includes regular collection and assessment of trash. VCAILG members are in compliance with the TMDL requirement to ensure zero trash immediately after each MFAC event. Additionally, VCAILG has implemented additional BMPs to control trash and reduce the accumulation of trash between collection events. The importance of collecting and properly disposing of trash has also been a reoccurring topic at VCAILG education classes. No further evaluation has been performed for this TMDL.

Ventura River Algae TMDL

The VR Algae TMDL LAs were incorporated into the 2016 Conditional Waiver as benchmarks. Monitoring for this TMDL began following the approval of the VCAILG MRP and QAPP. The three monitoring sites for this TMDL have not had flow during dry weather sampling. Storm samples met the applicable load allocations and no further analysis was performed. The final compliance date for this TMDL is June 28, 2019.

Table 21. Dry Weather Load Allocations for the Ventura River Algae TMDL

Constituent	Load Allocation (lbs/day)¹
Total Nitrogen	16
Total Phosphorus	0.12

1. Dry weather load allocations are the same for all reaches

Table 22. Wet Weather Load Allocations for the Ventura River Algae TMDL

Site	Constituent	Load Allocation (mg/L)
VRT_THACH ¹	Nitrate-N + Nitrite-N	5
VRT_SANTO ¹	Nitrate-N + Nitrite-N	5
V02D_SPM ²	Nitrate-N + Nitrite-N	10

1. Sampling site drains to Reach 4
2. Sampling site drains to Reach 2

McGrath Lake PCBs, Pesticides, and Sediment Toxicity TMDL

Compliance with the McGrath Lake TMDL is evaluated through monitoring of the Central Ditch at VCAILG monitoring site OXD_CENTR, which eventually discharges to McGrath Lake. The Conditional Waiver compliance date is June 30, 2021 and LAs are included for water column and suspended sediment concentrations. For this WQMP OC pesticides water column concentrations have been evaluated for exceedances since past data is available through normal Conditional Waiver required sampling. Suspended sediment and PCBs monitoring began when the 2016 MRP and QAPP went into effect; therefore, three wet weather samples of suspended sediment are available and were evaluated for exceedances.

Table 23. McGrath Lake PCBs, Pesticides, and Sediment Toxicity TMDL Load Allocations

Constituent	Water Column Load Allocation (µg/L)	Suspended Sediment Load Allocation (µg/dry kg)
Chlordane	0.00059	0.5
Dieldrin	0.00014	0.02
4,4'-DDD	0.00084	2
4,4'-DDE	0.00059	2.2
4,4'-DDT	0.00059	1
Total DDT	---	1.58
Total PCBs	0.00017	22.7

Oxnard Drain #3 Pesticides, PCBs, and Sediment Toxicity TMDL

The Oxnard Drain #3 Pesticides TMDL was incorporated into the 2016 Conditional Waiver and additional monitoring to evaluate attainment of TMDL LA benchmarks was included in the MRP and QAPP. Monitoring for this TMDL is performed at site 01T_ODD3_ED1. A previously existing VCAILG monitoring site, 01T_ODD3_ARN, is located within the TMDL drainage area and monitoring data was available for comparison to all water column LAs, with the exception of total PCBs. An exceedance evaluation was performed and graphs of exceedances are included in this WQMP as necessary. Sediment data as well as PCBs concentrations for water and sediment are included in the AMR. Sufficient data is not yet available to complete the benchmark exceedance evaluation procedure to trigger graphs in the WQMP. However, it should be noted that to date, PCBs have not been detected in any of the water or sediment samples to date. The following table lists all LA benchmarks for this TMDL. The final compliance date for the Oxnard Drain #3 Pesticides TMDL is April 14, 2026.

Table 24. Oxnard Drain #3 Pesticides, PCBs, and Sediment Toxicity TMDL Load Allocations

Constituent	Water Allocations (chronic) (µg/L)	Sediment Allocations ^{1,2} (µg/dry kg)	Alternate Sediment Allocations ^{1,3} (µg/dry kg)
Bifenthrin ⁴	0.0006	--	--
Chlordane, total	0.00059	0.5	3.3
Chlorpyrifos ⁴	0.0056	--	--
4,4'-DDT	0.00059	1.0	0.3
4,4'-DDE	0.00059	2.2	2.2
4,4'-DDD	0.00084	2.0	2.0
Dieldrin	0.00014	0.02	4.3
PCBs, total	0.00017	22.7	180
Sediment Toxicity	--	No significant chronic sediment toxicity	--
Toxaphene	0.0002	0.1	360

1. Sediment concentrations associated with suspended sediment and Oxnard Drain #3 bottom sediment.

2. Sediment allocations apply if there are fish tissue or sediment toxicity exceedances. All sediment allocations are ERLs, except toxaphene. Toxaphene does not have an ERL, so the TEL concentration was selected.

3. The alternate sediment allocation applies when the fish tissue target and the sediment toxicity allocation are achieved in Oxnard Drain #3. The alternate sediment allocation concentrations match the Mugu Lagoon TMDL allocations.
4. Bifenthrin and chlorpyrifos allocations included to address the sediment toxicity impairment.

Malibu Creek and Lagoon TMDLs for Sedimentation and Nutrients to Address Benthic Community Impairments and Malibu Creek Watershed Nutrients TMDL

There is minimal agricultural acreage within the small portion of the Malibu Creek watershed that is also within Ventura County. A proxy site (05T_HONDO) was selected based on similar crop types in the adjacent Calleguas Creek watershed to evaluate TMDL LA benchmark compliance with the two Malibu Creek TMDLs. These TMDLs were newly incorporated into the 2016 Conditional Waiver and an exceedance evaluation was performed in this iteration of the WQMP. Compliance dates for these TMDLs are July 2, 2021 for the Sedimentation and Nutrients TMDL and October 14, 2022 for the Nutrients TMDL. The following two tables list all LA benchmarks for the two Malibu Creek TMDLs.

Table 25. Malibu Creek and Lagoon TMDLs for Sedimentation and Nutrients Load Allocations

Constituent	Season	Load Allocation (mg/L)
Total Nitrogen	Summer	0.65
	Winter	1.00
Total Phosphorus	Summer	0.10
	Winter	0.10

Table 26. Malibu Creek Watershed Nutrients TMDL Load Allocations

Constituent	Season	Load Allocation	Units
Total Nitrogen	Summer	3	lbs/day
Total Phosphorus		0.2	lbs/day
Nitrogen (nitrate-N + nitrite-N)	Winter	8	mg/L

Benchmark Exceedance Evaluation Process

Monitoring data must be evaluated in comparison to the standard water quality benchmarks and TMDL LA benchmarks specified in the 2016 Conditional Waiver. Appendix 3, Section 2.a.ii specifies that, “for each constituent that has exceeded a Water Quality Benchmark (considering applicable averaging periods), a graph showing the concentrations of the constituent over time since 2007. The VCAILG received directions from Regional Board staff regarding the averaging period and exceedance threshold for generating a graph in the WQMP on October 28 and November 2, 2016. Directions for data and exceedance evaluation were as follows:

- Separate monitoring data by wet and dry weather samples.
- Consider the most recent three years of monitoring.
- The recurrence frequency to trigger a graph should be more than one exceedance of a benchmark in a three-year period.

The following flow chart outlines the process used to evaluate monitoring data compared to the standard water quality benchmarks.

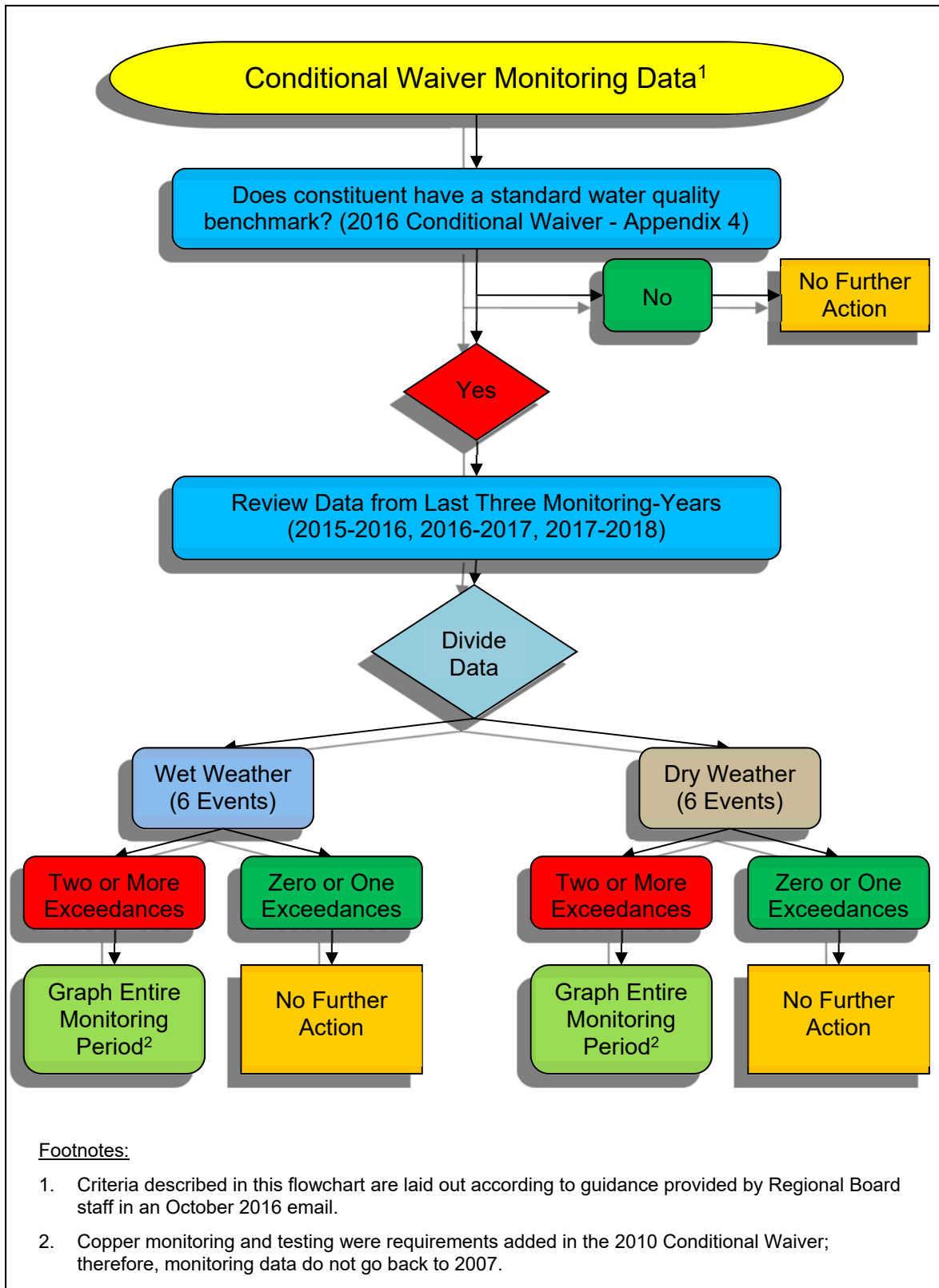


Figure 5. Process for Comparing VCAILG Monitoring Data to Standard Water Quality Benchmarks and Triggering Concentration Graphs

The two following flowcharts detail the data evaluation process used for data compared to TMDL LAs. Figure 6 demonstrates the handling of monitoring data collected by the VCAILG. The evaluation of monitoring data collected under the CCW TMDL Monitoring program is provided in Figure 7. Since the number of monitoring events varies for certain TMDLs, the exceedance rate of 33%, calculated from the criteria specified by the Regional Board was applied. For constituents without an extensive monitoring history and the TMDL was incorporated into the 2016 Conditional Waiver, available data was considered and if two or more exceedances occurred, the data is graphed and BMP requirements are included in this WQMP.

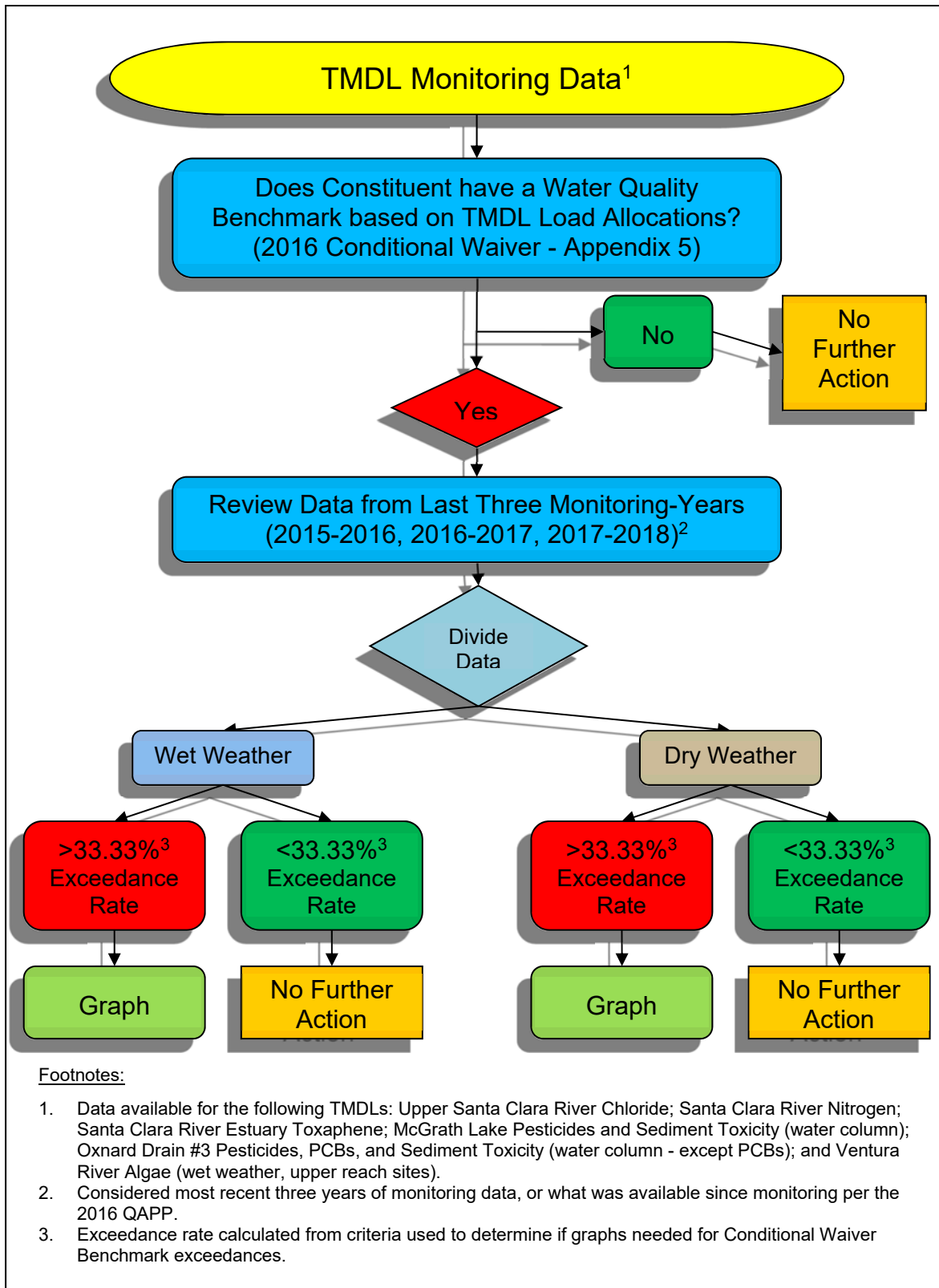


Figure 6. Process for Comparing TMDL Monitoring Data Collected by VCAILG to TMDL LA Benchmarks and Triggering Concentration Graphs

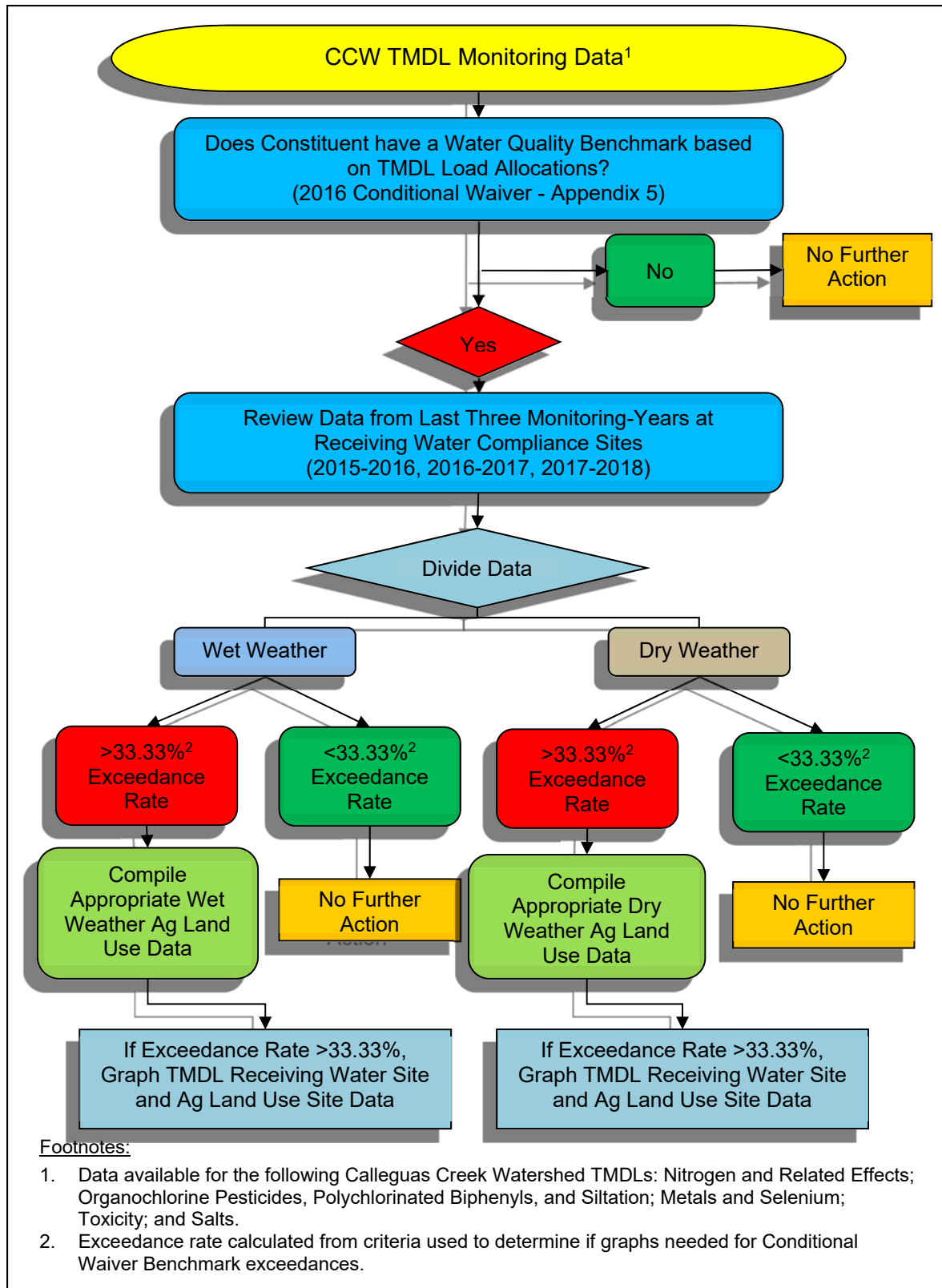


Figure 7. Process for Comparing Monitoring Data Collected by the CCW TMDL Monitoring Program to CCW TMDL LA Benchmarks and Triggering Concentration Graphs

Thomas Fire Effect on the Benchmark Exceedance Evaluation Process

Beginning on December 4, 2017, the Thomas fire began burning north of the City of Santa Paula in the Santa Clara River Watershed. It continued to burn east to Fillmore, west into Ventura, north through Ojai and the Ventura River Watershed and all the way up into Santa Barbara County. Until recently it was the largest California wildfire on record having burned 281,893 acres. Six VCAILG monitoring sites, two in the Ventura River Watershed and four in the Santa Clara River Watershed, had significant portions of their site drainages burned (Figure 8).

In the 2018 Annual Monitoring Report, the VCAILG documents additional fire impacts and unsafe conditions that prevented sampling at the two Ventura River Watershed sites near Ojai during the March 22, 2018 storm event. Water quality data collected during the March 11, 2018 and March 22, 2018 storms at the potentially impacted sites shown in Figure 8 was not considered in the benchmark exceedance evaluation process due to the inability of VCAILG to relate the results to on-farm management and activities and avoid requiring costly BMP implementation of its members due to fire effects. However, if the previous three years of wet weather data triggered graphs and BMP implementation, those results and requirements for further action were retained.

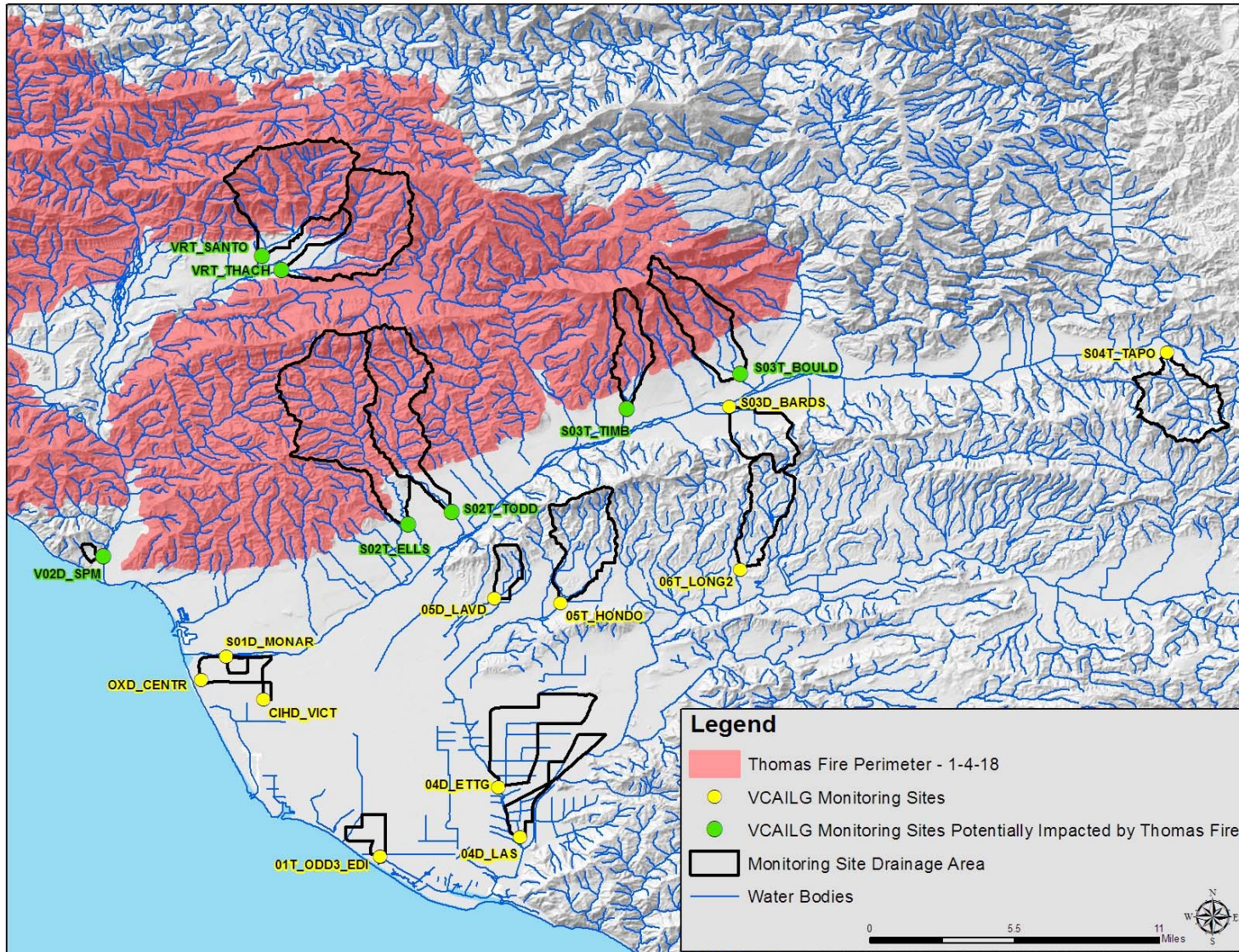


Figure 8. Thomas Fire Burn Area in Relation to VCAILG Monitoring Sites and Drainage Areas

Summary of Existing Conditions by Responsibility Area

This section presents the requisite WQMP content described in Conditional Waiver Appendix 3, Sections 2.a and b. All information is presented according to responsibility area. Each responsibility area is named for the VCAILG monitoring site that serves as its benchmark beacon site. In some cases, data from the VCAILG monitoring site is also used to evaluate attainment of TMDL LAs. Any additional monitoring sites referred to in maps or text are for TMDL assessment purposes. The HUC12s and VCAILG monitoring sites belonging to the responsibility areas were listed above in Table 4. As previously described, maps showing the component HUC12s for each responsibility area are provided in Appendix B, and maps identifying the enrolled, un-enrolled, and exempt parcels for each responsibility area are provided in Appendix C.

For each responsibility area, the following information is presented below:

- General map of the responsibility area and applicable monitoring sites for evaluating benchmark exceedances.
- Management practice survey results
- Graphs triggered by benchmark exceedances
- Table summarizing the benchmark exceedance evaluation
- Table combining the benchmark exceedance evaluation, applicable BMPs, and current BMP adoption rates to identify where additional implementation of specific BMPs is warranted. Per communications with Regional Board staff, a BMP is considered fully adopted at a 98% adoption rate. TMDL-specific BMPs specified in the Conditional Waiver are also identified.

The pesticide use evaluation assessment concludes this section of the WQMP.

Mugu Lagoon Responsibility Area



Figure 9. Mugu Lagoon Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Mugu Lagoon responsibility area are illustrated in Figure 9. TMDL monitoring sites and their designations for evaluating attainment of various TMDL LA benchmarks are as follows:

- 01T_ODD3_EDI is an Oxnard Drain #3 Pesticides, PCBs, and Sediment Toxicity TMDL Assessment Site
- 04_WOOD is a CCW Salts TMDL Receiving Water Compliance Site
- 04D_WOOD is a CCW Salts TMDL Ag Land Use Site

- 01_BPT_14 is a CCW OC Pesticides and PCBs TMDL Receiving Water Compliance Site
- 01_RR_BR is a CCW Nitrogen, Toxicity, and Metals TMDL Receiving Water Compliance Site
- 01T_ODD2_DCH is a CCW Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 27. Mugu Lagoon Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site 01T_ODD3_EDI
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	10,291	711
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	11	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	10,012	711
Assessed Acres from Agricultural Parcel List belonging to Non Members	269	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	8,224	634
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.82	0.89
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	221	0
Total Estimated Irrigated Acres (Member plus Non Member)	8,445	634
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	97%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	7,323	634
Percent of Total Estimated Irrigated Acres that were Surveyed	87%	100%
Percent of VCAILG Member Irrigated Acres that were Surveyed	89%	100%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 28. Mugu Lagoon Responsibility Area Crop Types and General Production Practices

Crop or Practice	01T_ODD3 EDI Site Drainage Only				Mugu Lagoon Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	2,073	2,525	44%	34%
Blueberries	_*	-	_*	-	289	33	6%	0.4%
Raspberries	-	-	-	-	534	534	7%	7%
Row Crop	-	81	-	13%	1,425	2,519	30%	34%
Orchard	-	-	-	-	429	452	9%	6%
Nursery	-	-	-	-	18	18	0.4%	0.2%
Flower	-	-	-	-	49	219	1%	3%
Sod	553	553	100%	87%	349	1,013	7%	14%
Other	-	-	-	-	65	12	1%	0.2%
Overhead Cover in Production Areas								
Hoop House	2	-	0.4%	-	1,227	631	26%	9%
No Cover	708	81	128%	13%	5,093	5,136	108%	70%
Greenhouse	-	-	-	-	145	73	3%	1%
Shade	-	-	-	-	54	8	1%	0.1%
Other	-	-	-	-	2	11	-	0.2%
Surface Treatments in Production Areas								
Bare Soil	-	81	-	13%	2,135	3,704	45%	51%
Cover Crop	-	-	-	-	267	20	6%	0.3%
Plastic	-	-	-	-	2,090	2,432	44%	33%
Weed Cloth	-	-	-	-	75	33	2%	0.5%
Mulch	-	-	-	-	290	252	6%	3%
Gravel	-	-	-	-	-	-	-	-
Other	-	553	-	87%	86	976	2%	13%
Irrigation Systems in Production Areas								
Drip Only	-	-	-	-	1,444	2,475	31%	34%
Microsprinkler/Drip	-	-	-	-	859	1,253	18%	17%
Microsprinkler	-	-	-	-	295	302	6%	4%
Overhead Sprinkler	553	553	100%	87%	382	1,114	8%	15%
Overhead/Drip	-	81	-	13%	1,980	2,130	42%	29%
Furrow Flood	-	-	-	-	52	41	1%	1%
Hand Watering	-	-	-	-	9	9	0.2%	0.1%
Other	-	-	-	-	-	-	-	-

* Value for 2017 is for Raspberries & Blueberries combined

Table 29. Mugu Lagoon Responsibility Area Grower BMPs

Survey Question	Units	01T_ODD3_EDI Site Drainage Only				Mugu Lagoon Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	553	634	100%	100%	4,112	5,447	88%	87%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	553	634	100%	100%	3,242	5,364	69%	85%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	553	553	100%	87%	2,842	3,943	61%	67%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	-	-	-	-	2,016	2,888	43%	46%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	-	-	-	-	1,296	1,542	28%	24%
Q5a: Are soil residual nitrate tests done?	Acres	553	634	100%	100%	3,758	5,281	80%	84%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	553	634	100%	100%	3,758	5,281	80%	84%
Q6: Are leaf/petiole tests conducted?	Acres	553	634	100%	100%	3,944	5,010	84%	87%
Q7a: Is nitrate measured in fertigation water?	Acres	553	574	100%	91%	3,224	4,359	69%	69%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	553	574	100%	91%	3,224	4,359	69%	69%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	-	-	N/A	N/A	2,077	2,537	70%	69%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	-	-	N/A	N/A	298	530	6%	8%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	-	-	N/A	N/A	343	570	115%	108%
Q11: How much non-cropped area is bare soil?	Acres	27	77	5%	100%	224	530	5%	46%
Q12a: How many feet of ditches exist?	Feet	26,200	28,700	N/A	N/A	229,945	620,916	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	-	1,800	-	6%	31,596	104,276	14%	17%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	212	496	5%	8%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	212	283	5%	4%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	-	-	300	326	6%	5%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	553	634	100%	100%	4,697	6,160	100%	98%
Q16: Is an IPM Plan being implemented?	Acres	553	553	100%	87%	4,563	6,124	97%	97%
Q17a: How many acres are organically farmed?	Acres	-	-	-	-	486	412	10%	7%
Q17b: How many acres are conventionally farmed?	Acres	553	634	100%	100%	4,211	5,978	90%	95%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	553	553	100%	87%	1,533	2,575	33%	41%
Q19: Runoff from how many acres is treated or detained?	Acres	114	114	21%	18%	717	961	15%	15%

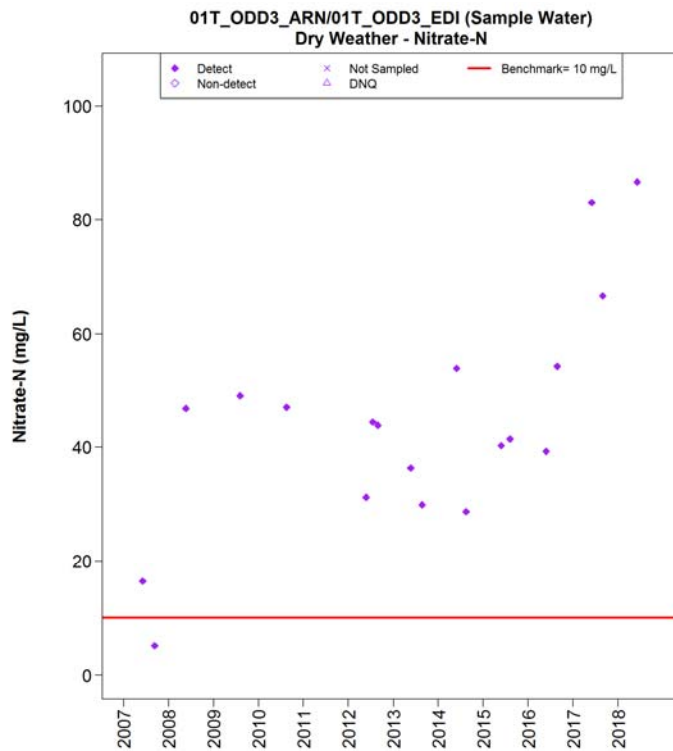


Figure 10. Dry Weather Nitrate Concentrations at Waiver Benchmark Site 01T_ODD3_EDI

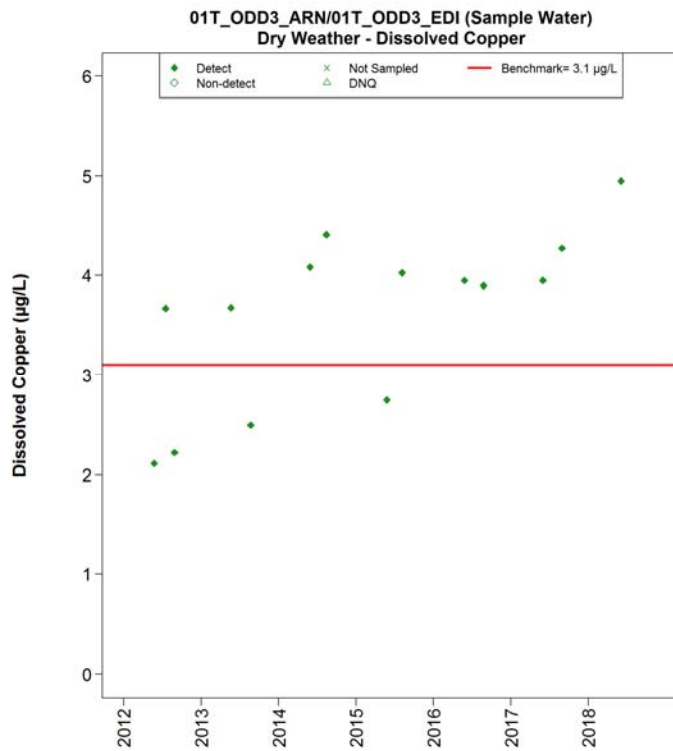


Figure 11. Dry Weather Dissolved Copper Concentrations at Waiver Benchmark Site 01T_ODD3_EDI

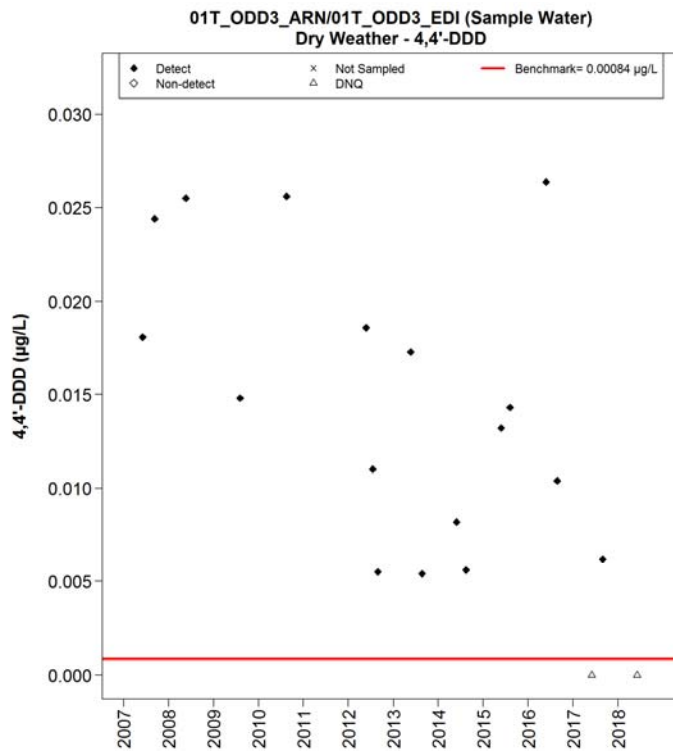


Figure 12. Dry Weather DDD Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_EDI

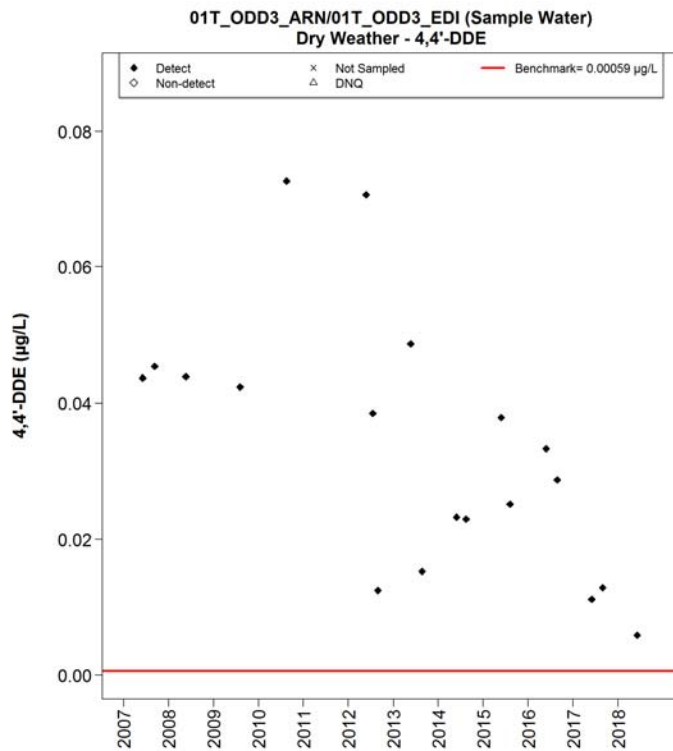


Figure 13. Dry Weather DDE Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_EDI

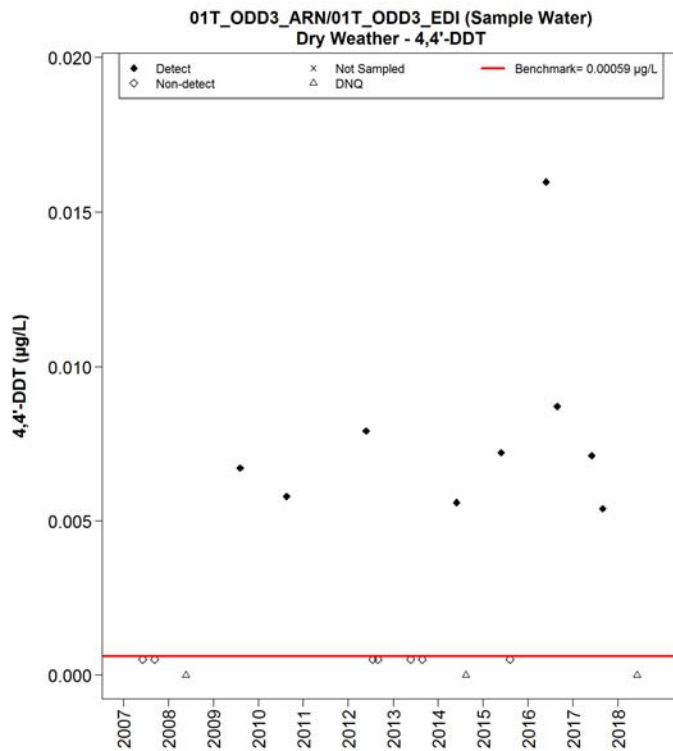


Figure 14. Dry Weather DDT Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_EDI

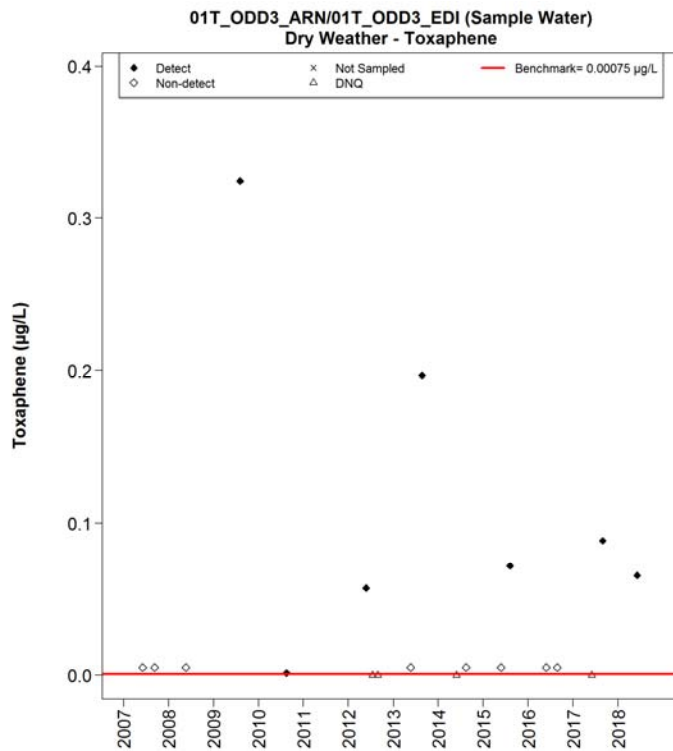


Figure 15. Dry Weather Toxaphene Concentrations at Waiver Benchmark Site 01T_ODD3_EDI

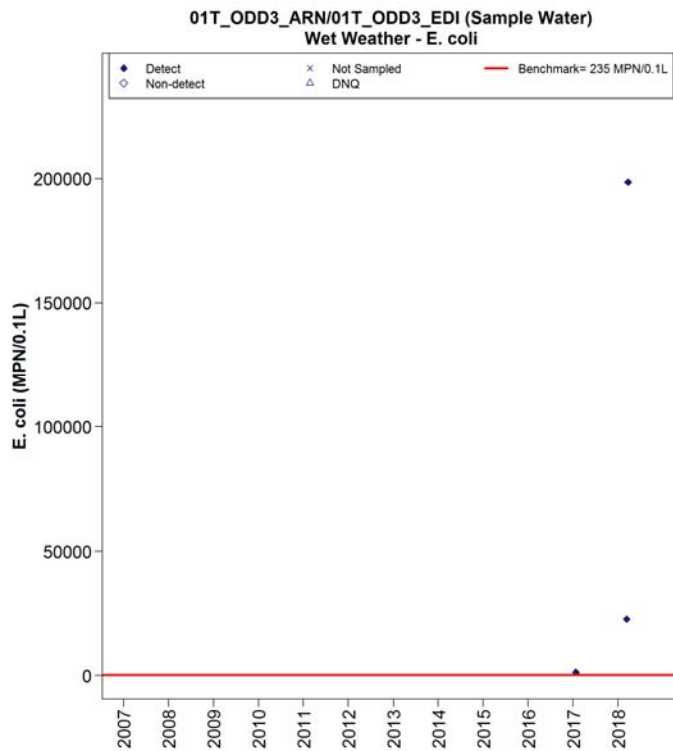


Figure 16. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 01T_ODD3_EDI

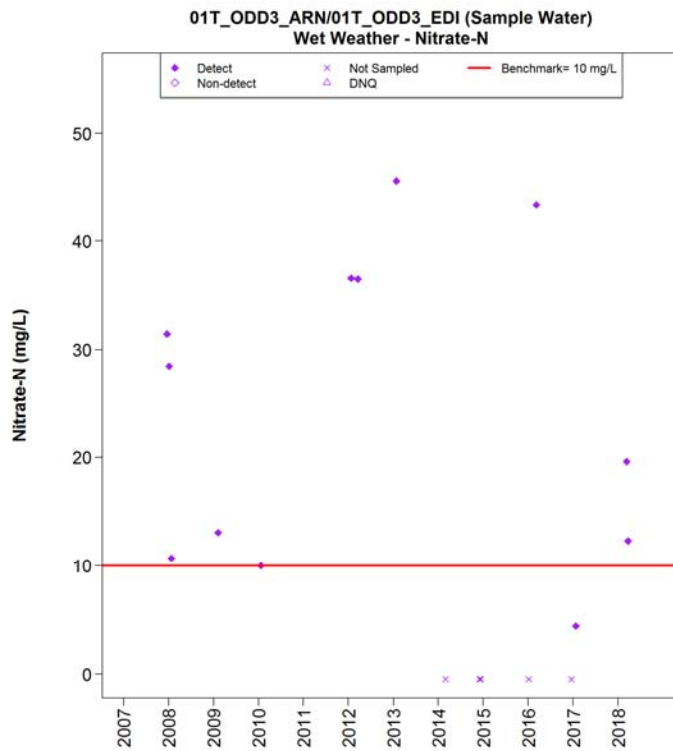


Figure 17. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site 01T_ODD3_EDI

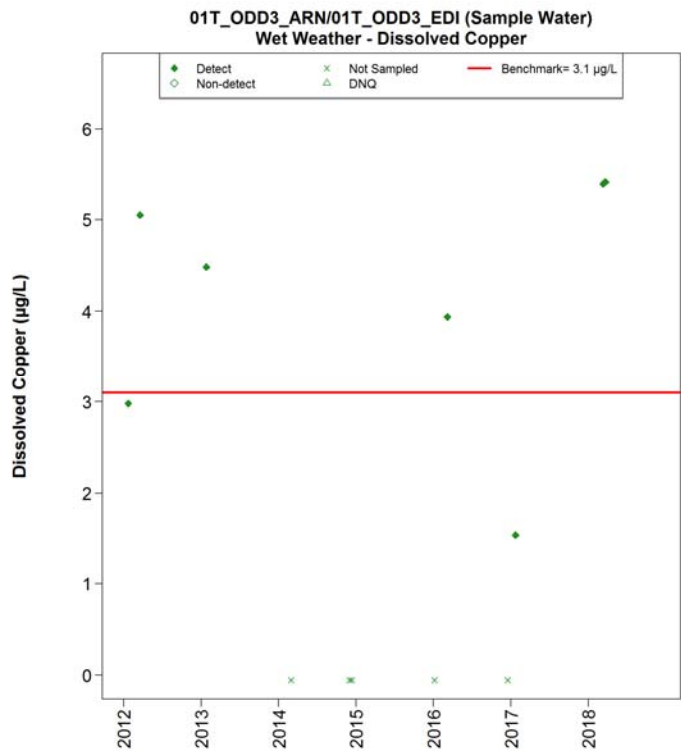


Figure 18. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 01T_ODD3_EDI

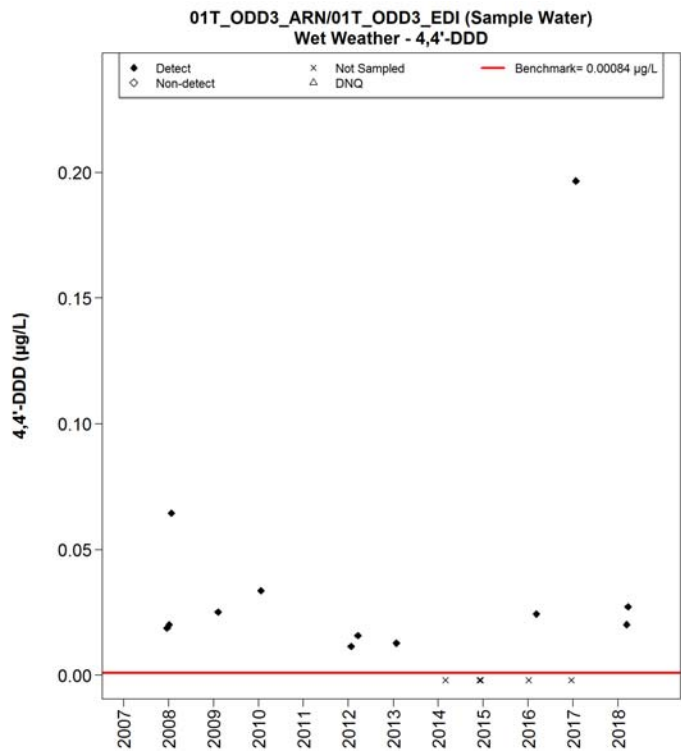


Figure 19. Wet Weather DDD Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_EDI

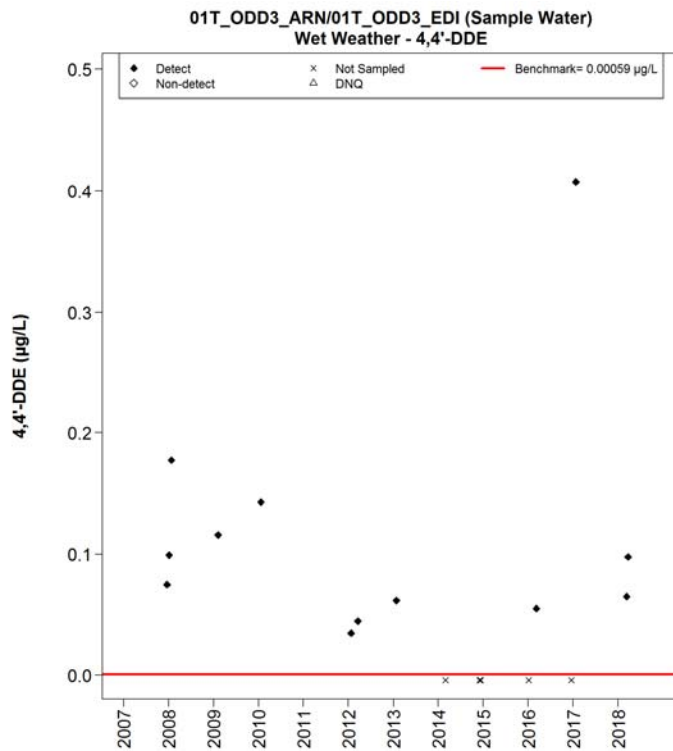


Figure 20. Wet Weather DDE Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_EDl

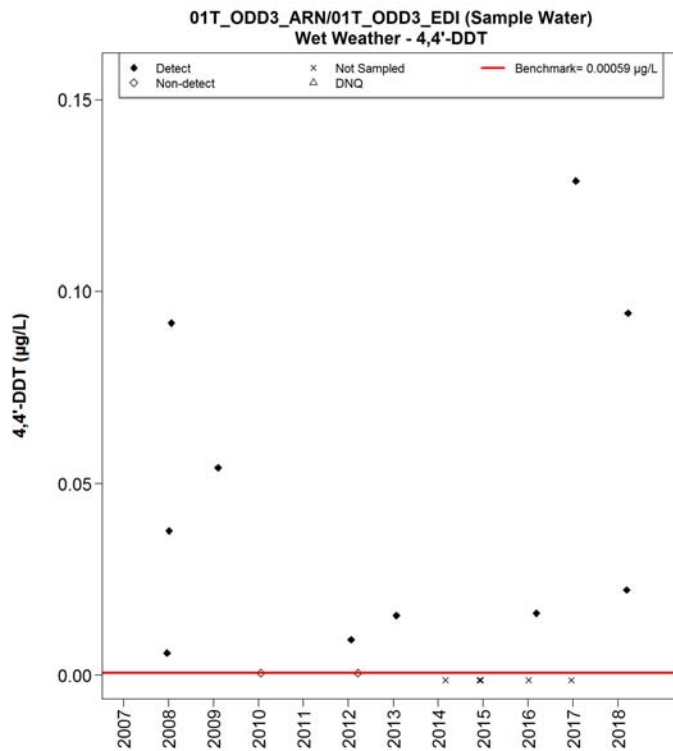


Figure 21. Wet Weather DDT Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_EDl

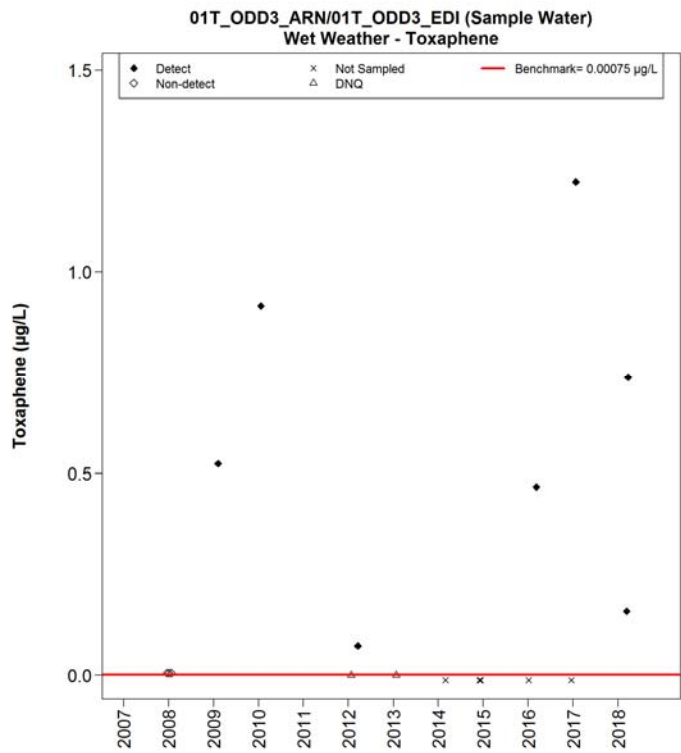


Figure 22. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 01T_ODD3_EDI

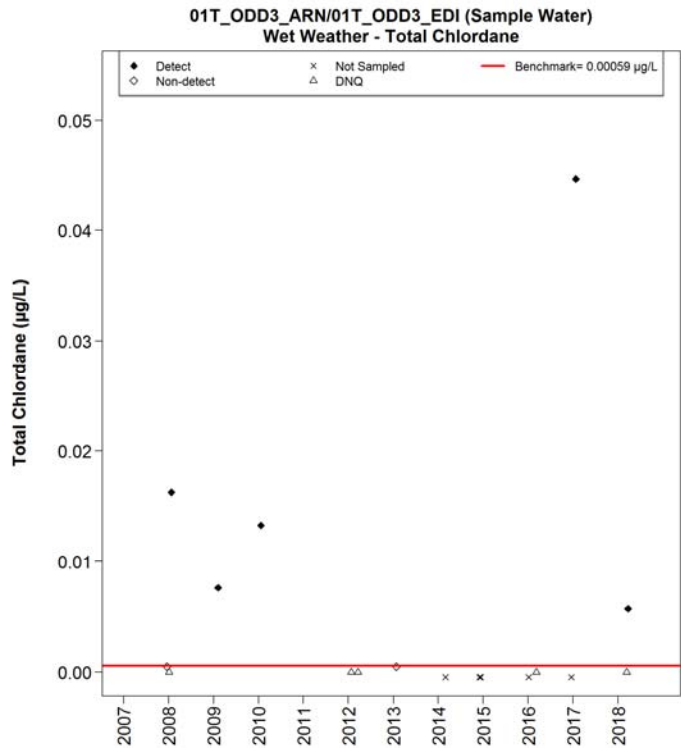


Figure 23. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 01T_ODD3_EDI

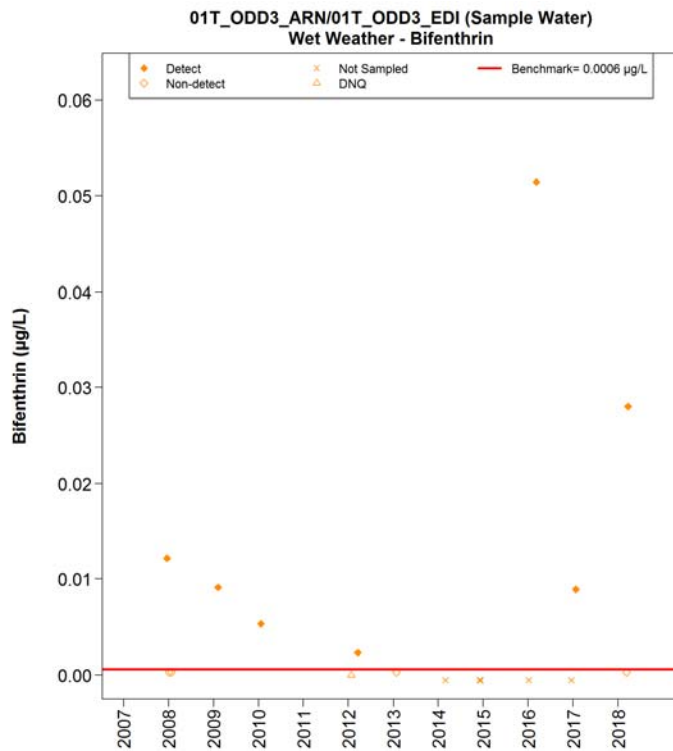


Figure 24. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site and TMDL LA Site 01T_ODD3_EDI

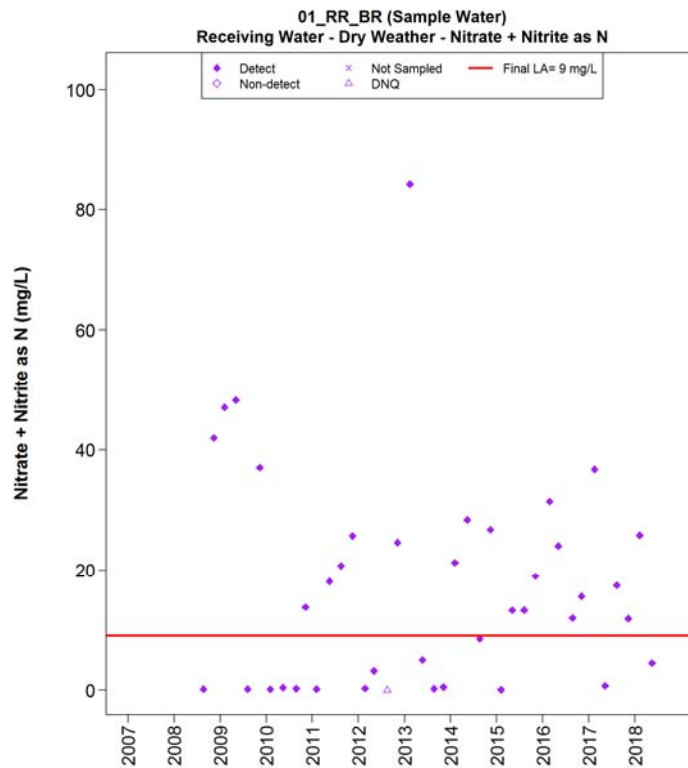


Figure 25. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 01_RR_BR

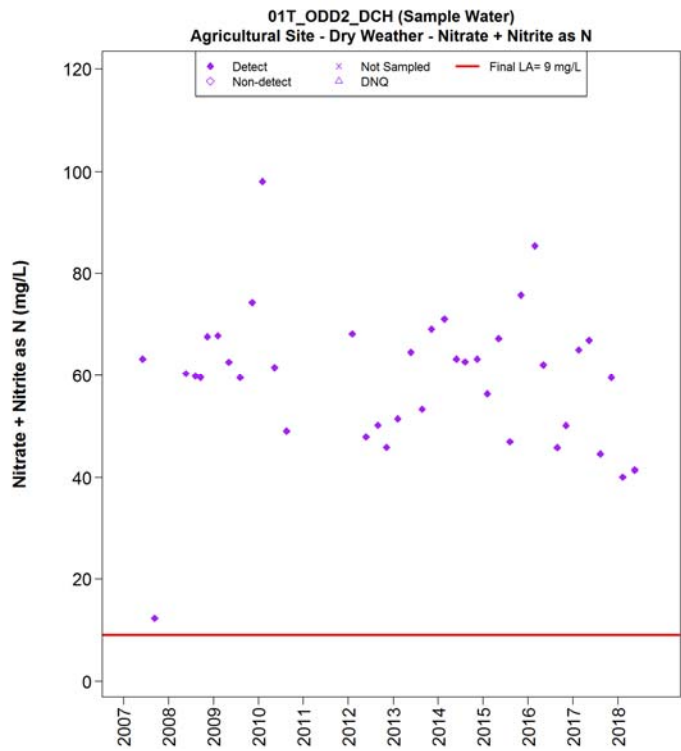


Figure 26. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 01T_ODD2_DCH

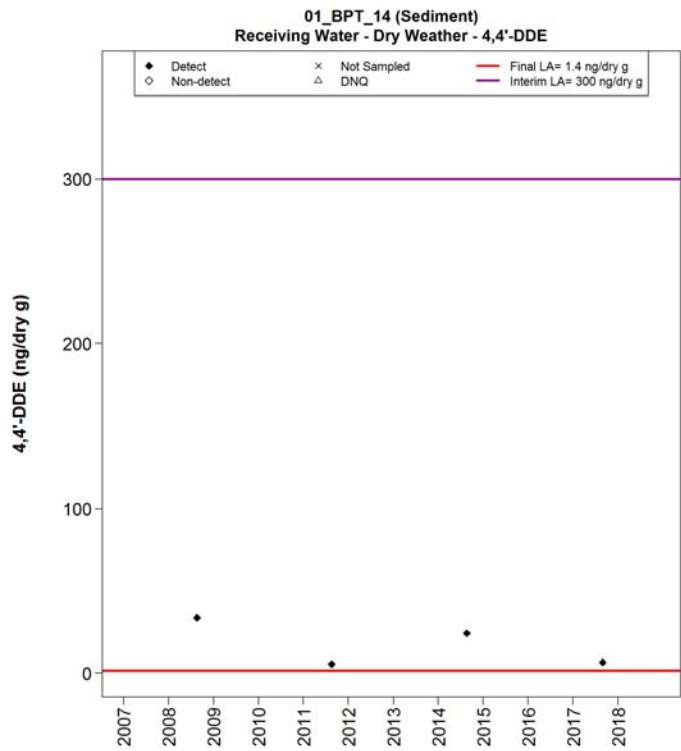


Figure 27. Dry Weather DDE Concentrations at TMDL LA Site 01_BPT_14

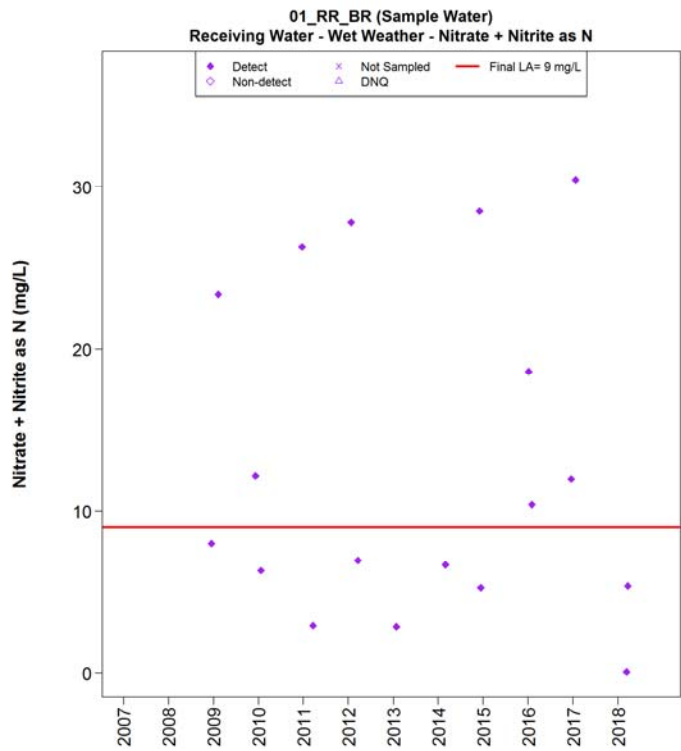


Figure 28. Wet Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 01_RR_BR

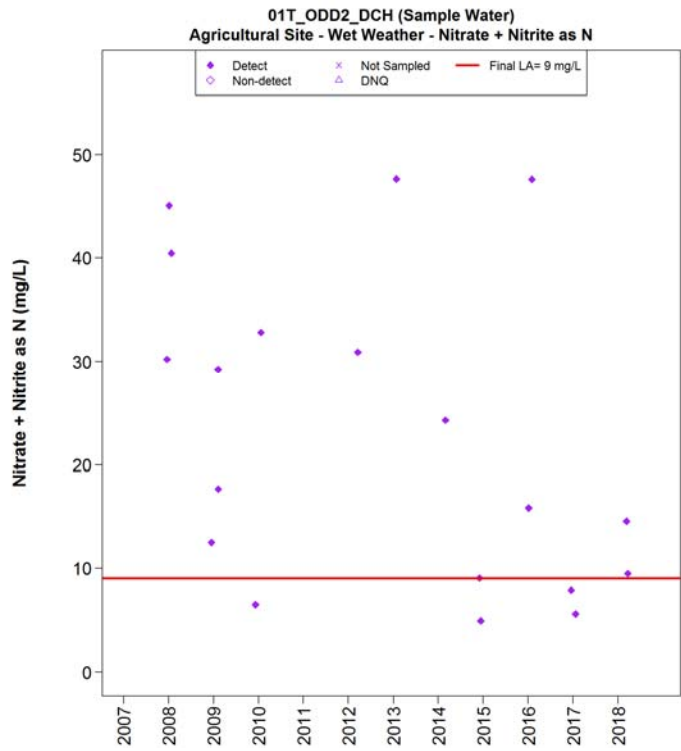


Figure 29. Wet Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 01T_ODD2_DCH

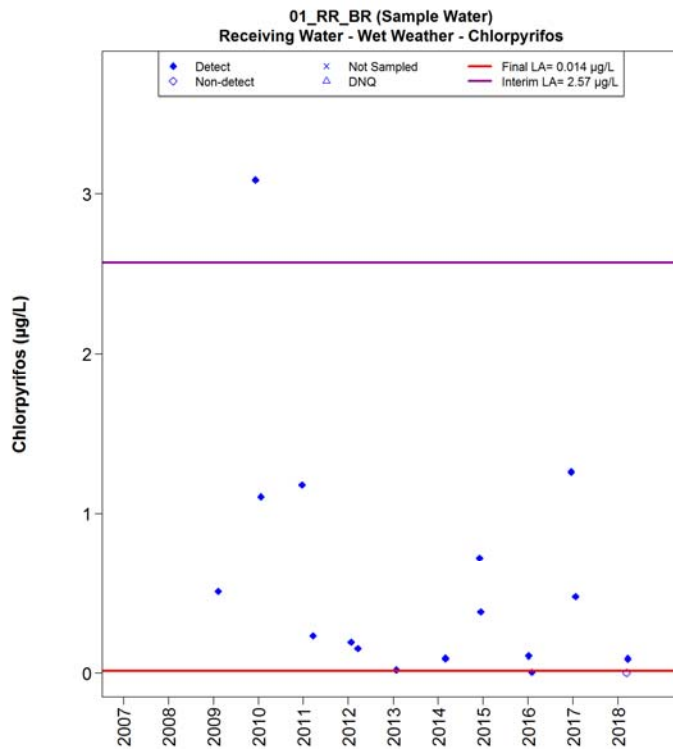


Figure 30. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 01_RR_BR

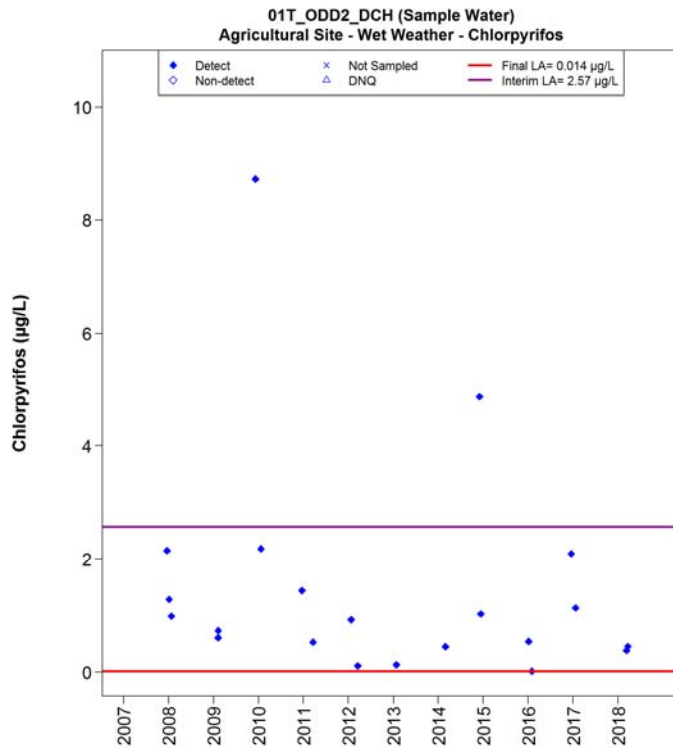


Figure 31. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 01T_ODD2_DCH

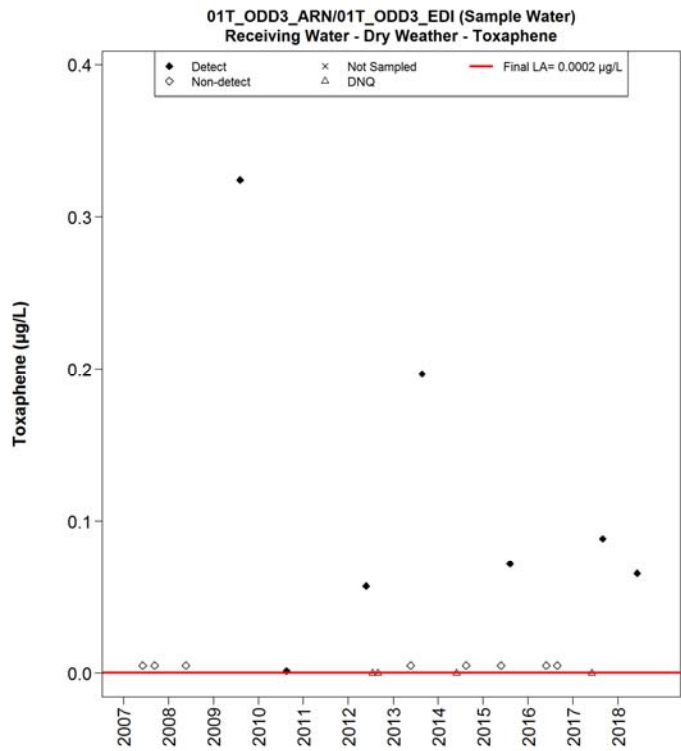


Figure 32. Dry Weather Toxaphene Concentrations at TMDL LA Site 01T_ODD3_ED1

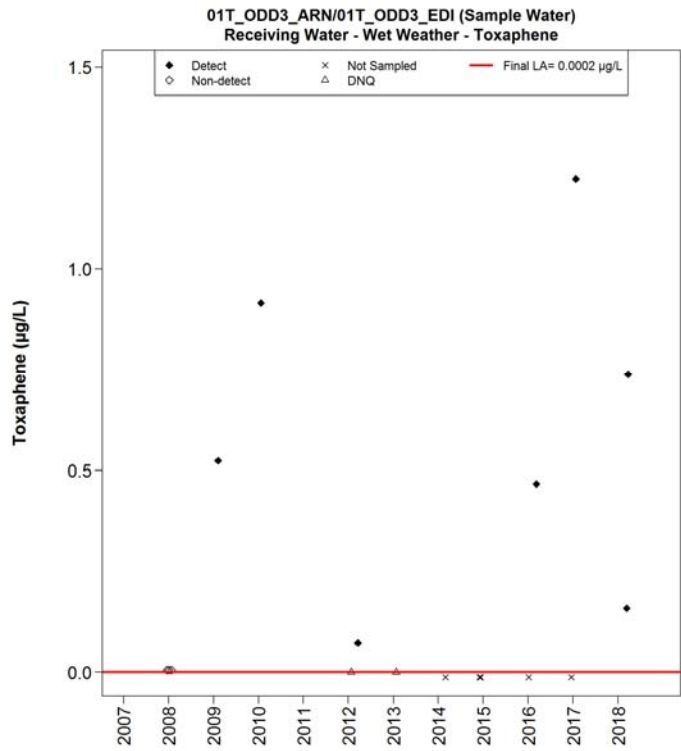


Figure 33. Wet Weather Toxaphene Concentrations at TMDL LA Site 01T_ODD3_ED1

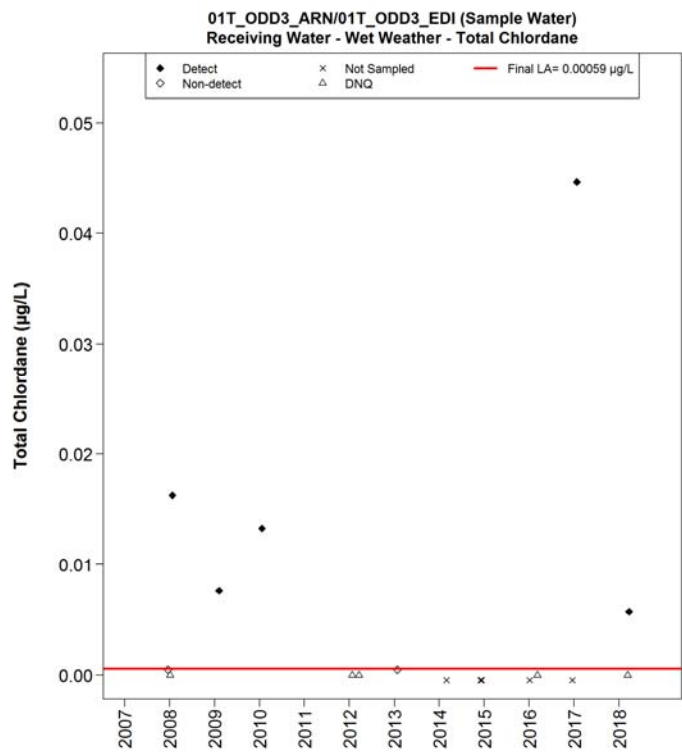


Figure 34. Wet Weather Total Chlordane Concentrations at TMDL LA Site 01T_ODD3_ED1

Table 30. Summary of Benchmark Exceedance Evaluation for Mugu Lagoon Responsibility Area (outside the Oxnard Drain #3 TMDL area)

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
<i>E. coli</i>					●			<input checked="" type="checkbox"/>
Nutrients								
Nitrate-N	●			<input checked="" type="checkbox"/>	●			<input checked="" type="checkbox"/>
Nitrate-N + Nitrite-N		● ²	● ³	<input checked="" type="checkbox"/>		● ²	● ³	<input checked="" type="checkbox"/>
Metals and Selenium								
Dissolved Copper	●			<input checked="" type="checkbox"/>	●			<input checked="" type="checkbox"/>
OC Pesticides (Legacy)								
DDD	●			<input checked="" type="checkbox"/>	●			<input checked="" type="checkbox"/>
DDE	●	● ^{4,5}		<input checked="" type="checkbox"/>	●	● ^{4,5}		<input checked="" type="checkbox"/>
DDT	●			<input checked="" type="checkbox"/>	●			<input checked="" type="checkbox"/>
Toxaphene	●			<input checked="" type="checkbox"/>	●			<input checked="" type="checkbox"/>
Chlordane					●			<input checked="" type="checkbox"/>
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos						● ^{2,5}	● ^{3,5}	<input checked="" type="checkbox"/>
Bifenthrin					●			<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmark exceedances is 01T_ODD3_ED1.
2. CCW Nitrogen, Toxicity, and Metals TMDL receiving water site is 01_RR_BR.
3. Agricultural land use site for the Nitrogen, Toxicity, and Metals TMDLs is 01T_ODD2_DCH.
4. CCW OC Pesticides TMDL receiving water site is 01_BPT_14. TMDL compliance is measured in sediment in receiving water and this location is downstream of the responsibility area discharges. Though sediment is collected during dry weather, the results are applied to both wet and dry weather to ensure management practices minimize sediment transport year-round.
5. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.

Table 31. Summary of Benchmark Exceedance Evaluation for Mugu Lagoon Responsibility Area (within the Oxnard Drain #3 TMDL area)

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
<i>E. coli</i>					●			<input checked="" type="checkbox"/>
Nutrients								
Nitrate-N	●			<input checked="" type="checkbox"/>	●			<input checked="" type="checkbox"/>
Nitrate-N + Nitrite-N		● ²	● ³	<input checked="" type="checkbox"/>		● ²	● ³	<input checked="" type="checkbox"/>
Metals and Selenium								
Dissolved Copper	●			<input checked="" type="checkbox"/>	●			<input checked="" type="checkbox"/>
OC Pesticides (Legacy)								
DDD	●	● ⁴		<input checked="" type="checkbox"/>	●	● ⁴		<input checked="" type="checkbox"/>
DDE	●	● ⁴		<input checked="" type="checkbox"/>	●	● ⁴		<input checked="" type="checkbox"/>
DDT	●	● ⁴		<input checked="" type="checkbox"/>	●	● ⁴		<input checked="" type="checkbox"/>
Toxaphene	●	● ⁴		<input checked="" type="checkbox"/>	●	● ⁴		<input checked="" type="checkbox"/>
Chlordane				<input checked="" type="checkbox"/>	●	● ⁴		<input checked="" type="checkbox"/>
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos						● ^{2,5}	● ^{3,5}	<input checked="" type="checkbox"/>
Bifenthrin					●	● ⁴		<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmark exceedances is 01T_ODD3_ED1.
2. CCW Nitrogen, Toxicity, and Metals TMDL receiving water site is 01_RR_BR.
3. Agricultural land use site for the Nitrogen, Toxicity, and Metals TMDLs is 01T_ODD2_DCH.
4. Oxnard Drain #3 TMDL LAs were compared to data from 01T_ODD3_ED1. LAs for Bifenthrin, DDD, DDE, and DDT are equivalent to the Waiver benchmarks. The LAs for toxaphene and chlorpyrifos are lower than the Waiver benchmarks.
5. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.

Table 32. BMPs for Additional Implementation in the Mugu Lagoon Responsibility Area (outside the Oxnard Drain #3 TMDL area)

Exceedance Condition								Survey Question #	BMP	% of Total Applicable Surveyed Units	Additional Implementation Needed?
Bacteria	Nutrients		Metals		Legacy Pesticides		Current Pesticides				
Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet			Mugu Lagoon Responsibility Area	
	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	50%	Yes
	x	x	x		x	x		Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	55%	Yes
	x	x	x		x	x		1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	87%	Yes
	x	x	x					2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	85%	Yes
	x	x						3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	67%	Yes
	x	x						4	Certified nutrient management plan has been prepared for the property	24%	Yes
	x	x						5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	84%	Yes
	x	x						6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	87%	Yes
	x	x						7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	69%	Yes
	x	x						8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	69%	Yes
	x	x	x	x	x	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	108%	No
		x		x	x	x	x	11	How much non-cropped area is bare soil	46%	Yes
x	x	x	x	x	x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	17%	Yes
x	x	x	x	x	x	x	x	13	Grassed waterways are used	8%	Yes
x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	4%	Yes
							x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	98%	No
							x	16	An integrated pest management plan is implemented	97%	Yes
	x	x	x		x	x		18	How many acres produce irrigation runoff	41%	Yes
x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	15%	Yes

[a] Waiver specified practice for exceedances of copper and current use pesticides.

Table 33. BMPs for Additional Implementation in the Mugu Lagoon Responsibility Area (within the Oxnard Drain #3 TMDL area)

Exceedance Condition								Survey Question #	BMP	% of Total Applicable Surveyed Units	Additional Implementation Needed?
Bacteria	Nutrients		Metals		Legacy Pesticides	Current Pesticides	01T_ODD3 EDI Site Drainage Only				
Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet				
	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	87%	Yes
	x	x	x					Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	0%	Yes
	x		x		x			1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	100%	No
	x		x					2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	100%	No
	x							3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	87%	Yes
	x	x						4	Certified nutrient management plan has been prepared for the property	0%	Yes
	x	x						5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	100%	No
	x	x						6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	100%	No
	x	x						7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	91%	Yes
	x	x						8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	N/A	No
	x	x	x	x	x	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	NA [a]	No
		x		x		x	x	11	How much non-cropped area is bare soil	100%	No
x	x	x	x	x	x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	6%	Yes
x	x	x	x	x	x	x	x	13	Grassed waterways are used	0%	Yes
x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	0%	Yes
							x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	No
							x	16	An integrated pest management plan is implemented	87%	Yes
	x		x		x			18	How many acres produce irrigation runoff	87%	Yes
x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	18%	Yes

[a] Zero acres reported as sloped within the surveyed site drainage.

Table 34. Proposed Best Management Practices for the Mugu Lagoon Responsibility Area within the Oxnard Drain #3 TMDL Area

Water Quality Issues									BMPs
Bacteria	Nutrients		Metals		Legacy Pesticides		Current Use Pesticides		
Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Wet Weather	
	x	x	x	x	x	x		x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x		x		x				Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x		x		x				Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
	x		x						Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
	x								Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
	x	x							Prepare a certified nutrient management plan for the property (required)
	x	x							Conduct soil residual nitrate tests and use results to adjust fertilizer application
	x	x							Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
	x	x							Analyze irrigation water nitrate and use results to adjust fertilizer application
	x	x							Adjust fertilizer application to account for nutrients provided by cover crops
	x	x	x	x	x	x		x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
		x		x			x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel

Water Quality Issues								
Bacteria	Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	
Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	BMPs
							x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
							x	Implement an integrated pest management plan
	x		x		x			Avoid/prevent irrigation runoff
<i>Structural Non-Treatment BMPs</i>								
x	x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	x	Use vegetated filter strips
<i>Optional Treatment BMPs</i>								
x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Table 35. Proposed Best Management Practices for the Mugu Lagoon Responsibility Area

Water Quality Issues								BMPs
Bacteria	Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	
Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	
	x	x	x	x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x		x		x			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x		x		x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
	x		x					Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
	x							Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
	x	x						Prepare a certified nutrient management plan for the property
	x	x						Conduct soil residual nitrate tests and use results to adjust fertilizer application
	x	x						Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
	x	x						Analyze irrigation water nitrate and use results to adjust fertilizer application
	x	x						Adjust fertilizer application to account for nutrients provided by cover crops
	x	x	x	x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
		x		x			x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
							x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
							x	Implement an integrated pest management plan
	x		x		x			Avoid/prevent irrigation runoff

Water Quality Issues								BMPs	
Bacteria		Nutrients		Metals		Legacy Pesticides			Current Use Pesticides
Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather		
								<i>Non-Structural Treatment BMPs</i>	
x	x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	
x	x	x	x	x	x	x	x	Use grassed waterways	
x	x	x	x	x	x	x	x	Use vegetated filter strips	
								<i>Optional Treatment BMPs</i>	
x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	

Etting-Wood Responsibility Area

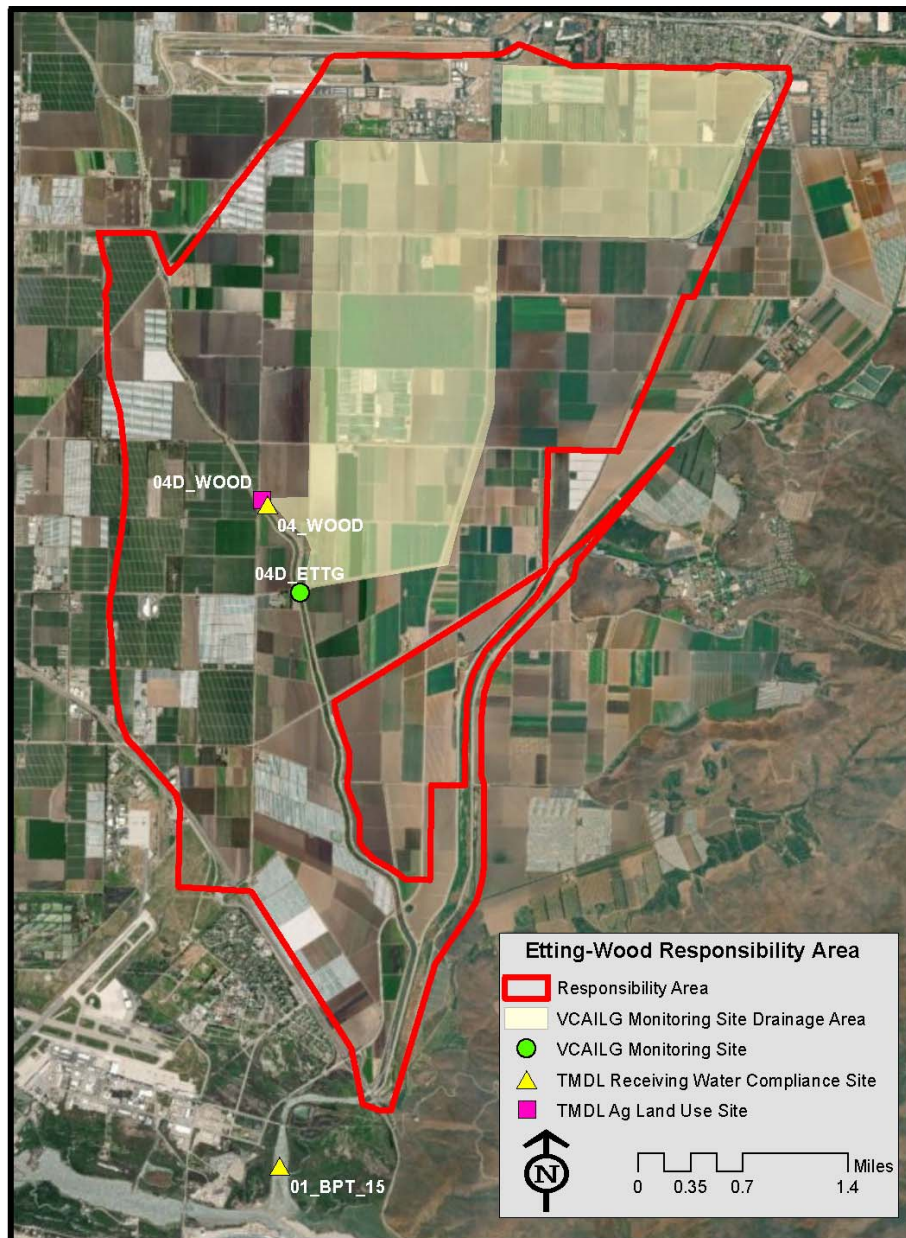


Figure 35. Etting-Wood Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Etting-Wood responsibility area are illustrated in Figure 35. The monitoring sites that serve to evaluate TMDL LA benchmark attainment are as follows:

- 01_BPT_15 is a CCW OC Pesticides and PCBs TMDL Receiving Water Compliance Site
- 04_WOOD is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Receiving Water Compliance Site
- 04D_WOOD is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 36. Etting-Wood Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site 04D_ETTG
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	9,246	3,251
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	97	3
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	8,804	3,247
Assessed Acres from Agricultural Parcel List belonging to Non Members	346	1
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	8,139	3,054
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.92	0.94
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	320	1
Total Estimated Irrigated Acres (Member plus Non Member)	8,458	3,054
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	96%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	6,470	2,442
Percent of Total Estimated Irrigated Acres that were Surveyed	76%	80%
Percent of VCAILG Member Irrigated Acres that were Surveyed	79%	80%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 37. Etting-Wood Responsibility Area Crop Types and General Production Practices

Crop or Practice	04D_ETTG Site Drainage Only				Etting-Wood Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	251		13%	-	264	782	9%	12.1%
Blueberries	-*		-*	-	275*	-	9%*	-
Raspberries		126		5%	819			12.7%
Row Crop	1,353	1,980	72%	81%	2,247	4,415	77%	68.2%
Orchard	144	192	8%	8%	69	267	2%	4.1%
Nursery	132	142	7.0%	6%	8	152	0.3%	2.3%
Flower	-	-	-	-	35	35	1%	0.5%
Sod	-	-	-	-	-	-	-	-
Other	2	2	0.1%	0.1%	-	2	-	0.02%
Overhead Cover in Production Areas								
Hoop House	-	126	-	5%	15	851	0.5%	13.2%
No Cover	219	1,938	12%	79%	118	5,156	4%	79.7%
Greenhouse	-	143	-	6%	-	152	-	2.4%
Shade	-	-	-	-	-	2	-	0.03%
Other	-	41	-	2%	-	41	-	0.6%
Surface Treatments in Production Areas								
Bare Soil	1,106	2,308	59%	95%	2,632	5,506	91%	85.1%
Cover Crop	351	50	19%	2%	1	50	0%	0.8%
Plastic	262	132	14%	5%	333	805	11%	12.4%
Weed Cloth	-	-	-	-	-	-	-	-
Mulch	-	-	-	-	40	91	1%	1.4%
Gravel	-	-	-	-	-	-	-	-
Other	295	-	16%	-	-	67	-	1.0%
Irrigation Systems in Production Areas								
Drip Only	1,221	1,385	65%	57%	1,360	2,760	47%	42.7%
Microsprinkler/Drip	198	-	11%	-	109	74	4%	1.1%
Microsprinkler	114	155	6%	6%	70	230	2%	3.6%
Overhead Sprinkler	122	5	6%	0.2%	180	202	6%	3.1%
Overhead/Drip	279	895	15%	37%	1,281	3,196	44%	49.4%
Furrow Flood	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-
Other	-	-	-	-	7	-	0.2%	-

* Value for 2017 is for Raspberries & Blueberries combined

Table 38. Etting-Wood Responsibility Area Grower BMPs

Survey Question	Units	04D_ETTG Site Drainage Only				Etting-Wood Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	1,396	1,593	74%	67%	2,129	4,682	78%	80%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	1,212	1,814	64%	76%	1,475	4,381	51%	74%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	460	418	26%	19%	1,011	1,754	35%	31%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	688	651	37%	27%	1,192	2,549	41%	72%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	661	132	35%	6%	1,159	1,684	40%	29%
Q5a: Are soil residual nitrate tests done?	Acres	991	2,204	53%	92%	2,224	4,609	77%	78%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	963	2,176	51%	91%	2,224	4,582	77%	78%
Q6: Are leaf/petiole tests conducted?	Acres	1,243	1,908	66%	84%	2,156	4,423	74%	81%
Q7a: Is nitrate measured in fertigation water?	Acres	617	1,453	33%	61%	870	3,398	30%	58%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	617	1,453	33%	61%	763	3,172	26%	54%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	581	1,019	46%	67%	787	2,131	56%	67%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	-	83	-	3%	-	123	-	2%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	71	83	-	100%	159	502	-	408%
Q11: How much non-cropped area is bare soil?	Acres	84	101	4%	65%	147	409	5%	68%
Q12a: How many feet of ditches exist?	Feet	61,342	82,927	N/A	N/A	119,643	226,298	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	1,850	41,935	3%	51%	38,954	106,248	-	47%
Q13a: Are grassed waterways present?	Acres	132	132	7%	6%	-	227	-	4%
Q13b: How many acres drain to grassed waterways?	Acres	5	5	0.3%	0.2%	-	100	-	2%
Q14: How many acres are treated by vegetated filter strips?	Acres	2	3	0.1%	0.1%	-	3	-	0.1%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	1,881	2,393	100%	100%	2,898	5,906	100%	100%
Q16: Is an IPM Plan being implemented?	Acres	1,881	2,242	100%	94%	2,863	5,516	99%	93%
Q17a: How many acres are organically farmed?	Acres	42	374	2%	16%	134	660	5%	11%
Q17b: How many acres are conventionally farmed?	Acres	1,840	2,052	98%	86%	2,765	5,540	95%	94%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	525	705	28%	29%	876	2,434	30%	41%
Q19: Runoff from how many acres is treated or detained?	Acres	493	422	26%	18%	80	501	3%	8%

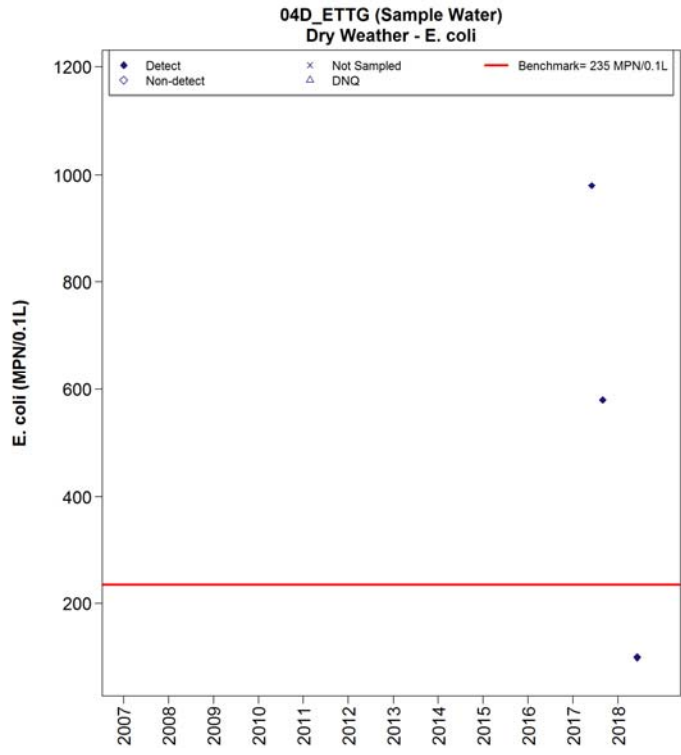


Figure 36. Dry Weather E. coli Concentrations at Waiver Benchmark Site 04D_ETTG

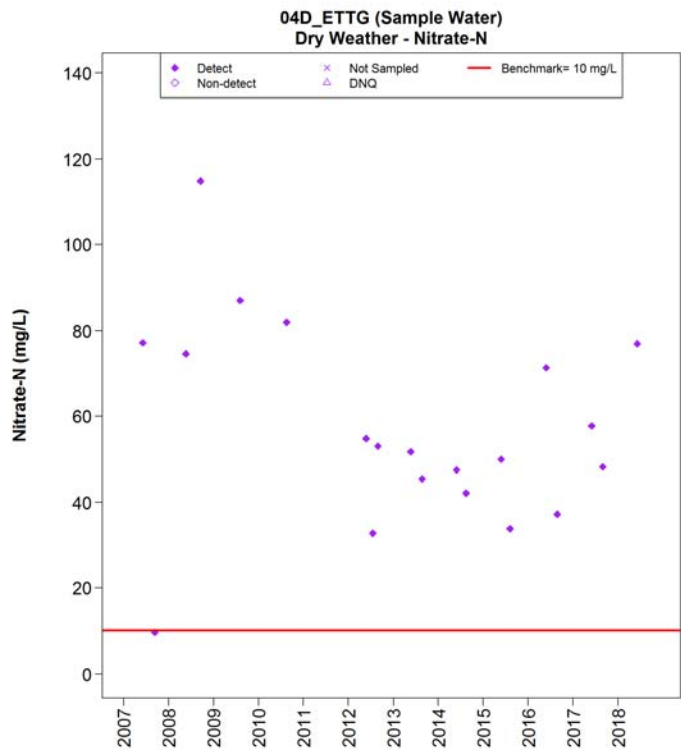


Figure 37. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_ETTG

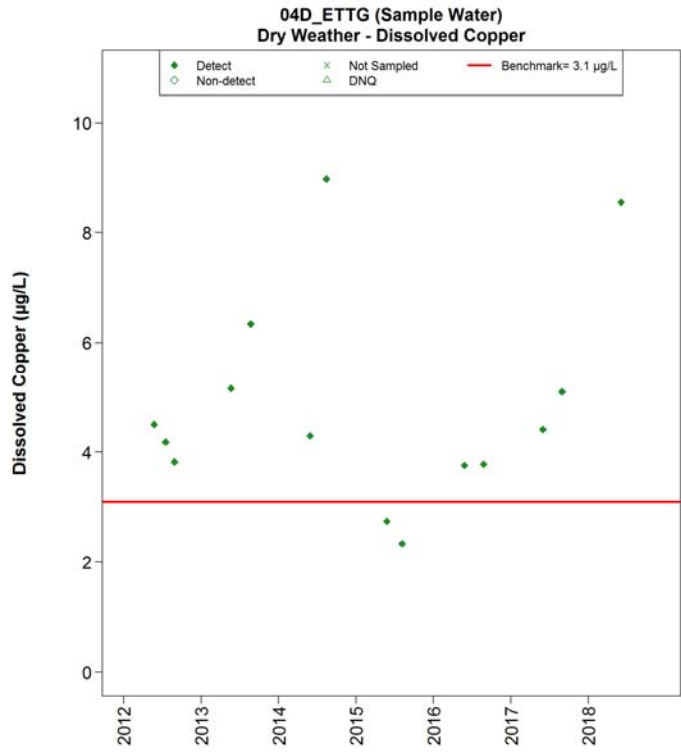


Figure 38. Dry Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_ETTG

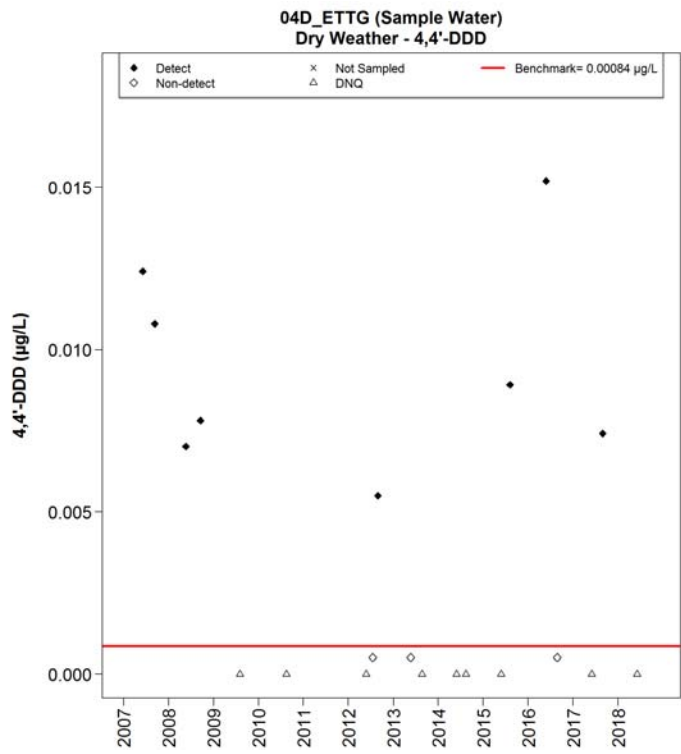


Figure 39. Dry Weather DDD Concentrations at Waiver Benchmark Site 04D_ETTG

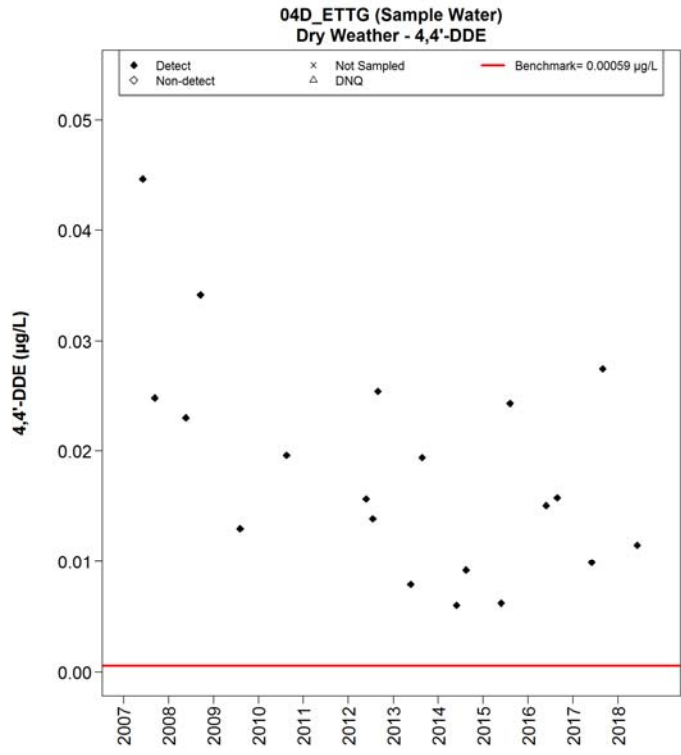


Figure 40. Dry Weather DDE Concentrations at Waiver Benchmark Site 04D_ETT

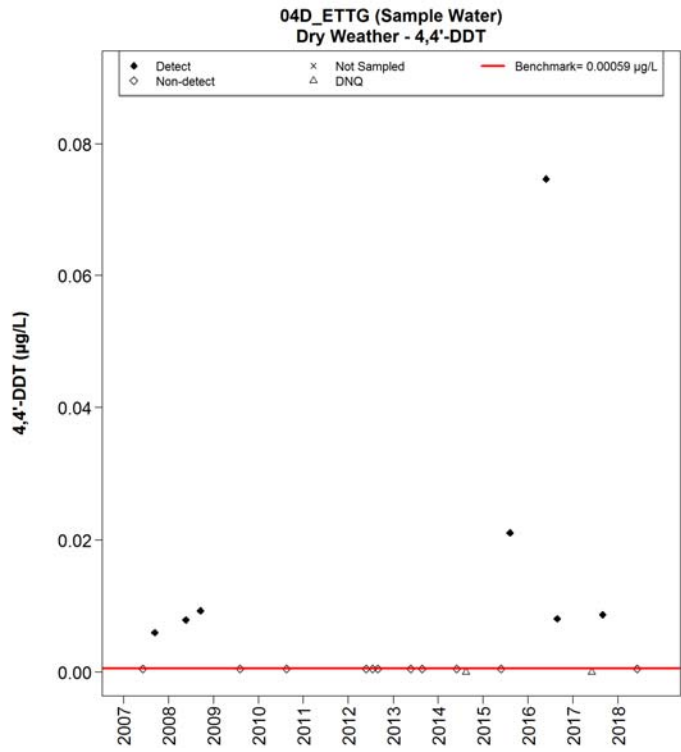


Figure 41. Dry Weather DDT Concentrations at Waiver Benchmark Site 04D_ETT

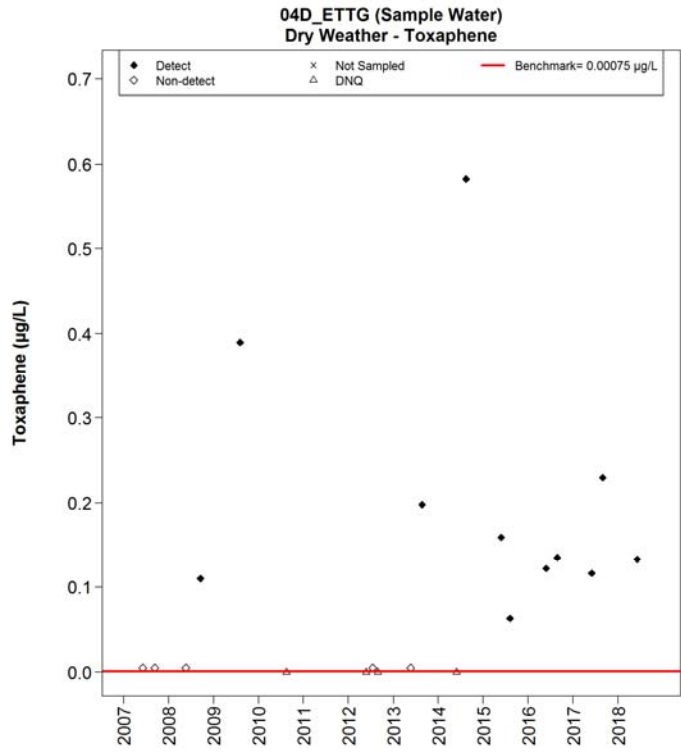


Figure 42. Dry Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_ETTG

Water Column Survival Toxicity - Site 04D_ETTG		
Significant Mortality	X	X
No Significant Mortality		
Event	33	37
Date	5/31/2017	6/4/2018

Figure 43. Dry Weather Survival Toxicity at Waiver Benchmark Site 04D_ETTG

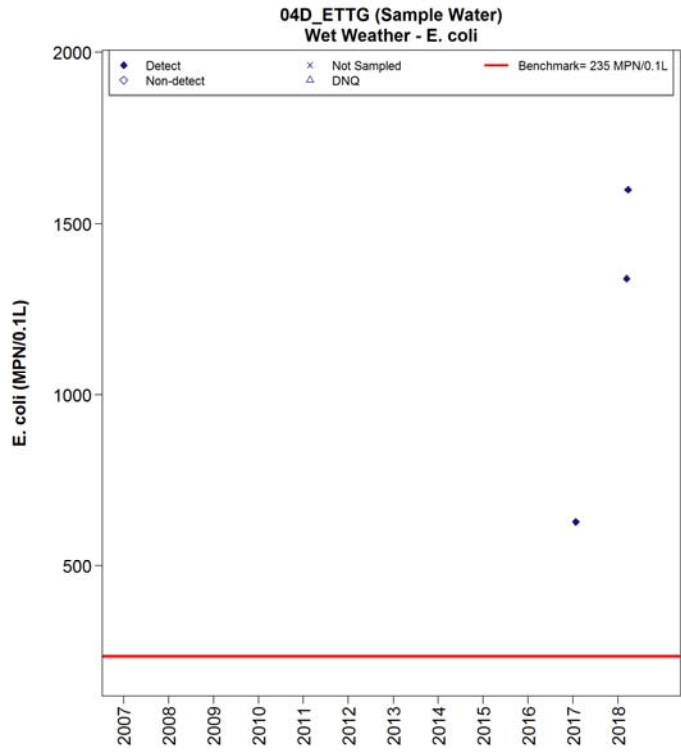


Figure 44. Wet Weather E. coli Concentrations at Waiver Benchmark Site 04D_ETT

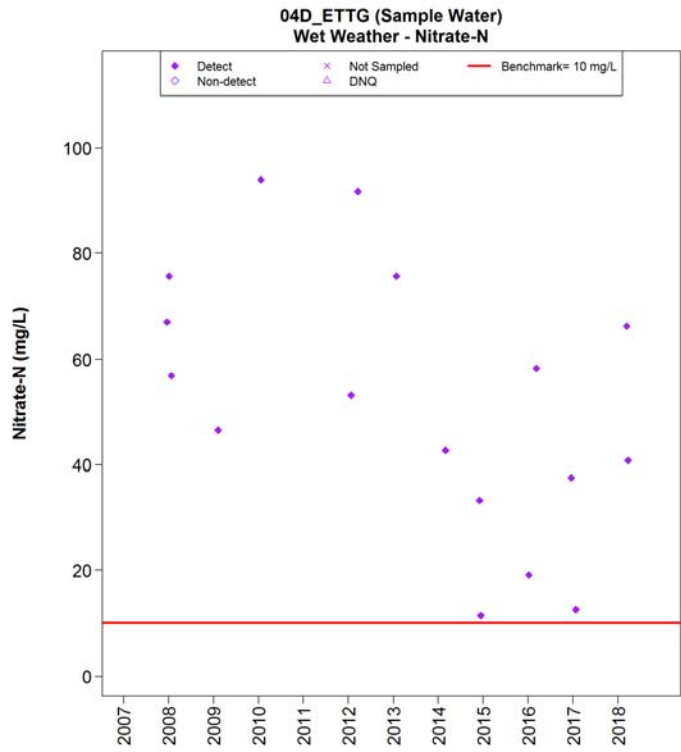


Figure 45. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_ETT

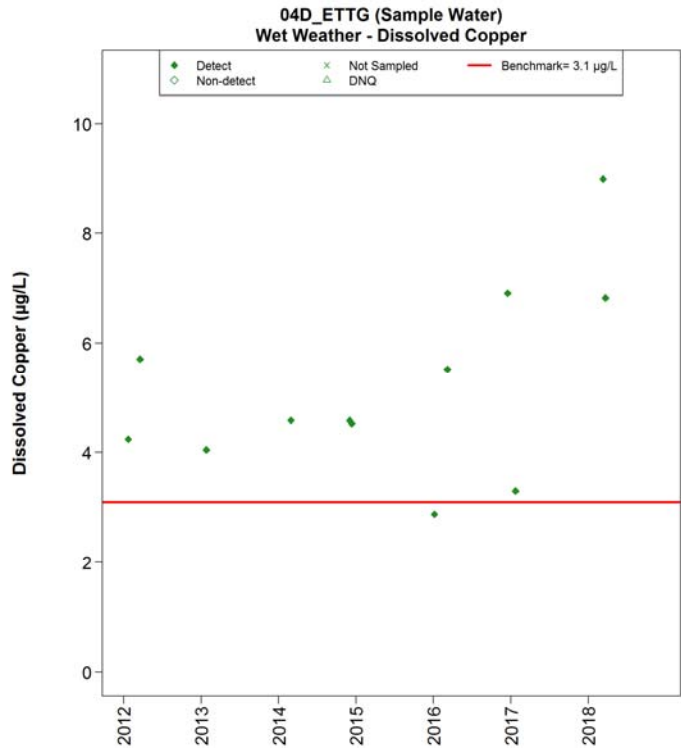


Figure 46. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_ETTG

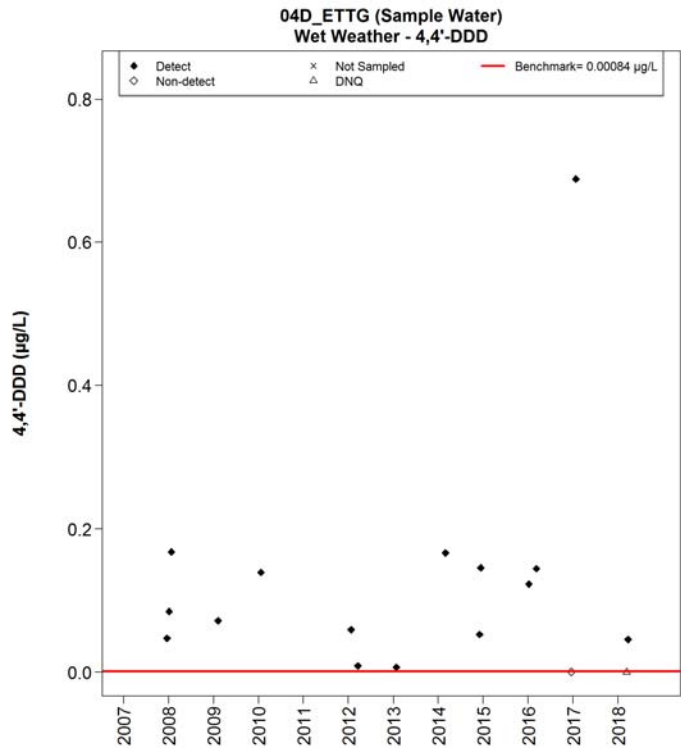


Figure 47. Wet Weather DDD Concentrations at Waiver Benchmark Site 04D_ETTG

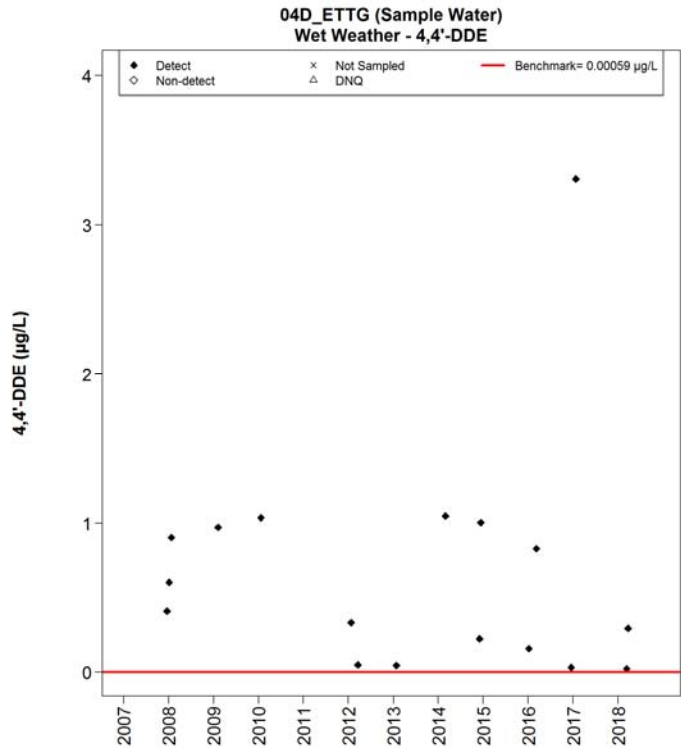


Figure 48. Wet Weather DDE Concentrations at Waiver Benchmark Site 04D_ETTG

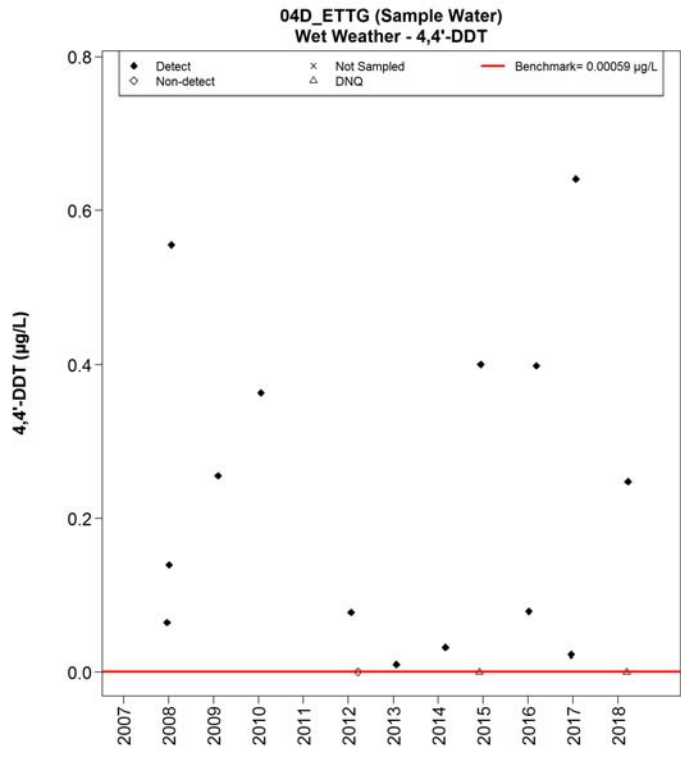


Figure 49. Wet Weather DDT Concentrations at Waiver Benchmark Site 04D_ETTG

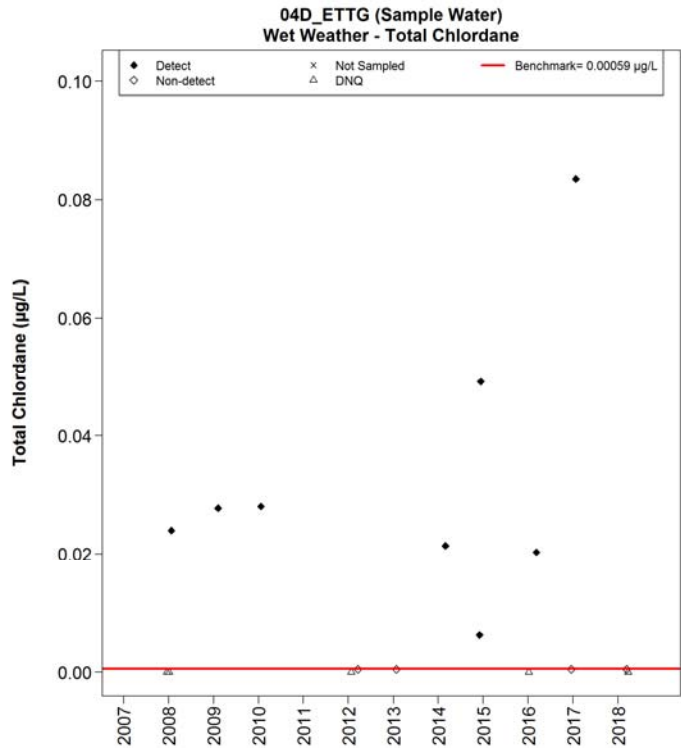


Figure 50. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 04D_ETT

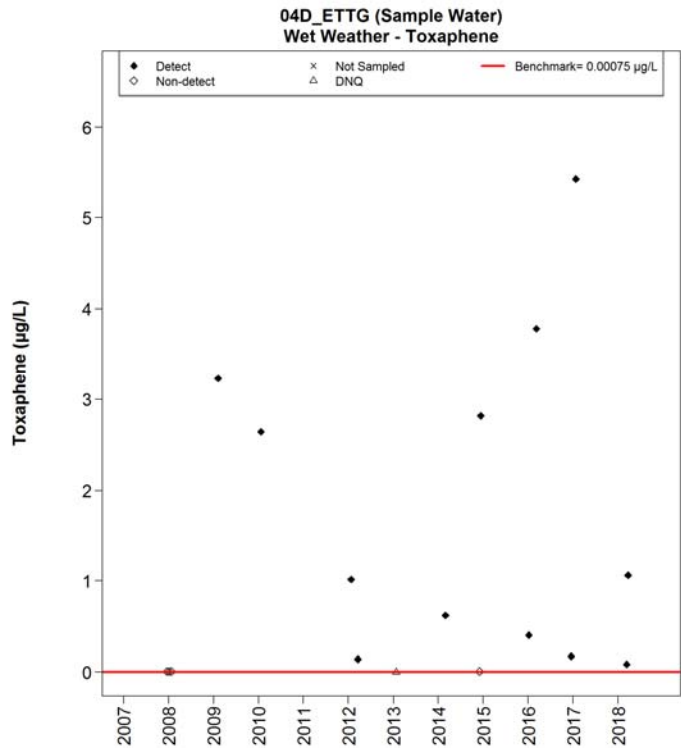


Figure 51. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_ETT

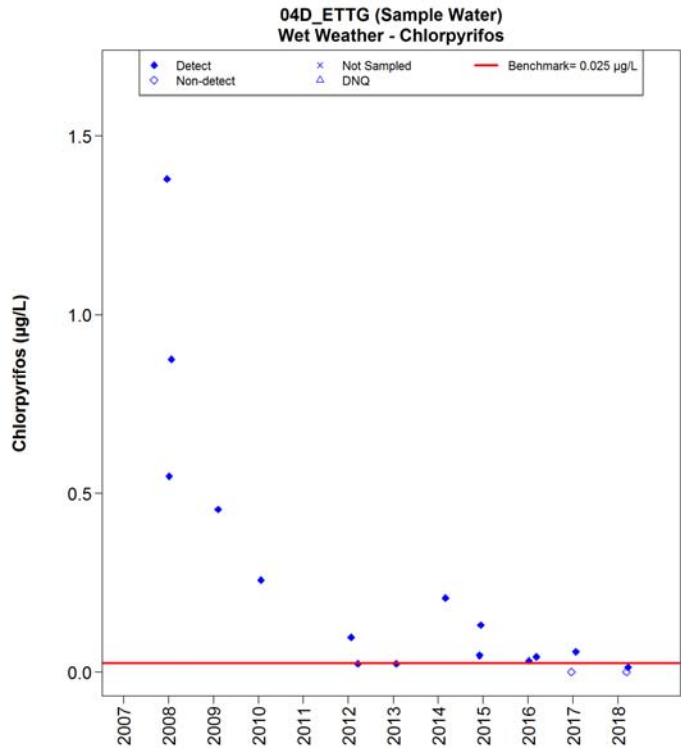


Figure 52. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 04D_ETTG

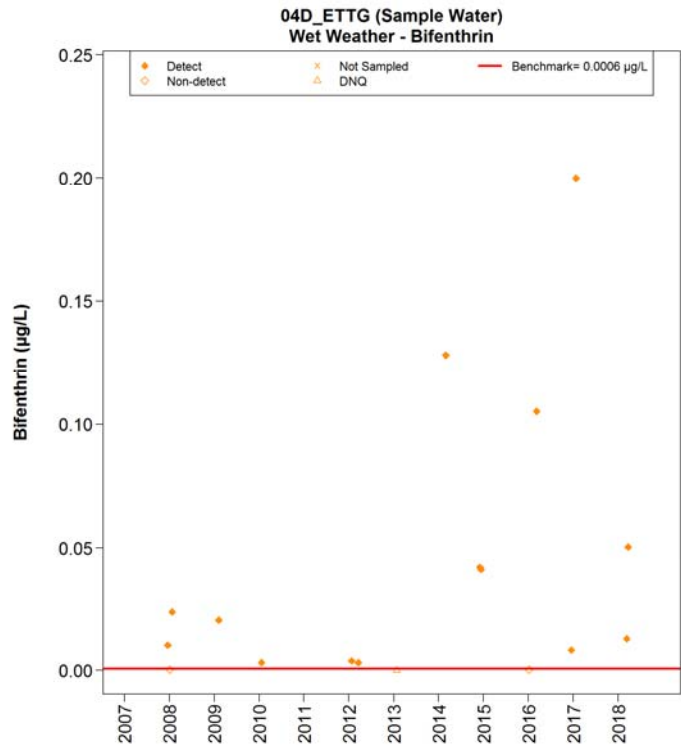


Figure 53. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 04D_ETTG

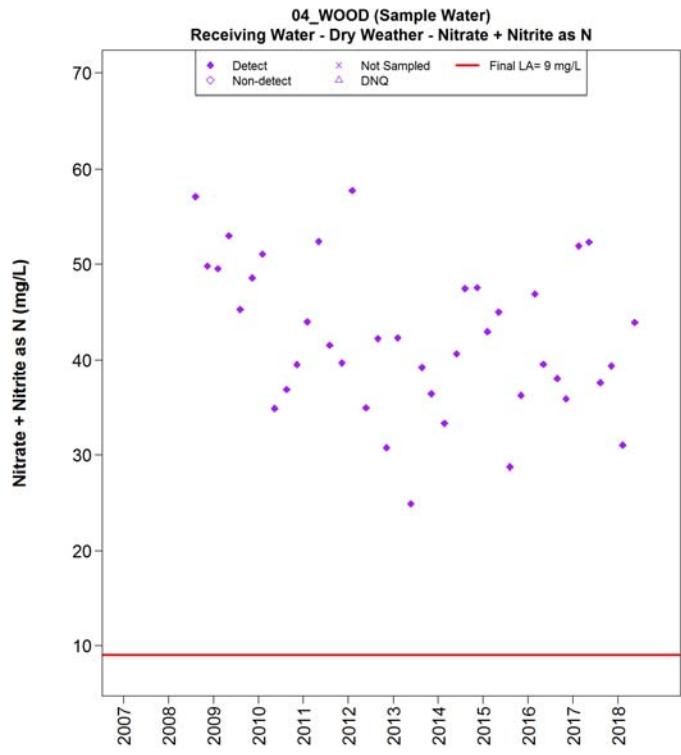


Figure 54. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 04_WOOD

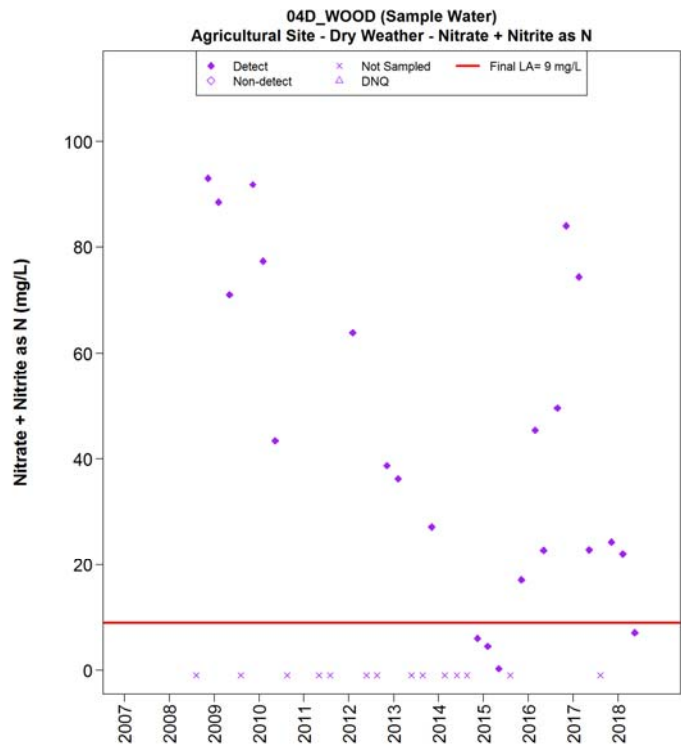


Figure 55. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 04D_WOOD

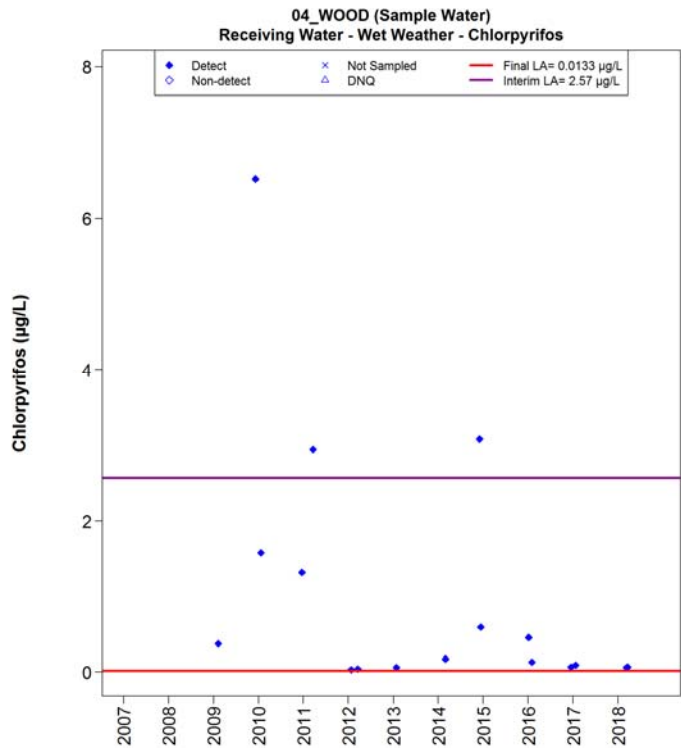


Figure 56. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 04_WOOD

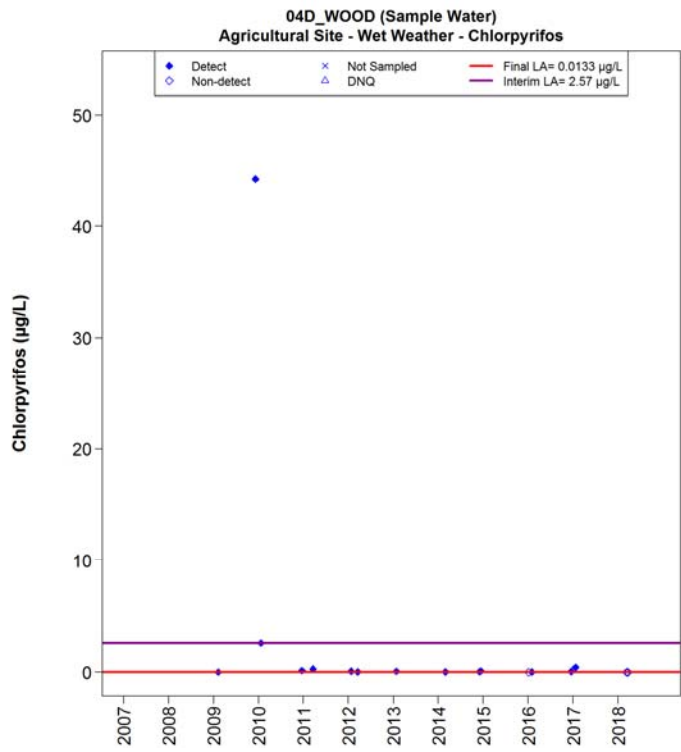


Figure 57. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 04D_WOOD

Table 39. Summary of Benchmark Exceedance Evaluation for Etting-Wood Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
<i>E. coli</i>	●			☑	●			☑
Nutrients								
Nitrate-N	●			☑	●			☑
Nitrate-N + Nitrite-N		● ²	● ³	☑				
Metals and Selenium								
Dissolved Copper	●			☑	●			☑
Total Selenium		● ²	● ³	☑ ⁴				
OC Pesticides (Legacy)								
DDD	●			☑	●			☑
DDE	●			☑	●			☑
DDT	●			☑	●			☑
Chlordane					●			☑
Toxaphene	●			☑	●			☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●	● ^{2,5}	● ^{3,5}	☑
Bifenthrin					●			☑
Chronic Toxicity								
Survival Toxicity	● ⁶			☑				

1. VCAILG monitoring site for Waiver benchmark exceedances is 04D_ETTG.
2. TMDL receiving water site for the CCW Nitrogen, Metals, and Toxicity TMDLs is 04_WOOD.
3. Agricultural land use site for the CCW Salts, Nitrogen, Metals, and Toxicity TMDLs is 04D_WOOD.
4. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
5. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.
6. Single species exceedances for *Hyalella azteca*.

Table 40. BMPs for Additional Implementation in the Etting-Wood Responsibility Area

Exceedance Condition										Survey Question #	BMP	% of Total Applicable Surveyed Units		
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Pesticides	Toxicity			04D_ETTG Site Drainage Only	Etting-Wood Responsibility Area Minus 04D_ETTG Site Drainage	Additional Implementation Needed?
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet	Dry					
x		x	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	7%	16%	Yes
		x	x	x	x	x	x		x	Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	63%	47%	Yes
		x	x	x	x	x	x		x	1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	67%	80%	Yes
		x	x	x	x				x	2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	76%	74%	Yes
		x	x						x	3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	19%	31%	Yes
		x	x						x	4	Certified nutrient management plan has been prepared for the property	6%	29%	Yes
		x	x						x	5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	91%	78%	Yes
		x	x						x	6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	84%	81%	Yes
		x	x						x	7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	61%	54%	Yes
		x	x						x	8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	67%	67%	Yes
		x	x	x	x	x	x	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	408%	No
			x	x	x	x	x	x		11	How much non-cropped area is bare soil	65%	68%	Yes
x	x	x	x	x	x	x	x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	51%	47%	Yes
x	x	x	x	x	x	x	x	x	x	13	Grassed waterways are used	6%	2%	Yes
x	x	x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	0.1%	0.1%	Yes
								x	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	100%	No
								x	x	16	An integrated pest management plan is implemented	94%	93%	Yes
x		x	x	x	x	x	x		x	18	How many acres produce irrigation runoff	29%	41%	Yes
x	x	x	x	x	x	x	x		x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	18%	8%	Yes

Table 41. Proposed Best Management Practices for the Etting-Wood Responsibility Area

Water Quality Issues											BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather		
											<i>Source Control BMPs</i>
x		x	x	x	x	x	x		x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
		x		x			x			x	Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
		x		x			x			x	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
		x		x						x	Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
		x								x	Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
		x	x							x	Prepare a certified nutrient management plan for the property
		x	x							x	Conduct soil residual nitrate tests and use results to adjust fertilizer application
		x	x							x	Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
		x	x							x	Analyze irrigation water nitrate and use results to adjust fertilizer application
		x	x							x	Adjust fertilizer application to account for nutrients provided by cover crops

Water Quality Issues											BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity	BMPs	
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather		
		x	x	x	x	x	x	x	x		Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
			x		x			x		Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel	
									x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions	
									x	Implement an integrated pest management plan	
x		x		x			x			Avoid/prevent irrigation runoff	
Structural Non-Treatment BMPs											
x	x	x	x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	
x	x	x	x	x	x	x	x	x	x	Use grassed waterways	
x	x	x	x	x	x	x	x	x	x	Use vegetated filter strips	
Optional Treatment BMPs											
x	x	x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	

Lower Calleguas Creek Responsibility Area



Figure 58. Lower Calleguas Creek Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Lower Calleguas Creek responsibility area are illustrated in Figure 58. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 01_BPT_15 is a CCW OC Pesticides and PCBs TMDL Receiving Water Compliance Site
- 03_UNIV is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Receiving Water Compliance Site
- 9BD_GERRY is a CCW Salts TMDL Ag Land Use Site
- 02D_BROOM is a CCW Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 42. Lower Calleguas Creek Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area [a]	Drainage Area Monitoring Site 04D_ETTG [a]
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	6,010	3,251
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver ^[b]	764	3
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	4,843	3,247
Assessed Acres from Agricultural Parcel List belonging to Non Members	403	1
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	3,297	3,054
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.68	0.94
Estimated Irrigated Acres in Non Member Agricultural Parcels ^[c]	275	1
Total Estimated Irrigated Acres (Member plus Non Member)	3,572	3,054
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	92%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	2,992	2,442
Percent of Total Estimated Irrigated Acres that were Surveyed	84%	80%
Percent of VCAILG Member Irrigated Acres that were Surveyed	91%	80%

[a] Responsibility area does not include the beacon monitoring site drainage area

[b] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[c] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 43. Lower Calleguas Creek Responsibility Area Crop Types and General Production Practices

Crop or Practice	04D_ETTG Site Drainage Only				04D_ETTG-Calleguas Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	251	-	13%	-	-	-	-	-
Blueberries	-*	-	0%	-	257	238	10%	8%
Raspberries		126		5%		226		8%
Row Crop	1,353	1,980	72%	81%	1,490	1,842	57%	62%
Orchard	144	192	8%	8%	523	686	20%	23%
Nursery	132	142	7%	6%	-	-	-	-
Flower	-	-	-	-	75	-	3%	-
Sod	-	-	-	-	-	-	-	-
Other	2	2	0.1%	0.1%	252	-	10%	-
Overhead Cover in Production Areas								
Hoop House	-	126	-	5%	132	414	5%	14%
No Cover	219	1,938	12%	79%	1,795	1,842	69%	62%
Greenhouse	-	143	-	6%	3	-	0.1%	-
Shade	-	-	-	-	-	50	-	2%
Other	-	41	-	2%	-	-	-	-
Surface Treatments in Production Areas								
Bare Soil	1,106	2,308	59%	195%	2,195	2,515	85%	84%
Cover Crop	351	50	19%	2%	-	29	-	1%
Plastic	262	132	14%	5%	71	-	3%	-
Weed Cloth	-	-	-	-	221	221	9%	7%
Mulch	-	-	-	-	234	227	9%	8%
Gravel	-	-	-	-	-	-	-	-
Other	295	-	16%	-	18	-	0.7%	-
Irrigation Systems in Production Areas								
Drip Only	1,221	1,385	65%	57%	1,089	1,139	42%	38%
Microsprinkler/Drip	198	-	11%	-	-	-	-	-
Microsprinkler	114	155	6%	6%	221	220	9%	7%
Overhead Sprinkler	122	5	6%	0.2%	116	58	4%	2%
Overhead/Drip	279	895	15%	37%	1,260	1,420	48%	47%
Furrow Flood	-	-	-	-	-	155	-	5%
Hand Watering	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-

[a] Responsibility area does not include the beacon monitoring site drainage area.

Table 44. Lower Calleguas Creek Responsibility Area Grower BMPs

Survey Question	Units	04D_ETTG Site Drainage Only				04D_ETTG- Calleguas Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	1,396	1,593	74%	67%	2,492	2,097	96%	98%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	1,212	1,814	64%	76%	1,165	1,521	45%	71%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	460	418	26%	19%	2,331	1,567	90%	87%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	688	651	37%	27%	1,285	937	49%	44%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	661	132	35%	6%	497	203	19%	9%
Q5a: Are soil residual nitrate tests done?	Acres	991	2,204	53%	92%	1,611	1,179	62%	55%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	963	2,176	51%	91%	1,611	1,179	62%	55%
Q6: Are leaf/petiole tests conducted?	Acres	1,243	1,908	66%	84%	2,597	2,004	100%	100%
Q7a: Is nitrate measured in fertigation water?	Acres	617	1,453	33%	61%	1,219	1,067	47%	50%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	617	1,453	33%	61%	755	952	29%	44%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	581	1,019	46%	67%	1,412	1,586	100%	100%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	-	83	-	3%	413	756	16%	35%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	71	83	0%	100%	616	759	1%	100%
Q11: How much non-cropped area is bare soil?	Acres	84	101	4%	65%	491	596	19%	40%
Q12a: How many feet of ditches exist?	Feet	61,342	8,2927	N/A	N/A	139,998	177,098	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	1,850	41,935	3%	51%	61,882	90,982	44%	51%
Q13a: Are grassed waterways present?	Acres	132	132	7%	6%	175	29	7%	1%
Q13b: How many acres drain to grassed waterways?	Acres	5	5	0.3%	0.2%	156	156	6%	7%
Q14: How many acres are treated by vegetated filter strips?	Acres	2	3	0.1%	0.1%	6	332	0.2%	16%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	1,881	2,393	100%	100%	2,597	2,141	100%	100%
Q16: Is an IPM Plan being implemented?	Acres	1,881	2,242	100%	94%	2,597	2,141	100%	100%
Q17a: How many acres are organically farmed?	Acres	42	374	2%	16%	269	326	10%	15%
Q17b: How many acres are conventionally farmed?	Acres	1,840	2,052	98%	86%	2,328	2,372	90%	111%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	525	705	28%	26%	106	102	4%	5%
Q19: Runoff from how many acres is treated or detained?	Acres	493	422	26%	18%	830	825	32%	39%

[a] Responsibility area does not include the beacon monitoring site drainage area

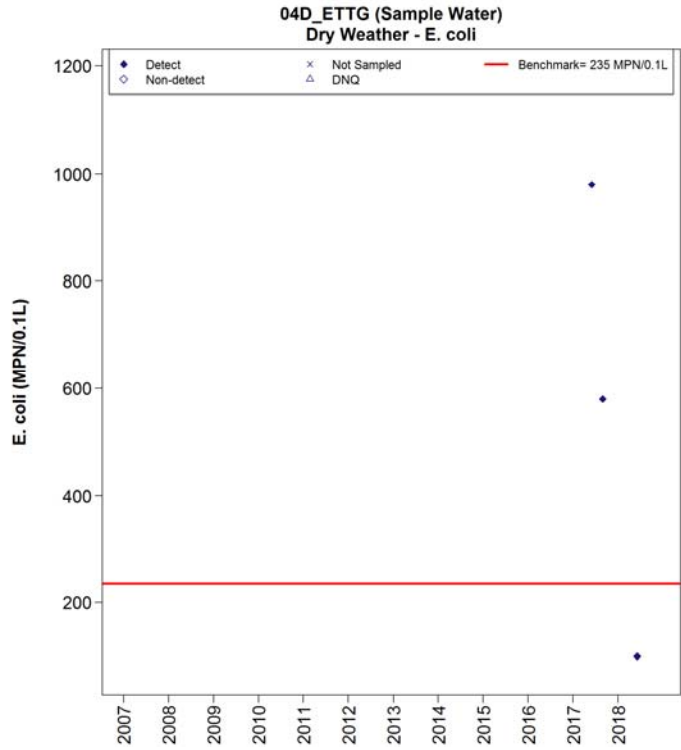


Figure 59. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site 04D_ETTG

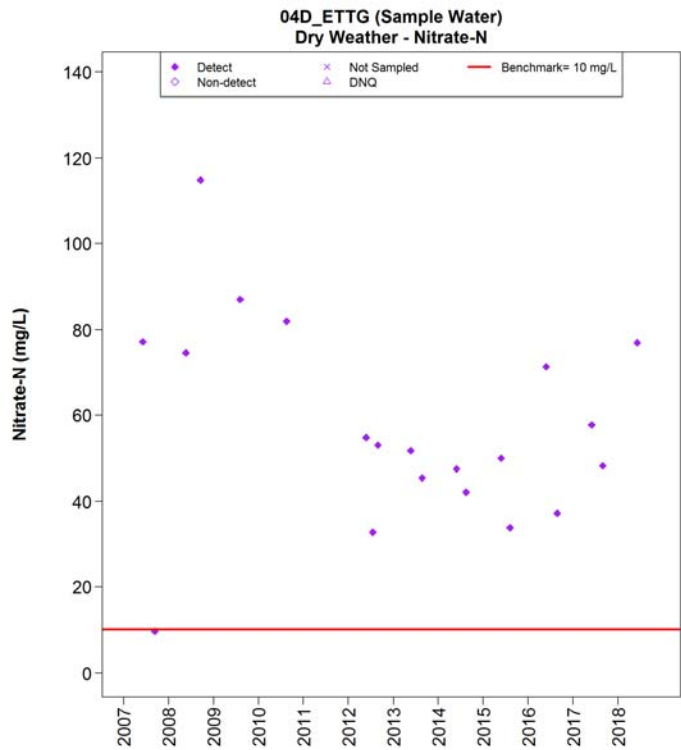


Figure 60. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_ETTG

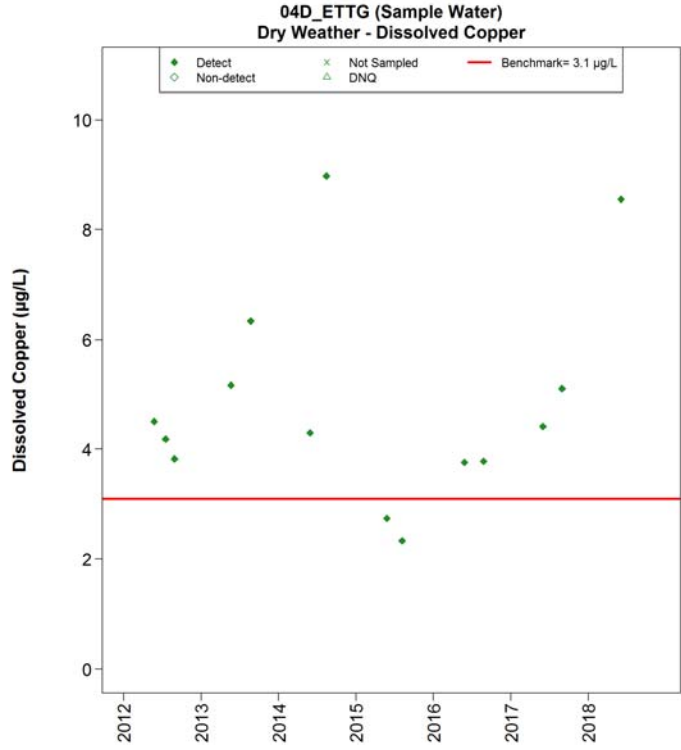


Figure 61. Dry Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_ETTG

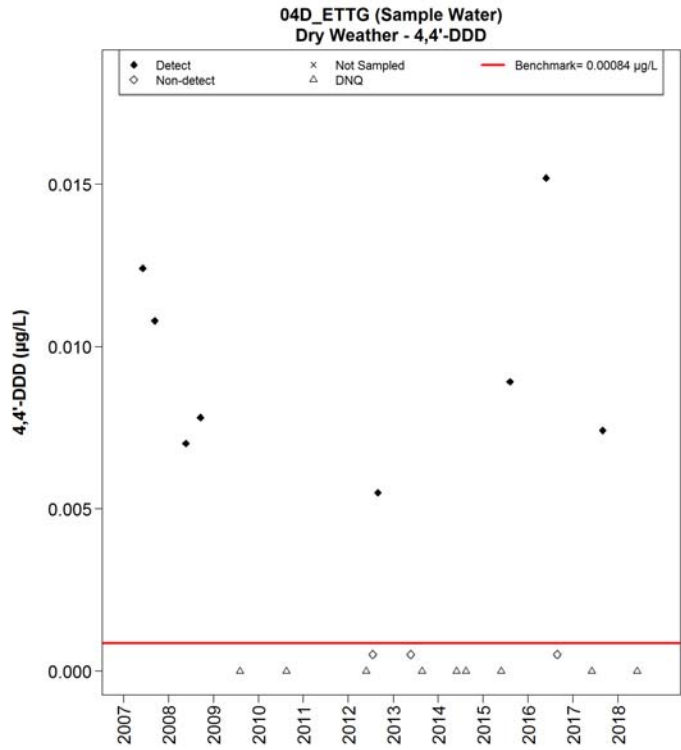


Figure 62. Dry Weather DDD Concentrations at Waiver Benchmark Site 04D_ETTG

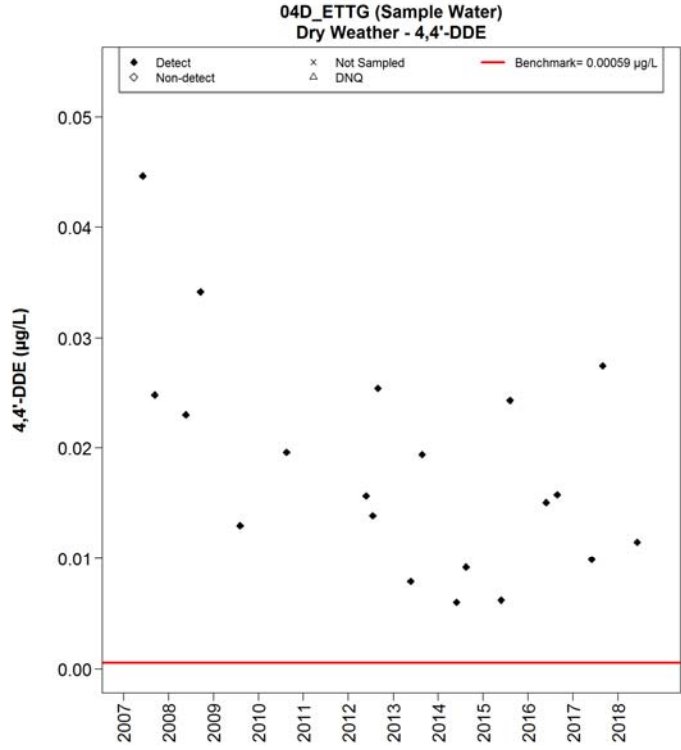


Figure 63. Dry Weather DDE Concentrations at Waiver Benchmark Site 04D_ETTG

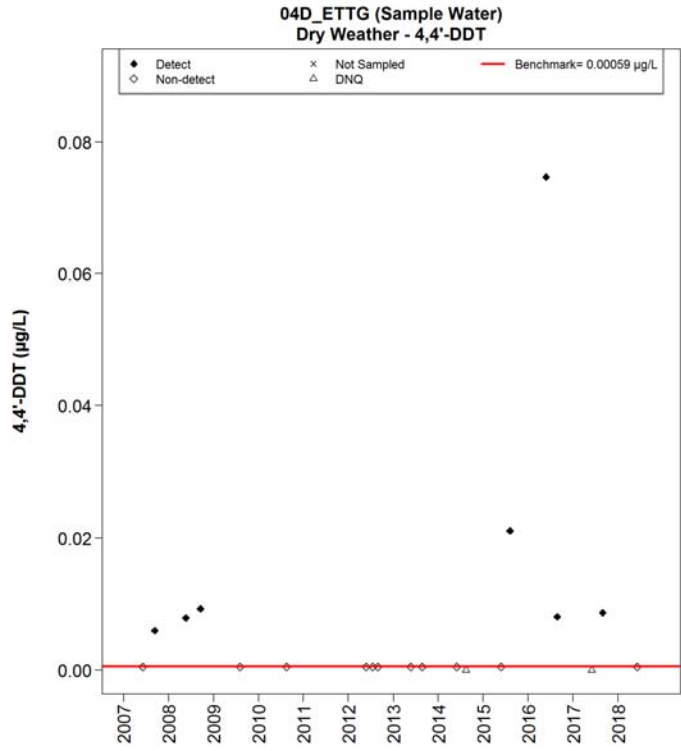


Figure 64. Dry Weather DDT Concentrations at Waiver Benchmark Site 04D_ETTG

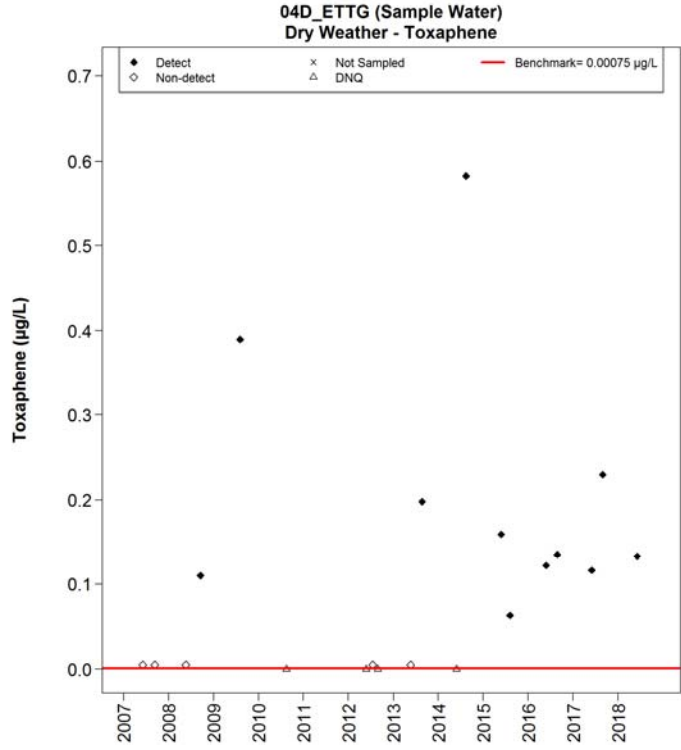


Figure 65. Dry Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_ETTG

Water Column Survival Toxicity - Site 04D_ETTG		
Significant Mortality	X	X
No Significant Mortality		
Event	33	37
Date	5/31/2017	6/4/2018

Figure 66. Dry Weather Survival Toxicity at Waiver Benchmark Site 04D_ETTG

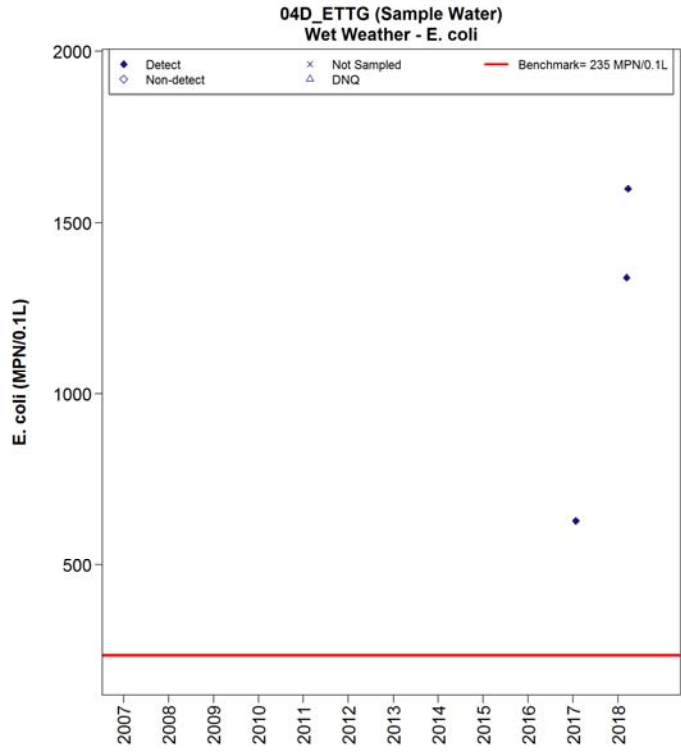


Figure 67. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 04D_ETTG

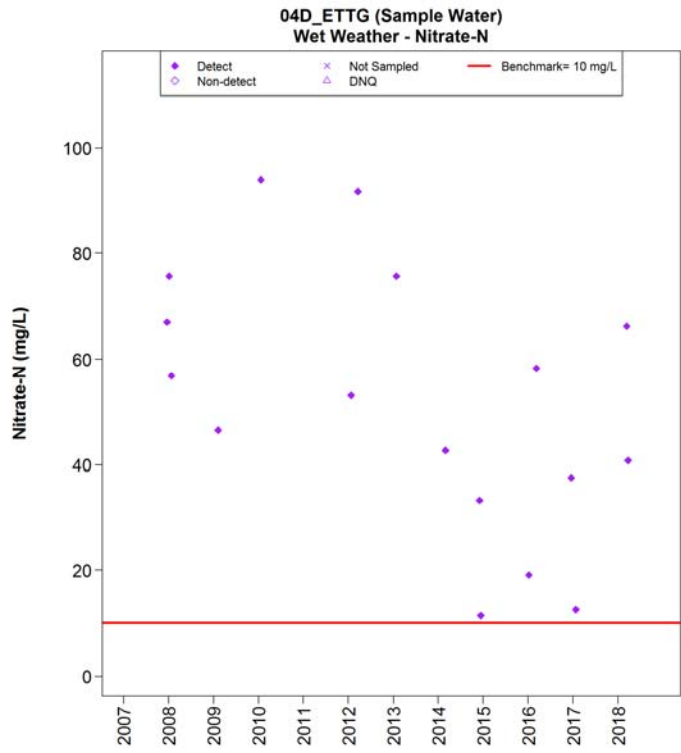


Figure 68. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_ETTG

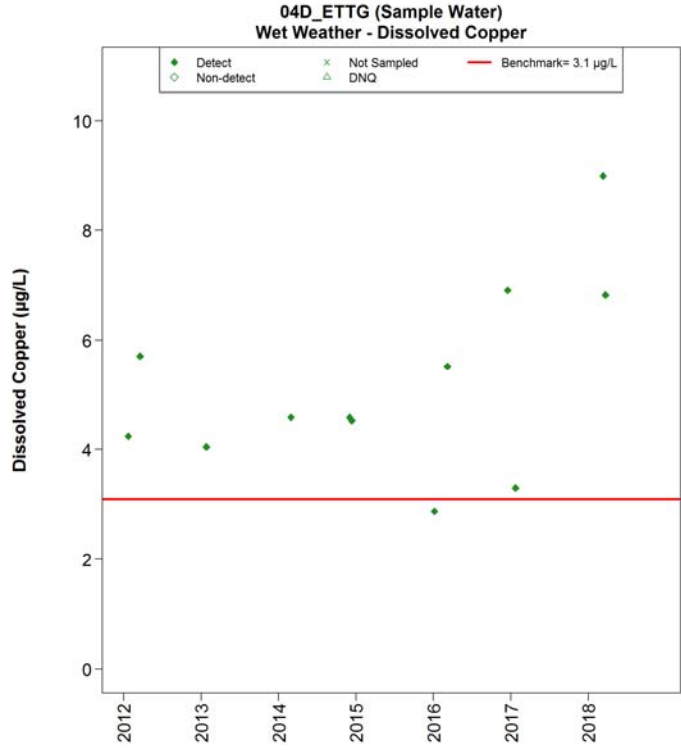


Figure 69. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_ETTG

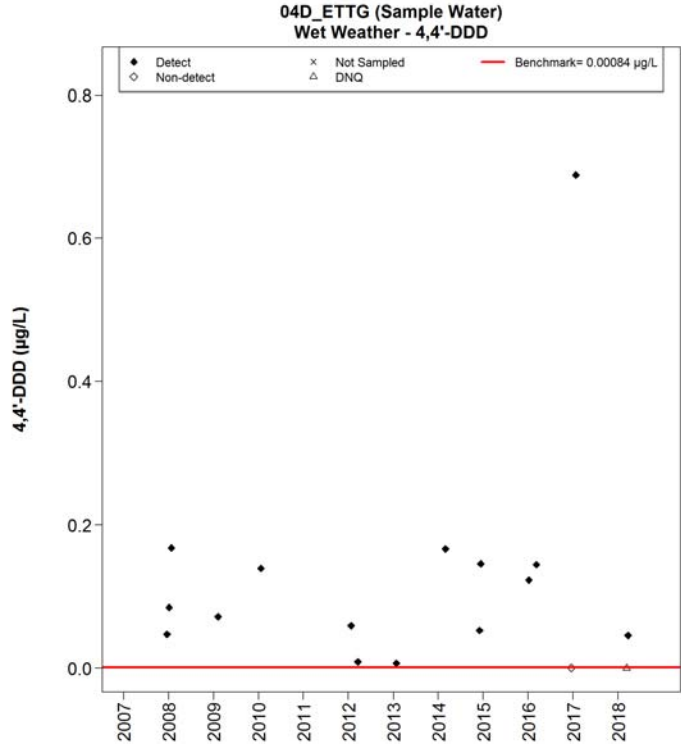


Figure 70. Wet Weather DDD Concentrations at Waiver Benchmark Site 04D_ETTG

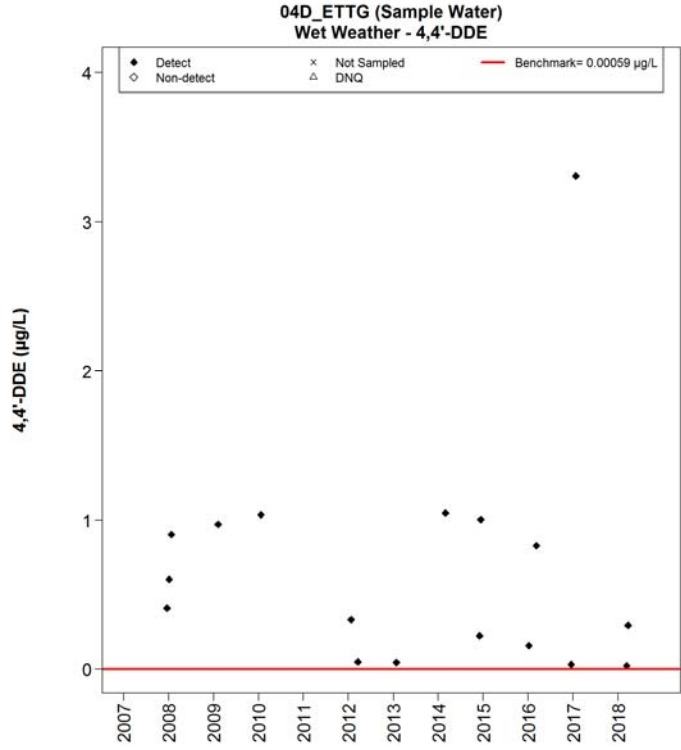


Figure 71. Wet Weather DDE Concentrations at Waiver Benchmark Site 04D_ETTG

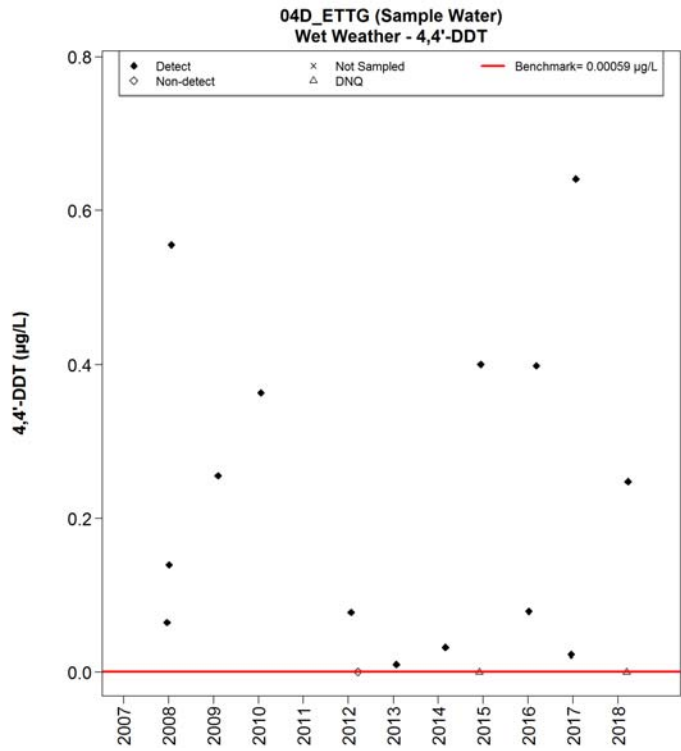


Figure 72. Wet Weather DDT Concentrations at Waiver Benchmark Site 04D_ETTG

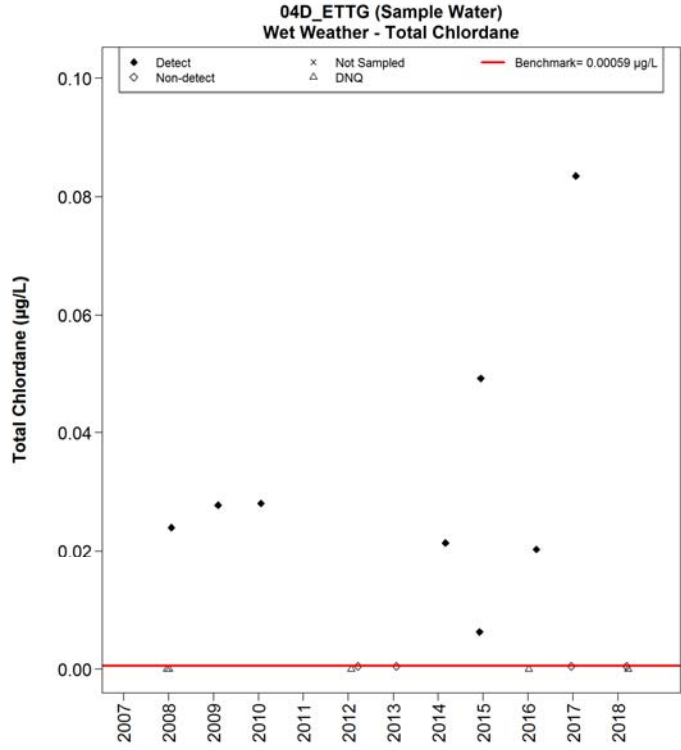


Figure 73. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 04D_ETTG

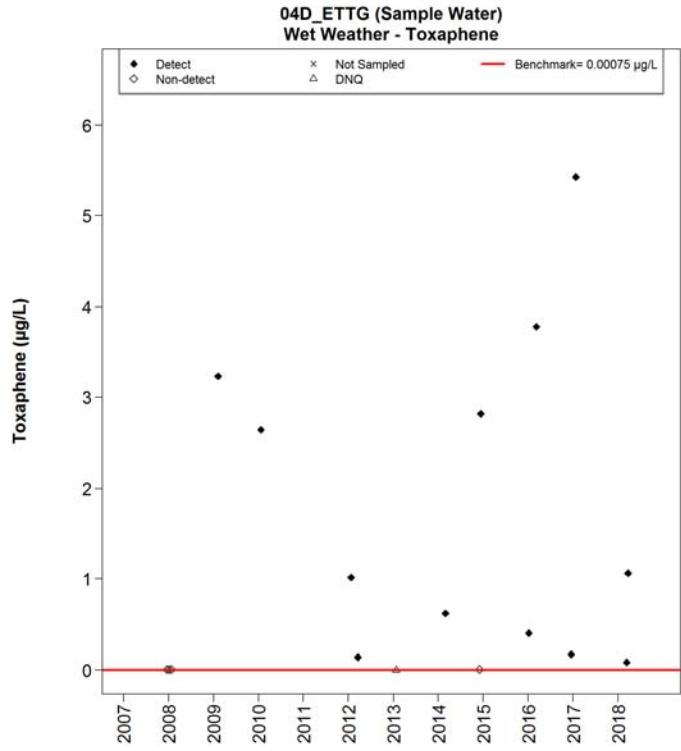


Figure 74. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_ETTG

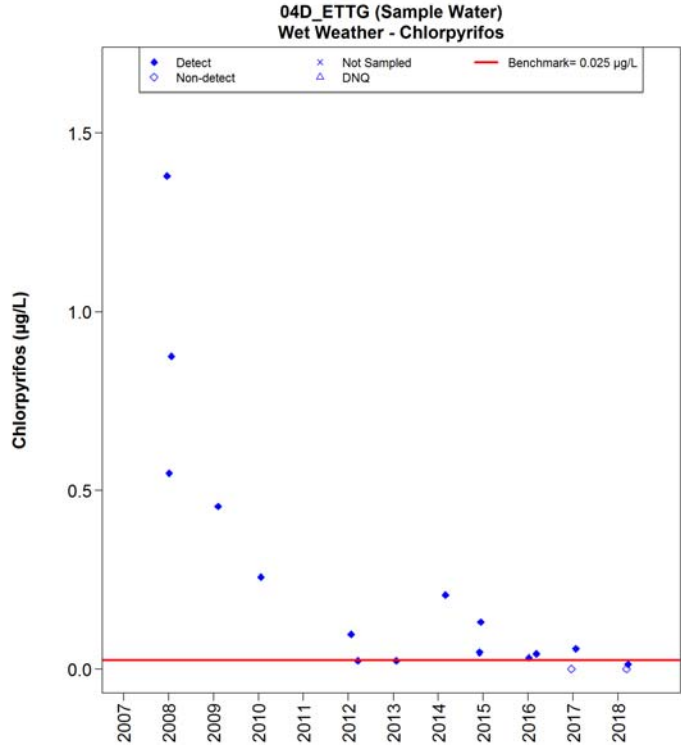


Figure 75. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 04D_ETTG

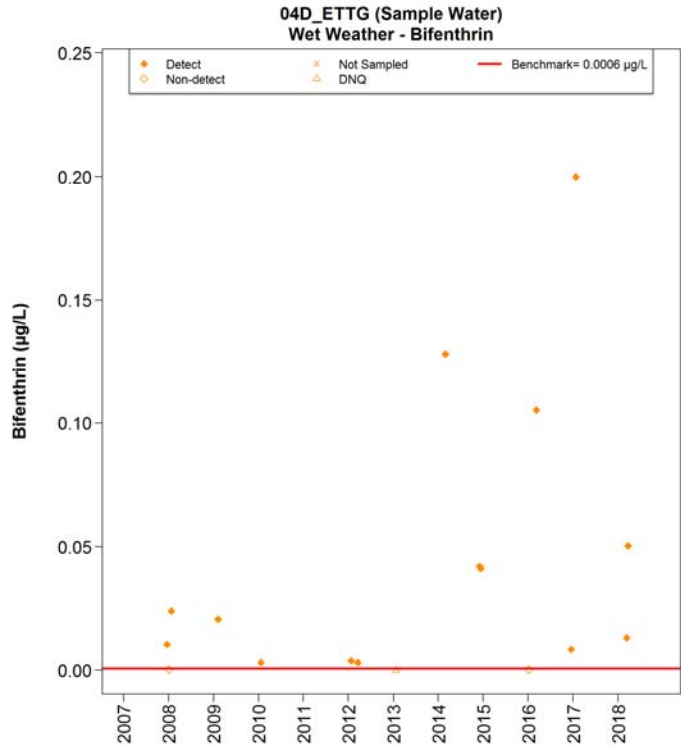


Figure 76. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 04D_ETTG

Table 45. Summary of Graphed Benchmark Exceedances for Lower Calleguas Creek Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
<i>E. coli</i>	●			☑	●			☑
Salts								
Chloride		● ²	● ³	● ⁴				
Nutrients								
Nitrate-N	●			☑	●			☑
Metals and Selenium								
Dissolved Copper	●			☑	●			☑
OC Pesticides (Legacy)								
DDD	●			☑	●			☑
DDE	●			☑	●			☑
DDT	●			☑	●			☑
Chlordane					●			☑
Toxaphene	●			☑	●			☑
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●	● ^{2,5}	● ⁶	☑
Bifenthrin					●			☑
Chronic Toxicity								
Survival Toxicity	● ⁷			☑				

1. VCAILG monitoring site for Waiver benchmarks is 04D_ETTG
2. Receiving water site for CCW Salts and Toxicity TMDLs is 03_UNIV.
3. Agricultural land use site for the CCW Salts TMDLs is 9BD_GERRY.
4. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
5. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.
6. Agricultural land use site for the CCW Toxicity TMDL is 02D_BROOM.
7. Single species exceedances for *Hyalella azteca*.

Table 46. BMPs for Additional Implementation in the Lower Calleguas Creek Responsibility Area

Exceedance Condition														
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Pesticides	Toxicity	% of Total Applicable Surveyed Units				
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet	Dry	Survey Question #	BMP	04D_ETTG Site Drainage [a]	Lower Calleguas Creek Responsibility Area [a]	Additional Implementation Needed? [b]
x		x	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	7%	16%	Yes
		x	x	x	x	x	x		x	Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	63%	45%	Yes
		x	x	x	x	x	x		x	1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	67%	98%	Yes
		x	x	x	x				x	2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	76%	71%	Yes
		x	x						x	3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	19%	87%	Yes
		x	x						x	4	Certified nutrient management plan has been prepared for the property	6%	9%	Yes
		x	x						x	5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	91%	55%	Yes
		x	x						x	6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	84%	100%	Yes
		x	x						x	7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	61%	44%	Yes
		x	x						x	8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	67%	100%	Yes
		x	x	x	x	x	x	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	100%	No
			x	x	x	x	x	x	x	11	How much non-cropped area is bare soil	65%	40%	Yes
x	x	x	x	x	x	x	x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	51%	51%	Yes
x	x	x	x	x	x	x	x	x	x	13	Grassed waterways are used	6%	1%	Yes
x	x	x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	0.1%	16%	Yes
									x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	100%	No
									x	16	An integrated pest management plan is implemented	94%	100%	Yes
x	x	x	x	x	x	x	x		x	18	How many acres produce irrigation runoff	26%	5%	Yes
x	x	x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	18%	39%	Yes

[a] Responsibility area does not include the beacon monitoring site drainage area.

[b] Only BMP implementation in the responsibility area is considered because the beacon site drainage is not included in the responsibility area

[c] Zero acres reported as sloped within the surveyed site drainage and responsibility area.

Table 47. Proposed Best Management Practices for the Lower Calleguas Creek Responsibility Area

Water Quality Issues											BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather		
		x	x	x	x	x	x	x			Source Control BMPs
											Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x		x		x			x				Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
											Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
		x		x			x				Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
											Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
		x	x								Prepare a certified nutrient management plan for the property
		x	x								Conduct soil residual nitrate tests and use results to adjust

Water Quality Issues											BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather		
										fertilizer application	
		x	x						x	Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer	
		x	x						x	Analyze irrigation water nitrate and use results to adjust fertilizer application	
		x	x						x	Adjust fertilizer application to account for nutrients provided by cover crops	
		x	x	x	x	x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	
			x		x		x	x		Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel	
								x	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions	
								x	x	Implement an integrated pest management plan	
x		x		x		x			x	Avoid/prevent irrigation runoff	

Water Quality Issues											BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	Toxicity		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Dry Weather		
											<i>Structural Non-Treatment BMPs</i>
x	x	x	x	x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	x	x	x	x	Use vegetated filter strips
											<i>Optional Structural BMPs</i>
x	x	x	x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

South Revolon Responsibility Area

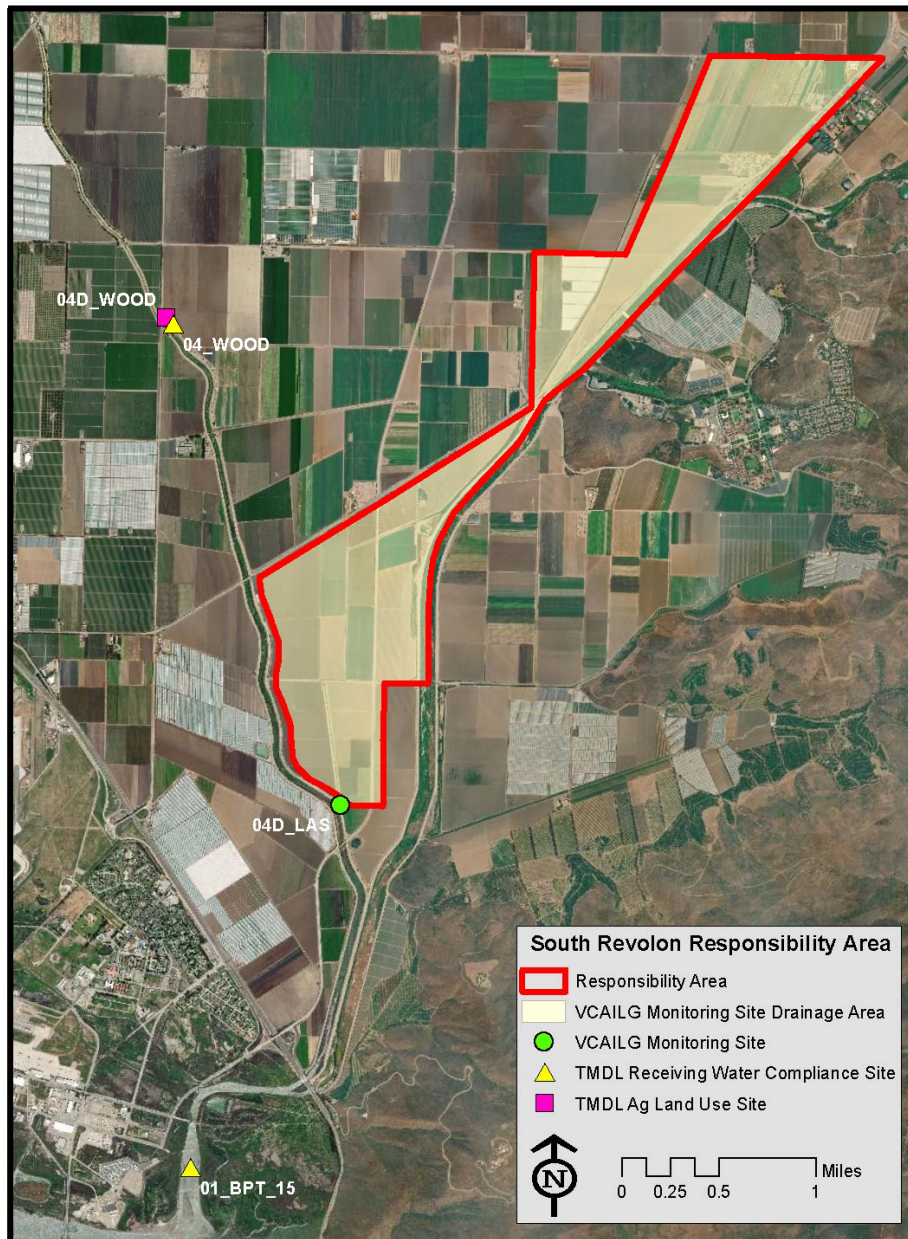


Figure 77. South Revolon Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the South Revolon responsibility area are illustrated in Figure 77. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 01_BPT_15 is a CCW OC Pesticides and PCBs TMDL Receiving Water Compliance Site
- 04_WOOD is a CCW Salts, Nitrogen, Toxicity, and Metals Receiving Water Compliance Site
- 04D_WOOD is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 48. South Revolon Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Drainage Area Monitoring Site 04D_LAS
Assessed Acreage Information	
Total Assessed Acres from Agricultural Parcel List	1,322
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	1,315
Assessed Acres from Agricultural Parcel List belonging to Non Members	7
Irrigated Acreage Information	
VCAILG Member Acreage Reported as Irrigated	1,101
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.84
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	6
Total Estimated Irrigated Acres (Member plus Non Member)	1,107
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	99%
Survey Response Information	
Sum Surveyed Irrigated Acres	885
Percent of Total Estimated Irrigated Acres that were Surveyed	80%
Percent of VCAILG Member Irrigated Acres that were Surveyed	80%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 49. South Revolon Responsibility Area Crop Types and General Production Practices

Crop or Practice	04D_LAS Site Drainage Only [a]			
	Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018
Crop Type				
Strawberries	-	-	-	-
Blueberries	_*	-	_*	-
Raspberries	-	-	-	-
Row Crop	398	809	100%	91%
Orchard	-	75	-	8%
Nursery	-	-	-	-
Flower	-	1	-	-
Sod	-	-	-	-
Other	-	-	-	-
Overhead Cover in Production Areas				
Hoop House	-	-	-	-
No Cover	-	810	-	92%
Greenhouse	-	-	-	-
Shade	-	-	-	-
Other	-	-	-	-
Surface Treatments in Production Areas				
Bare Soil	398	882	100%	100%
Cover Crop	-	-	-	-
Plastic	-	-	-	-
Weed Cloth	-	3	-	0.3%
Mulch	-	-	-	-
Gravel	-	-	-	-
Other	-	-	-	-
Irrigation Systems in Production Areas				
Drip Only	63	194	16%	22%
Microsprinkler/Drip	-	-	-	-
Microsprinkler	-	-	-	-
Overhead Sprinkler	-	-	-	-
Overhead/Drip	335	691	84%	78%
Furrow Flood	-	-	-	-
Hand Watering	-	-	-	-
Other	-	-	-	-

[a] Monitoring site drainage area serves as a complete Responsibility Area

Table 50. South Revolon Responsibility Area Grower BMPs

Survey Question	Units	04D_LAS Site Drainage Only			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018
Irrigation and Salinity Management					
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	335	862	84%	100%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	227	709	57%	80%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	335	473	84%	70%
Nutrient Management					
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	164	511	41%	58%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	164	164	41%	19%
Q5a: Are soil residual nitrate tests done?	Acres	164	707	41%	80%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	164	707	41%	80%
Q6: Are leaf/petiole tests conducted?	Acres	335	881	84%	100%
Q7a: Is nitrate measured in fertigation water?	Acres	-	526	-	60%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	-	526	-	60%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	335	683	100%	100%
Sediment Management					
Q9: How many cropped acres have a slope greater than 2%?	Acres	63	273	16%	31%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	-	210	-	77%
Q11: How much non-cropped area is bare soil?	Acres	21	103	5%	73%
Q12a: How many feet of ditches exist?	Feet	15,870	30,844	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	-	13,000	-	42%
Q13a: Are grassed waterways present?	Acres	-	-	-	-
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-
Q14: How many acres are treated by vegetated filter strips?	Acres	-	2	-	0.2%
Pest Management					
Q15: Are PCAs used for pesticide management decisions?	Acres	398	881	100%	100%
Q16: Is an IPM Plan being implemented?	Acres	398	798	100%	90%
Q17a: How many acres are organically farmed?	Acres	-	-	-	-
Q17b: How many acres are conventionally farmed?	Acres	398	884	100%	100%
Runoff Management/Treatment					
Q18: How many acres produce irrigation runoff?	Acres	227	407	57%	46%
Q19: Runoff from how many acres is treated or detained?	Acres	-	-	-	-

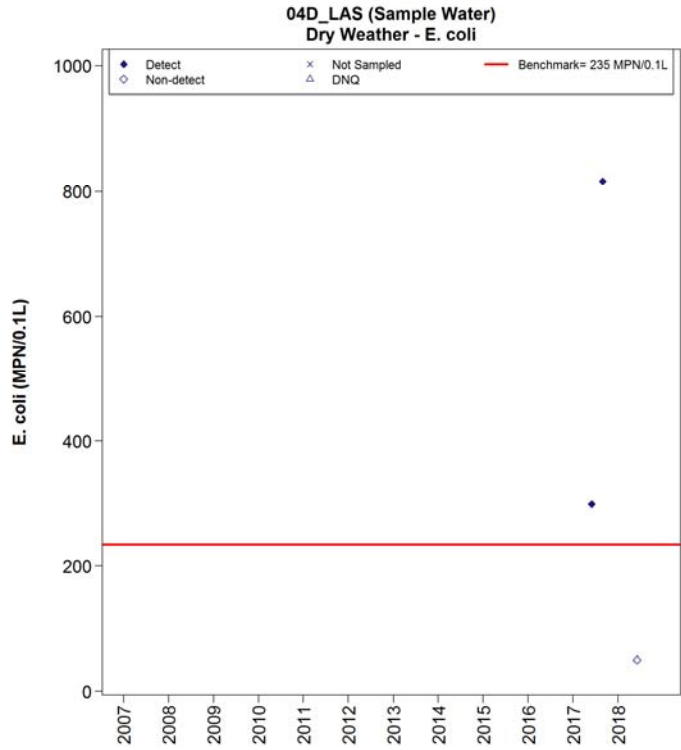


Figure 78. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site 04D_LAS

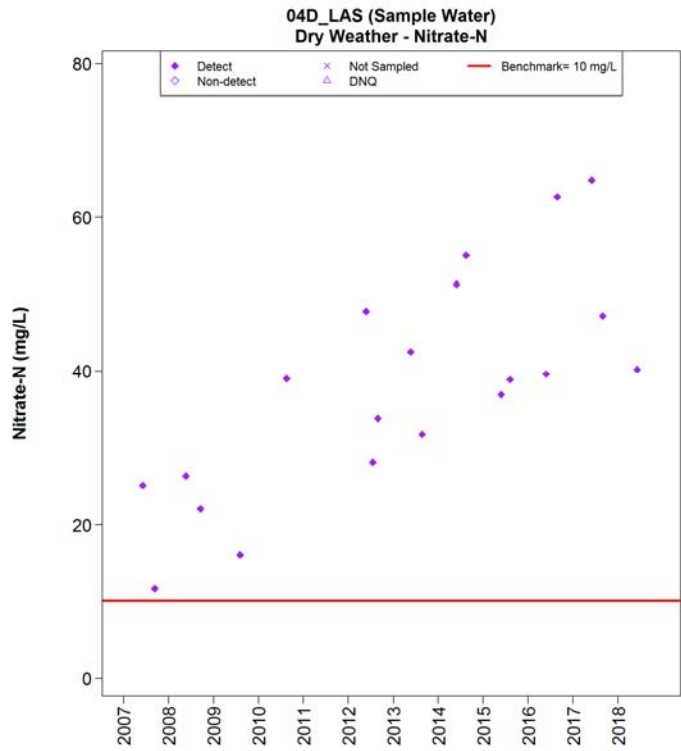


Figure 79. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_LAS

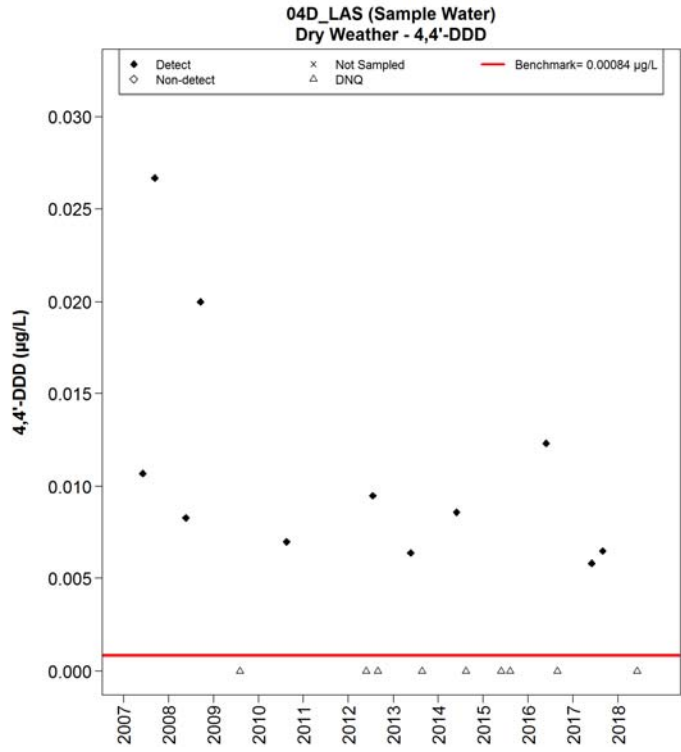


Figure 80. Dry Weather DDD Concentrations at Waiver Benchmark Site 04D_LAS

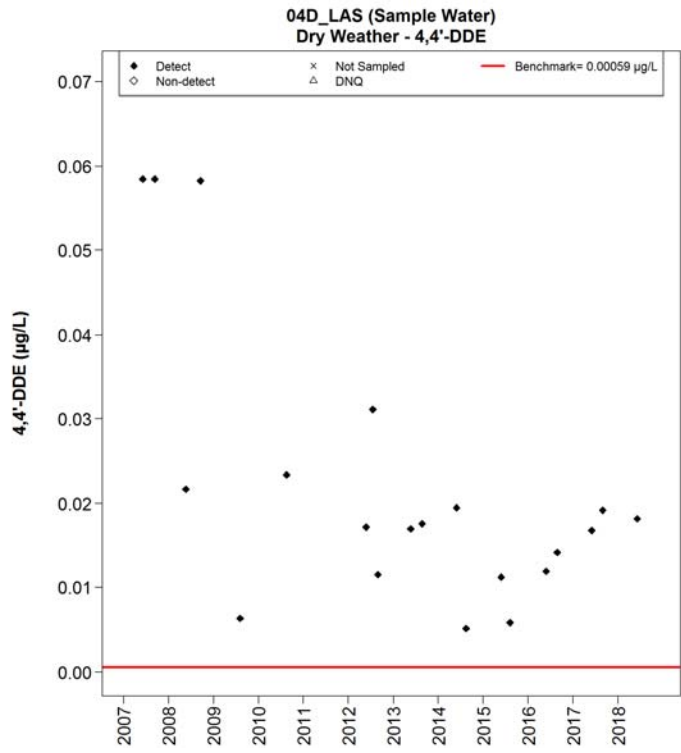


Figure 81. Dry Weather DDE Concentrations at Waiver Benchmark Site 04D_LAS

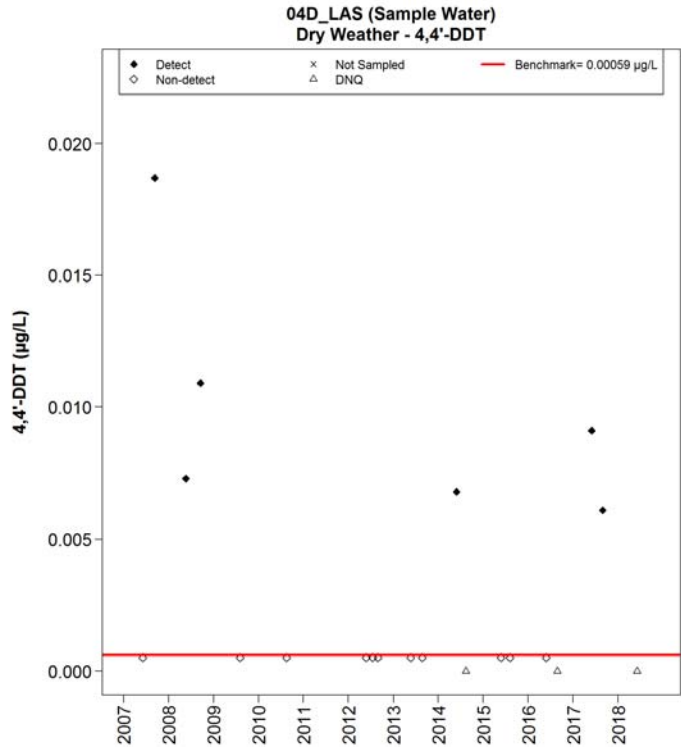


Figure 82. Dry Weather DDT Concentrations at Waiver Benchmark Site 04D_LAS

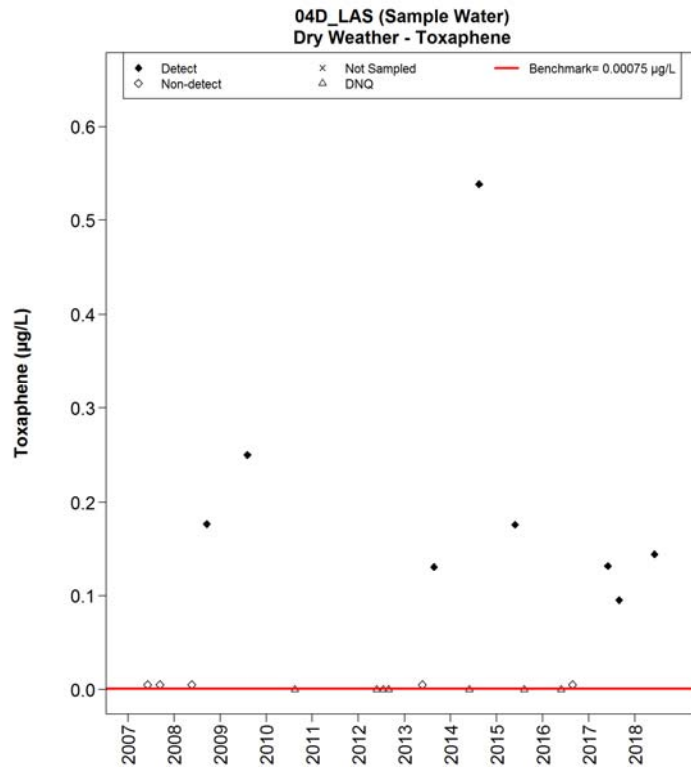


Figure 83. Dry Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_LAS

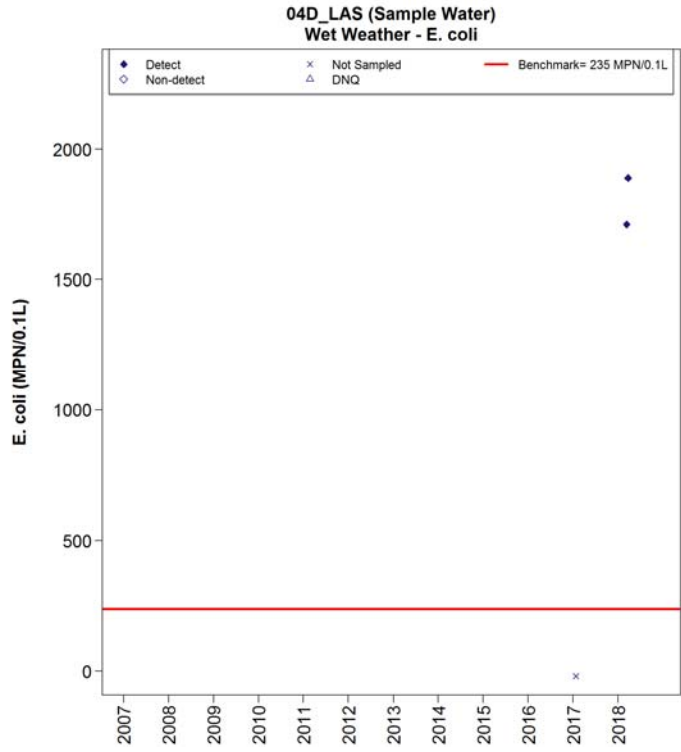


Figure 84. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 04D_LAS

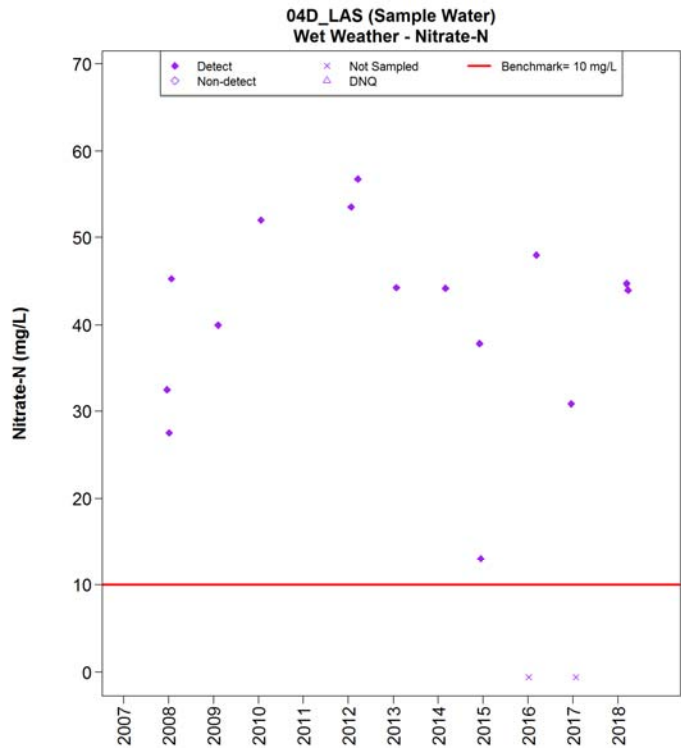


Figure 85. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site 04D_LAS

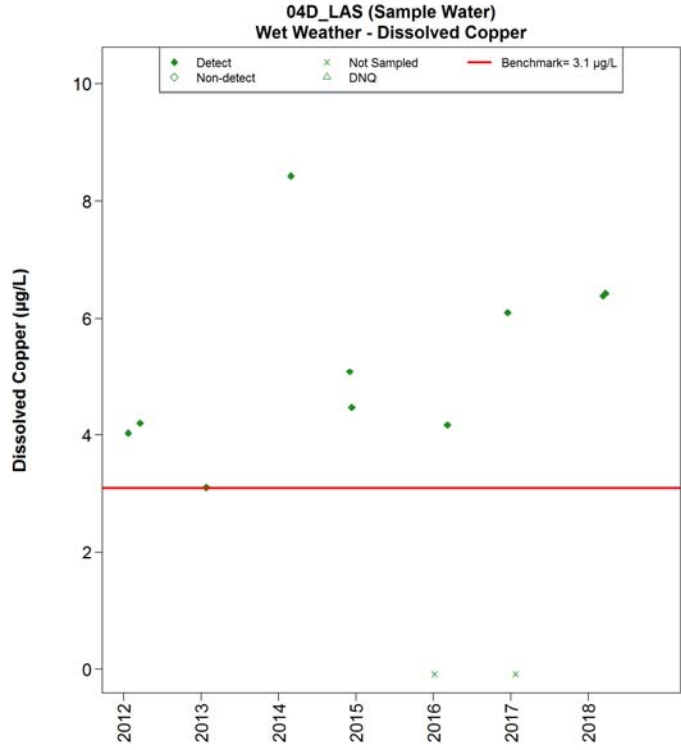


Figure 86. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 04D_LAS

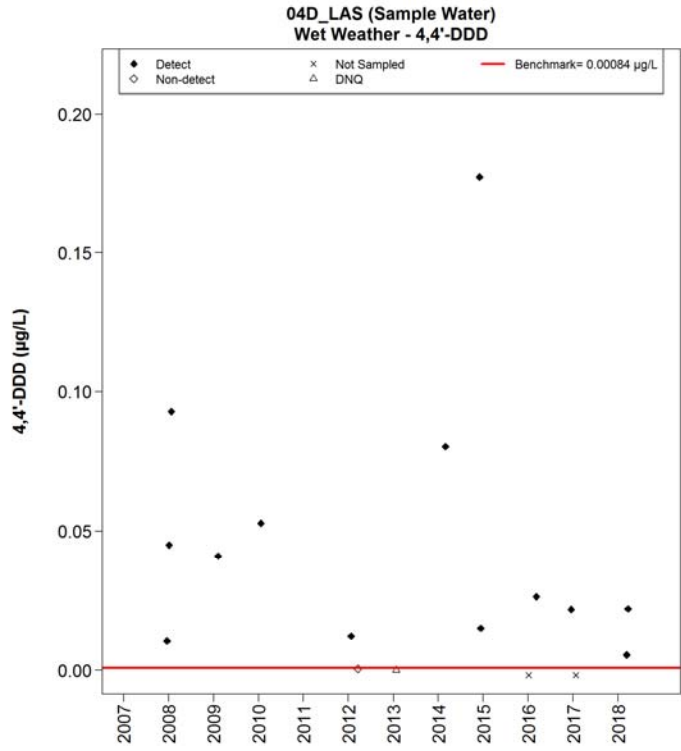


Figure 87. Wet Weather DDD Concentrations at Waiver Benchmark Site 04D_LAS

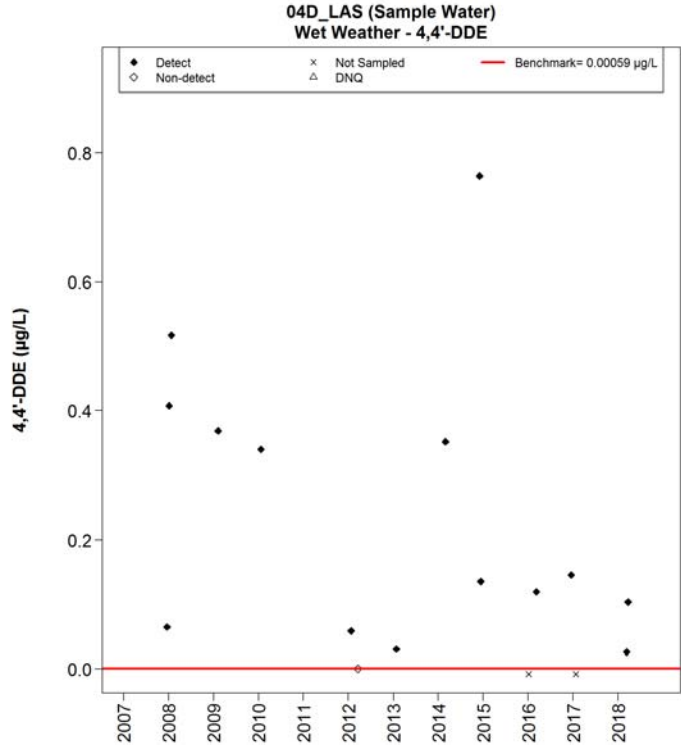


Figure 88. Wet Weather DDE Concentrations at Waiver Benchmark Site 04D_LAS

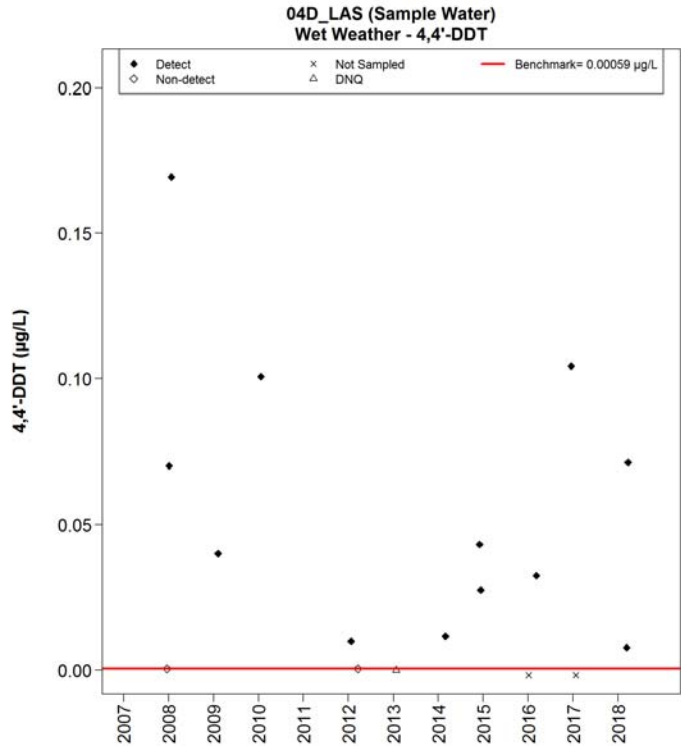


Figure 89. Wet Weather DDT Concentrations at Waiver Benchmark Site 04D_LAS

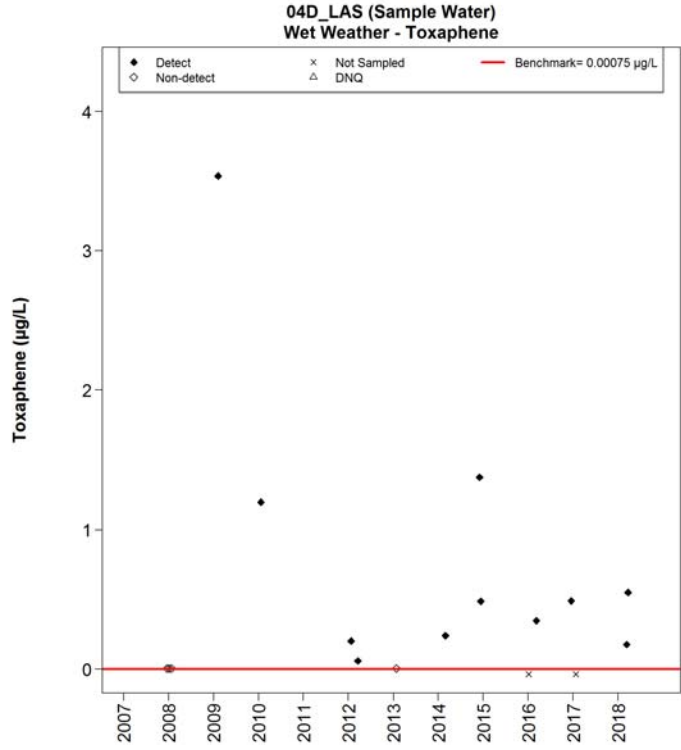


Figure 90. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 04D_LAS

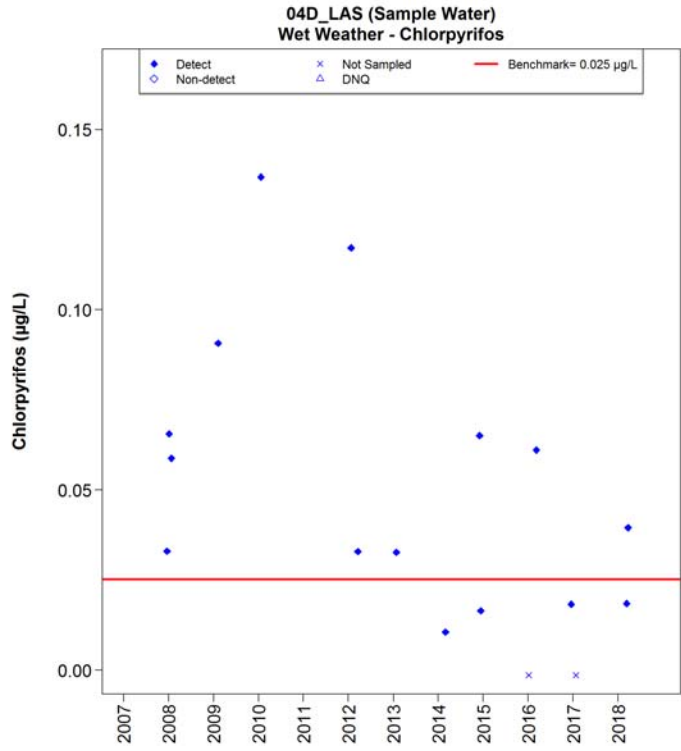


Figure 91. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 04D_LAS

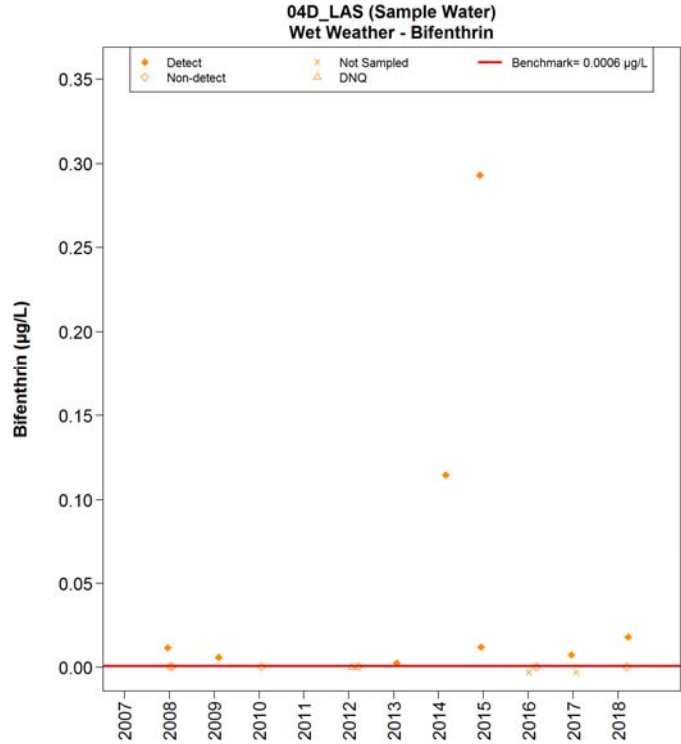


Figure 92. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 04D_LAS

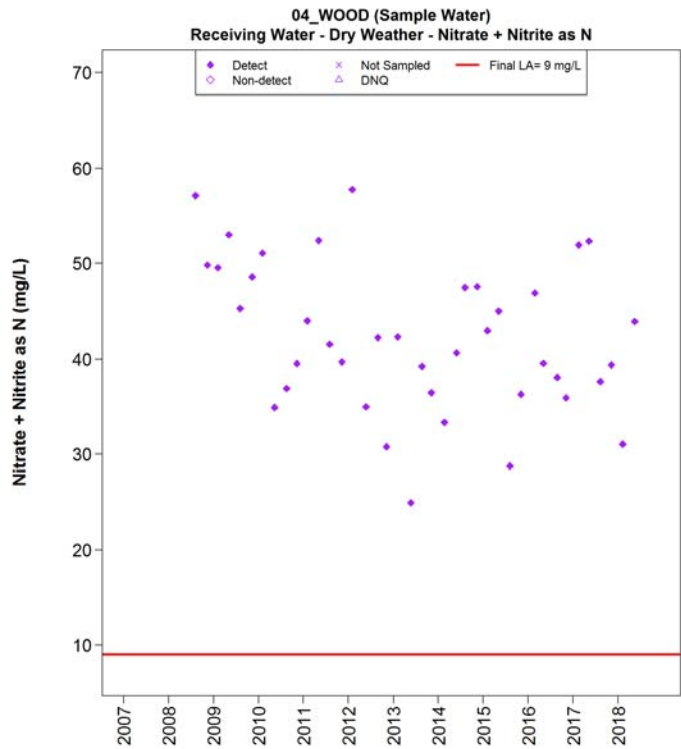


Figure 93. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 04_WOOD

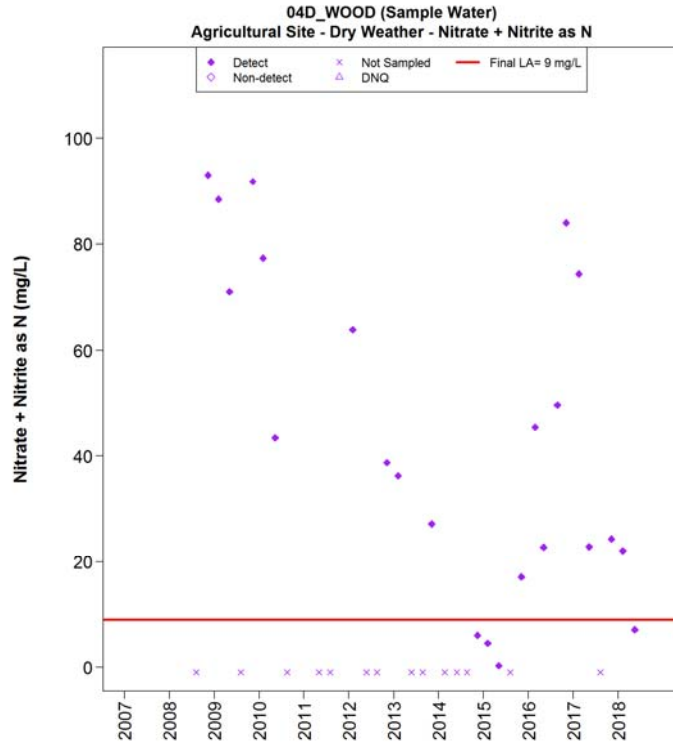


Figure 94. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 04D_WOOD

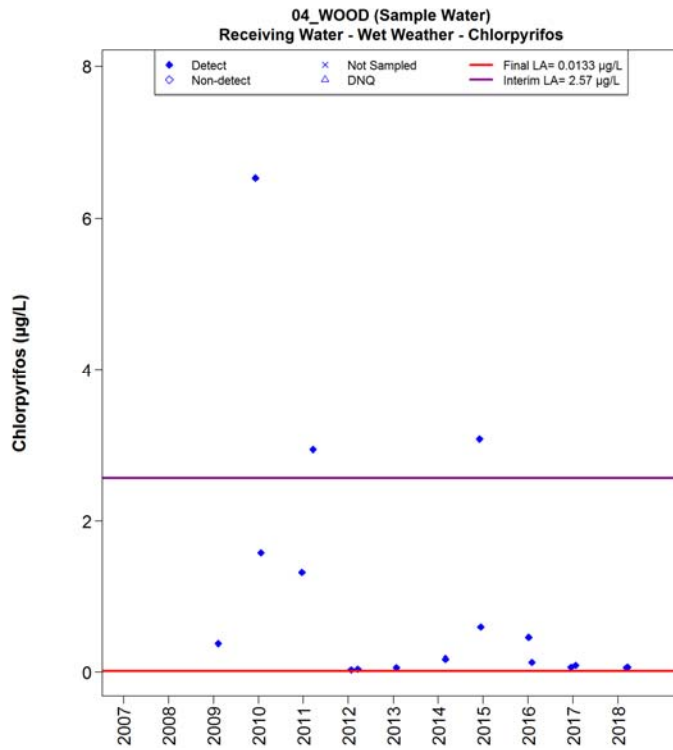


Figure 95. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 04_WOOD

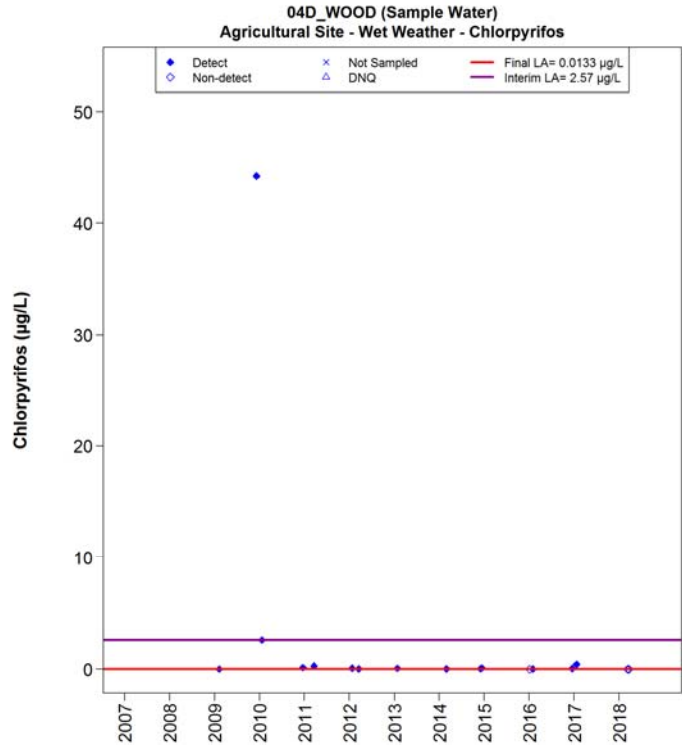


Figure 96. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 04D_WOOD

Table 51. Summary of Benchmark Exceedance Evaluation for South Revolon Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
<i>Bacteria</i>								
<i>E. coli</i>	•			☑	•			☑
<i>Nutrients</i>								
Nitrate-N	•			☑	•			☑
Nitrate-N + Nitrite-N		• ²	• ³	☑				
<i>Metals and Selenium</i>								
Dissolved Copper	•			☑	•			☑
Total Selenium		• ²	• ³	• ⁴				
<i>OC Pesticides (Legacy)</i>								
DDD	•			☑	•			☑
DDE	•			☑	•			☑
DDT	•			☑	•			☑
Toxaphene	•			☑	•			☑
<i>OP and Pyrethroid Pesticides (Current)</i>								
Chlorpyrifos					•	• ^{2,5}	• ^{3,5}	☑
Bifenthrin					•			☑

1. VCAILG monitoring site for Waiver benchmarks is 04D_LAS.
2. CCW Salts TMDL receiving water site is 04_WOOD and actions only apply to Salts TMDL area. TMDL receiving water site for the CCW Nitrogen, Metals, and Toxicity TMDLs is also 04_WOOD.
3. Agricultural land use site for the Salts, Nitrogen, Metals, and Toxicity TMDL is 04D_WOOD.
4. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
5. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.

Table 52. BMPs for Additional Implementation in the South Revolon Responsibility Area

Exceedance Condition									Survey Question #	BMP	% of Total Applicable Surveyed Units	Additional Implementation Needed?
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Pesticides				
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet				
		x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	0.3%	Yes
x		x	x	x	x	x	x		Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	22%	Yes
		x	x	x	x	x	x		1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	100%	No
		x	x	x	x				2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	80%	Yes
		x	x						3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	70%	Yes
		x	x						4	Certified nutrient management plan has been prepared for the property	19%	Yes
		x	x						5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	80%	Yes
		x	x						6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	100%	No
		x	x						7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	60%	Yes
		x	x						8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	100%	No
		x	x	x	x	x	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	77%	Yes
			x	x	x	x	x	x	11	How much non-cropped area is bare soil	73%	Yes
x	x	x	x	x	x	x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	42%	Yes
x	x	x	x	x	x	x	x	x	13	Grassed waterways are used	0%	Yes
x	x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	0.2%	Yes
								x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	No
								x	16	An integrated pest management plan is implemented	90%	Yes
x		x	x	x	x	x	x		18	How many acres produce irrigation runoff	46%	Yes
x	x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	0%	Yes

Table 53. Proposed Best Management Practices for the South Revolon Responsibility Area

Water Quality Issues										BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides		
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	
		x	x	x	x	x	x		x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x		x		x			x			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
		x		x			x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
		x		x						Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
		x								Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
		x	x							Prepare a certified nutrient management plan for the property
		x	x							Conduct soil residual nitrate tests and use results to adjust fertilizer application
		x	x							Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
		x	x							Analyze irrigation water nitrate and use results to adjust fertilizer application
		x	x							Adjust fertilizer application to account for nutrients provided by cover crops
		x	x	x	x	x	x		x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
			x		x			x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
									x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions

Water Quality Issues										Current Use Pesticides	BMPs
Bacteria		Nutrients		Metals		Legacy Pesticides					
Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	
										x	Implement an integrated pest management plan
x		x		x		x					Avoid/prevent irrigation runoff
<i>Structural Non-Treatment BMPs</i>											
x	x	x	x	x	x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	x	x	x	x	Use vegetated filter strips
<i>Optional Structural BMPs</i>											
x	x	x	x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

LaVista Drain Responsibility Area



Figure 97. LaVista Drain Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the LaVista Drain responsibility area are illustrated in Figure 97. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 04_WOOD is a CCW Salts, OC Pesticides and PCBs, Toxicity, and Metals TMDL Receiving Water Compliance Site
- 05_CENTR is a CCW Nitrogen TMDL Receiving Water Compliance Site
- 05D_SANT_VCWPD is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 54. LaVista Drain Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site 05D_LAVD
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	6,087	766
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	338	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	5,344	766
Assessed Acres from Agricultural Parcel List belonging to Non Members	405	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	4,367	620
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.82	0.81
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	331	0
Total Estimated Irrigated Acres (Member plus Non Member)	4,698	620
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	93%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	3,841	584
Percent of Total Estimated Irrigated Acres that were Surveyed	82%	94%
Percent of VCAILG Member Irrigated Acres that were Surveyed	88%	94%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 55. LaVista Drain Responsibility Area Crop Types and General Production Practices

Crop or Practice	05D_LAVD Site Drainage Only				05D_LAVD Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	585	544	22%	14%
Blueberries	101*	16	18%*	3%	22*	37	0.8%*	1%
Raspberries	-	81	-	14%	-	286	-	7%
Row Crop	50	20	9%	3%	278	246	10%	6%
Orchard	392	467	70%	80%	1,805	2,698	67%	70%
Nursery	-	-	-	-	-	9	-	0.2%
Flower	-	-	-	-	-	18	-	0.5%
Sod	-	-	-	-	-	3	-	0.1%
Other	20	-	4%	-	-	-	-	-
Overhead Cover in Production Areas								
Hoop House	-	97	-	17%	-	332	-	8%
No Cover	-	20	-	3%	256	813	9%	21%
Greenhouse	-	-	-	-	-	3	-	0.1%
Shade	-	-	-	-	-	3	-	0.1%
Other	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas								
Bare Soil	276	245	49%	42%	448	1,040	17%	27%
Cover Crop	90	79	16%	14%	79	158	3%	4%
Plastic	-	20	-	3%	585	564	22%	15%
Weed Cloth	-	-	-	-	-	9	0%	0.2%
Mulch	135	204	24%	35%	1,497	1,900	56%	49%
Gravel	-	-	-	-	-	-	-	-
Other	63	63	11%	11%	118	221	4%	6%
Irrigation Systems in Production Areas								
Drip Only	188	189	33%	32%	1,100	1,516	41%	39%
Microsprinkler/Drip	-	-	-	-	426	362	16%	9%
Microsprinkler	326	375	58%	64%	844	1,626	31%	42%
Overhead Sprinkler	-	-	-	-	-	5	-	0.1%
Overhead/Drip	50	20	9%	3%	339	333	13%	9%
Furrow Flood	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-

Table 56. LaVista Drain Responsibility Area Grower BMPs

Survey Question	Units	05D_LAVD Site Drainage Only				05D_LAVD Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	375	345	67%	100%	2,550	3,239	96%	99%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	534	564	95%	164%	2,255	3,574	84%	109%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	239	101	45%	36%	772	1,593	30%	50%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	375	264	67%	77%	2,182	2,093	81%	64%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	275	164	49%	48%	1,949	1,718	72%	52%
Q5a: Are soil residual nitrate tests done?	Acres	563	345	100%	100%	2,419	2,955	90%	90%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	563	345	100%	100%	2,419	2,955	90%	90%
Q6: Are leaf/petiole tests conducted?	Acres	375	264	67%	100%	2,598	3,158	97%	99%
Q7a: Is nitrate measured in fertigation water?	Acres	476	323	84%	94%	2,141	2,775	80%	84%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	476	242	84%	70%	2,141	2,694	80%	82%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	261	276	54%	93%	806	665	58%	35%
Sediment Management									
Q9: How many cropped acres are sloped?	Acres	158	211	28%	61%	400	724	15%	22%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	294	358	186%	170%	527	942	132%	130%
Q11: How much non-cropped area is bare soil?	Acres	59	44	11%	31%	164	361	6%	45%
Q12a: How many feet of ditches exist?	Feet	20,640	32,772	N/A	N/A	67,681	108,969	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	15,140	21,872	73%	67%	45,694	77,151	68%	71%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	251	33	9%	1%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	67	40	3%	1%
Q14: How many acres are treated by vegetated filter strips?	Acres	100	100	18%	29%	122	329	5%	10%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	564	345	100%	100%	2,690	3,279	100%	100%
Q16: Is an IPM Plan being implemented?	Acres	564	345	100%	100%	2,690	3,253	100%	99%
Q17a: How many acres are organically farmed?	Acres	104	108	19%	31%	63	171	2%	5%
Q17b: How many acres are conventionally farmed?	Acres	459	308	81%	89%	2,627	3,201	98%	97%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	161	114	29%	33%	557	752	21%	23%
Q19: Runoff from how many acres is treated or detained?	Acres	172	136	31%	39%	624	739	23%	22%

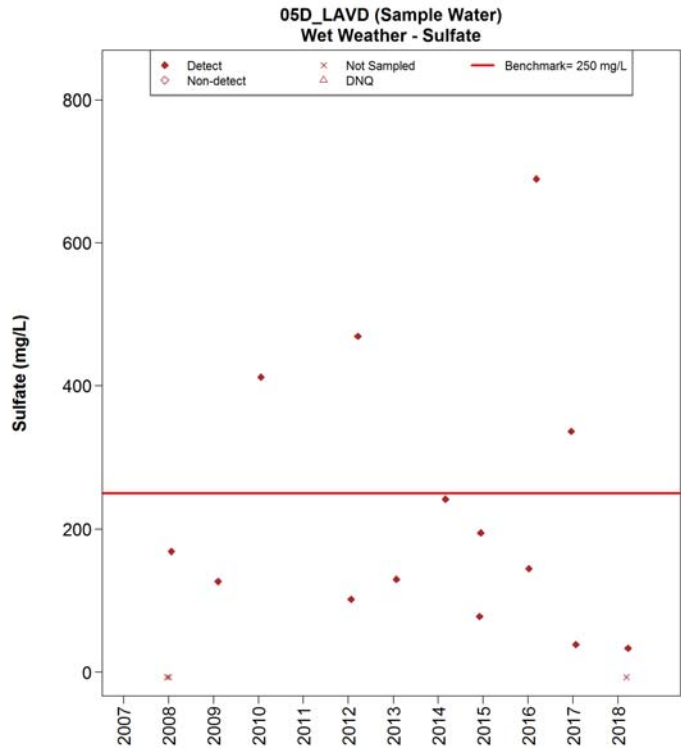


Figure 98. Wet Weather Sulfate Concentrations at Waiver Benchmark Site 05D_LAVD

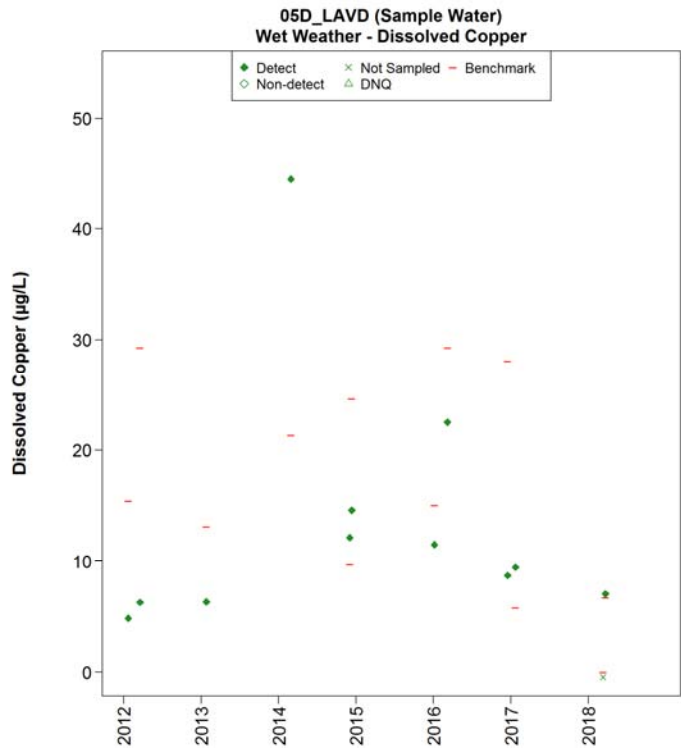


Figure 99. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 05D_LAVD

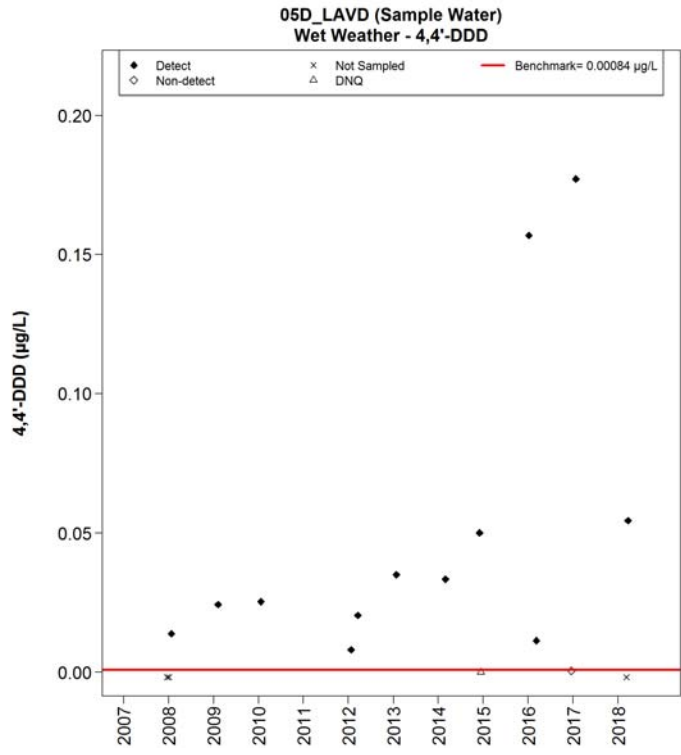


Figure 100. Wet Weather DDD Concentrations at Waiver Benchmark Site 05D_LAVD

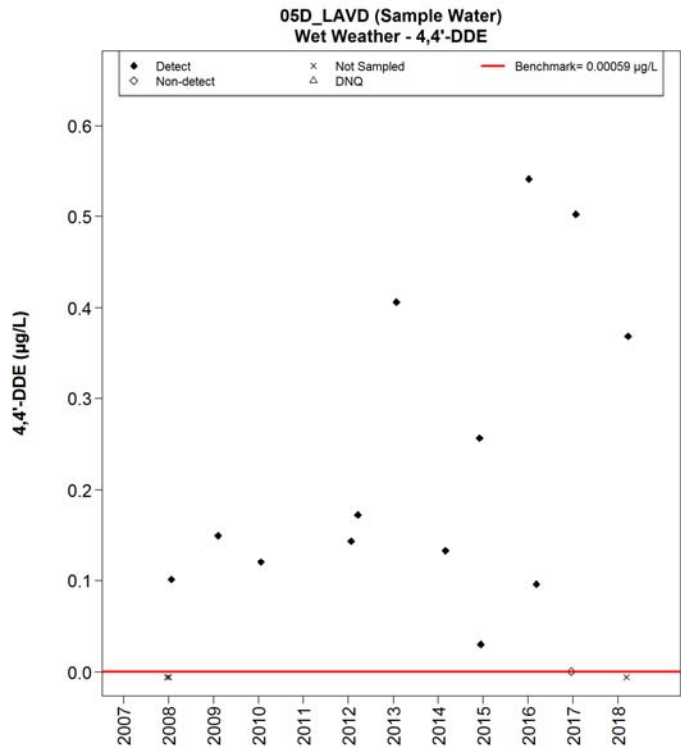


Figure 101. Wet Weather DDE Concentrations at Waiver Benchmark Site 05D_LAVD

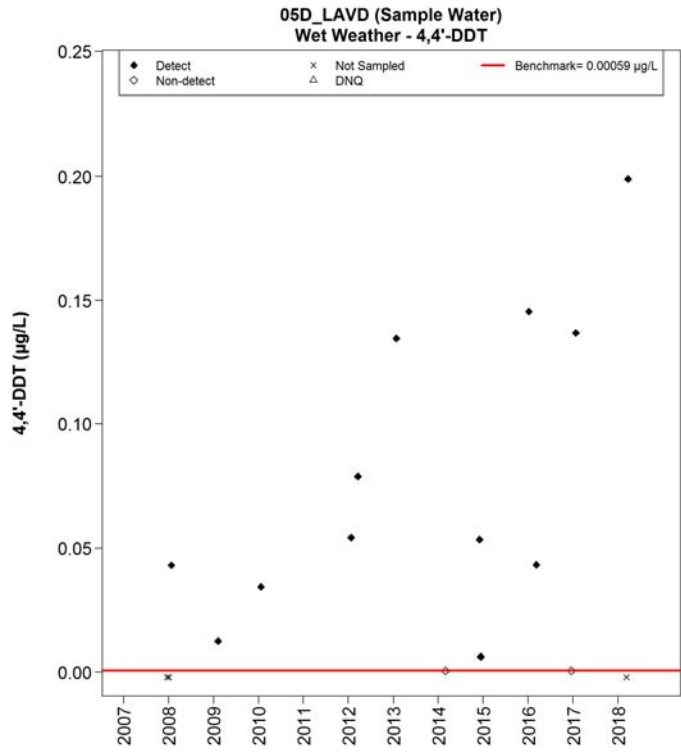


Figure 102. Wet Weather DDT Concentrations at Waiver Benchmark Site 05D_LAVD

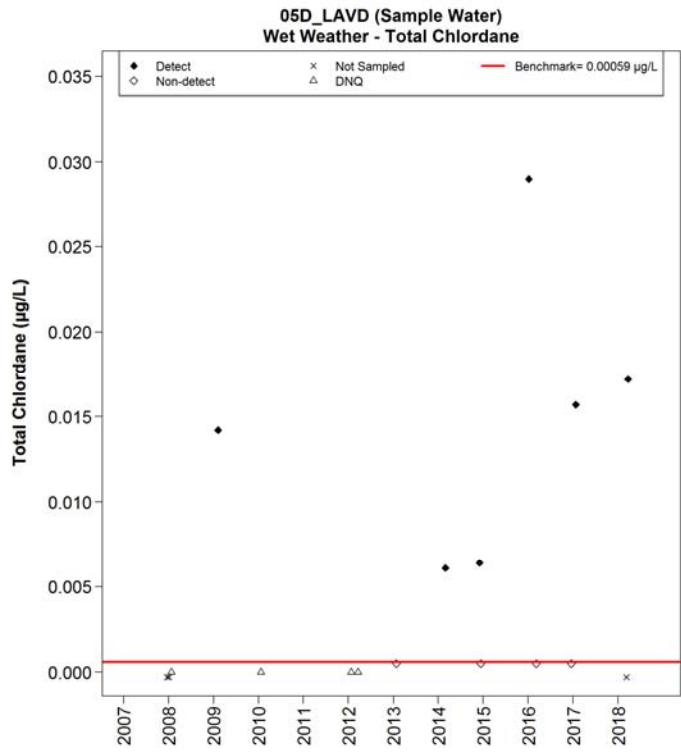


Figure 103. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 05D_LAVD

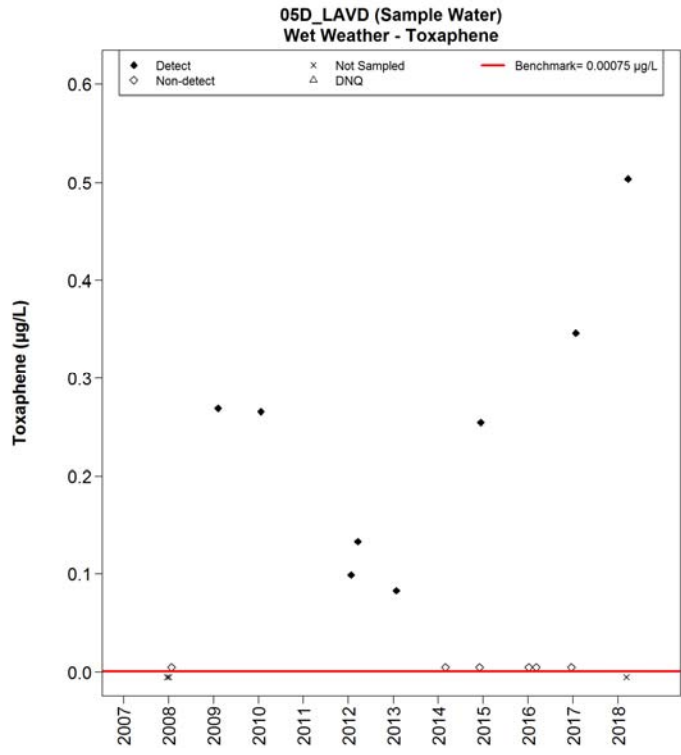


Figure 104. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 05D_LAVD

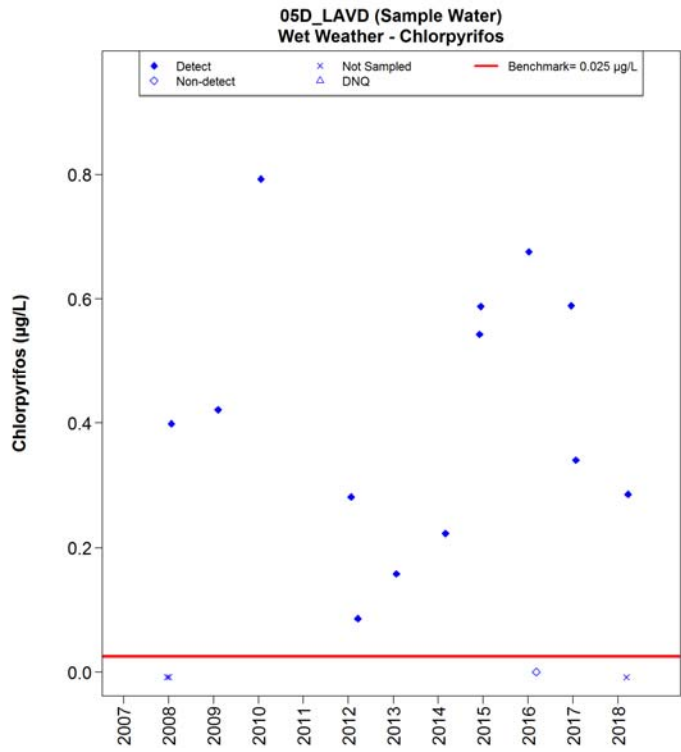


Figure 105. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 05D_LAVD

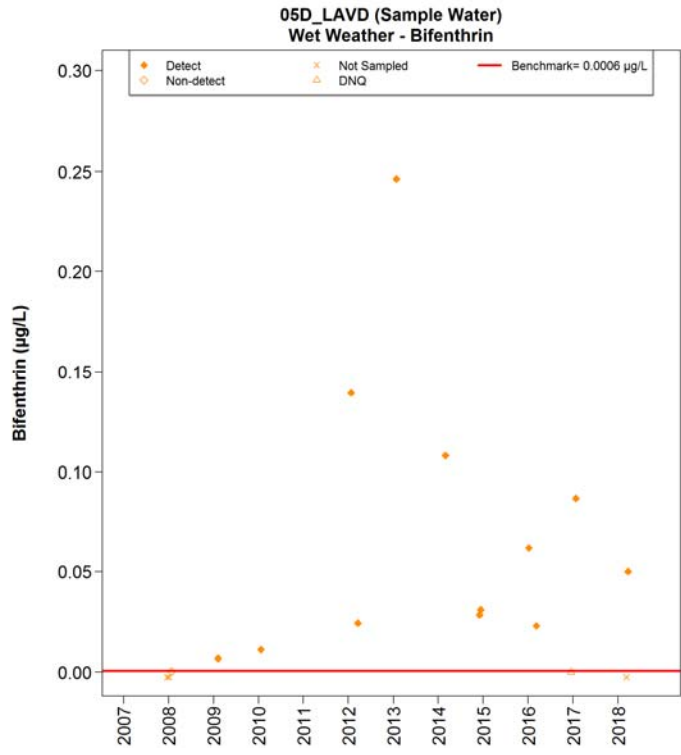


Figure 106. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 05D_LAVD

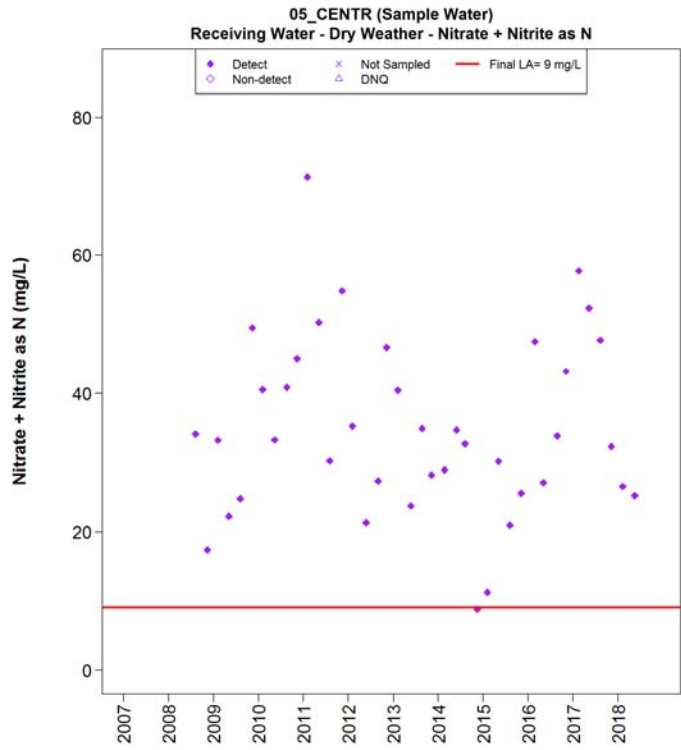


Figure 107. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 05_CENTR

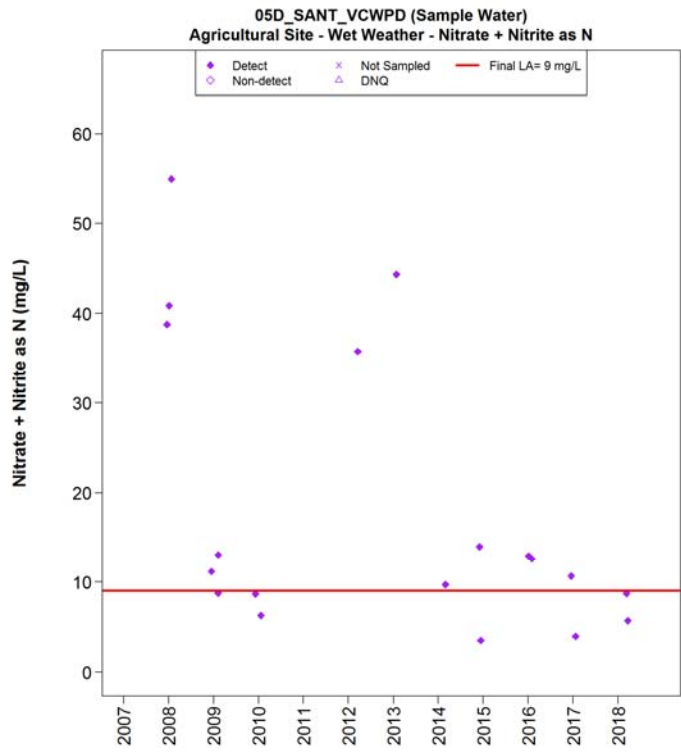


Figure 108. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

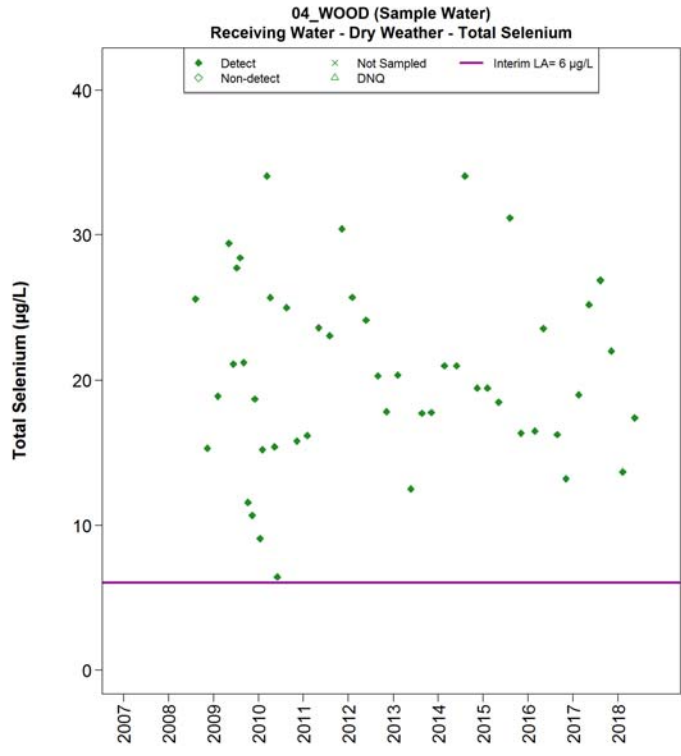


Figure 109. Dry Weather Total Selenium Concentrations at TMDL LA Site 04_WOOD

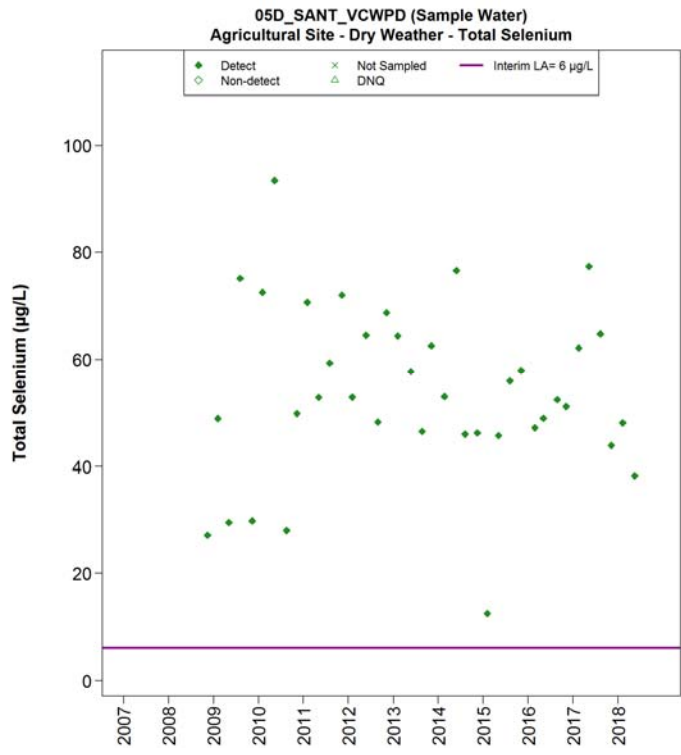


Figure 110. Dry Weather Total Selenium Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

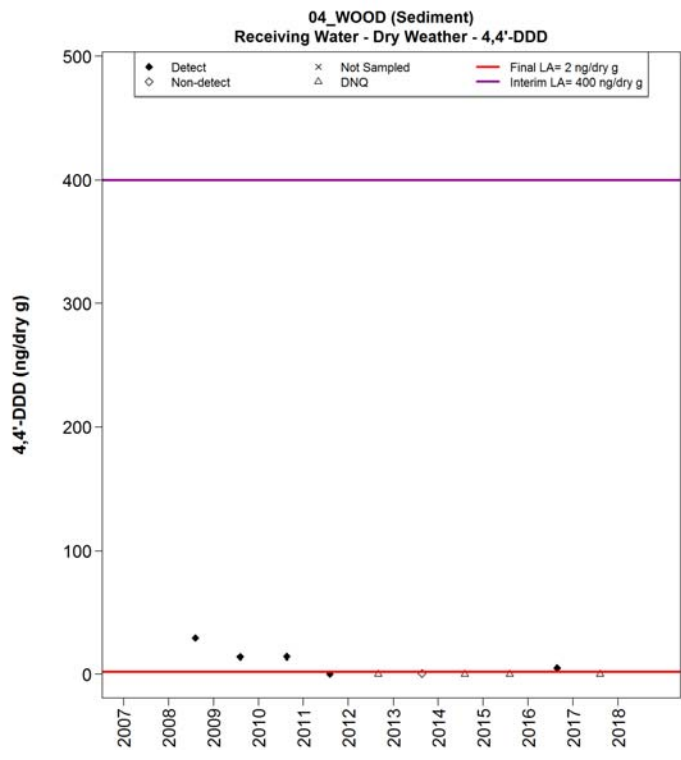


Figure 111. Dry Weather DDD Concentrations at TMDL LA Site 04_WOOD

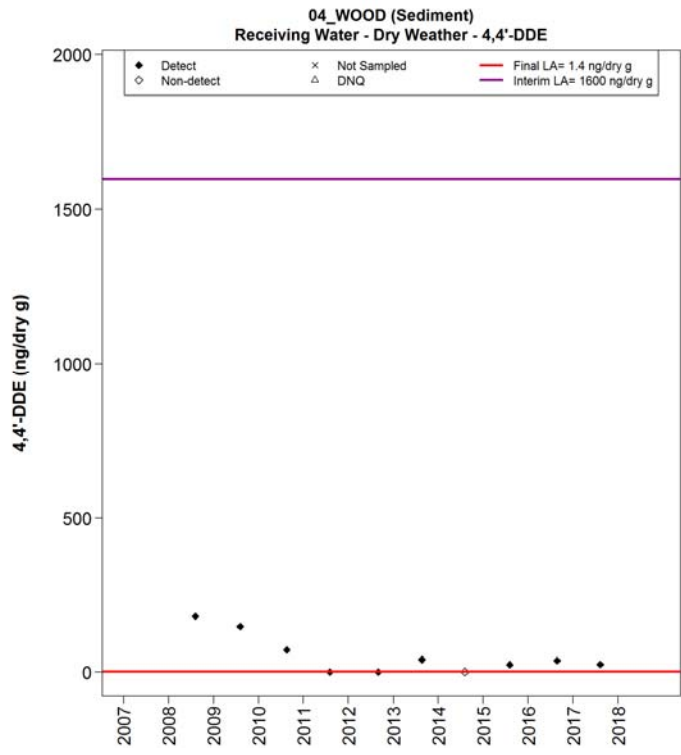


Figure 112. Dry Weather DDE Concentrations at TMDL LA Site 04_WOOD

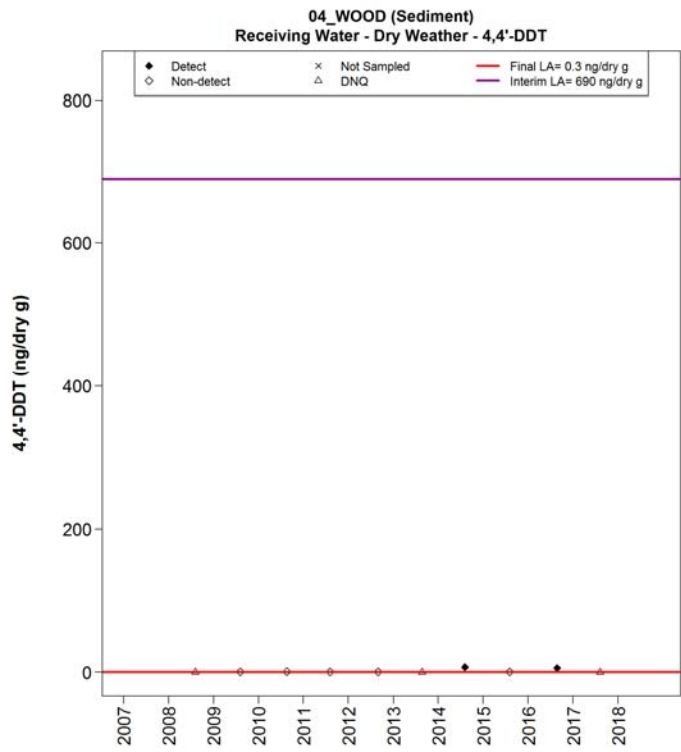


Figure 113. Dry Weather DDT Concentrations at TMDL LA Site 04_WOOD

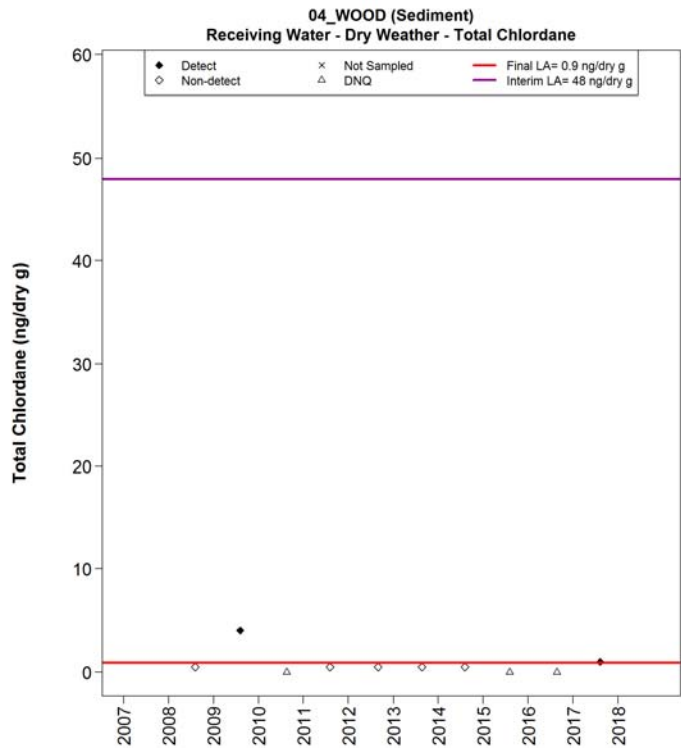


Figure 114. Dry Weather Total Chlordane Concentrations at TMDL LA Site 04_WOOD

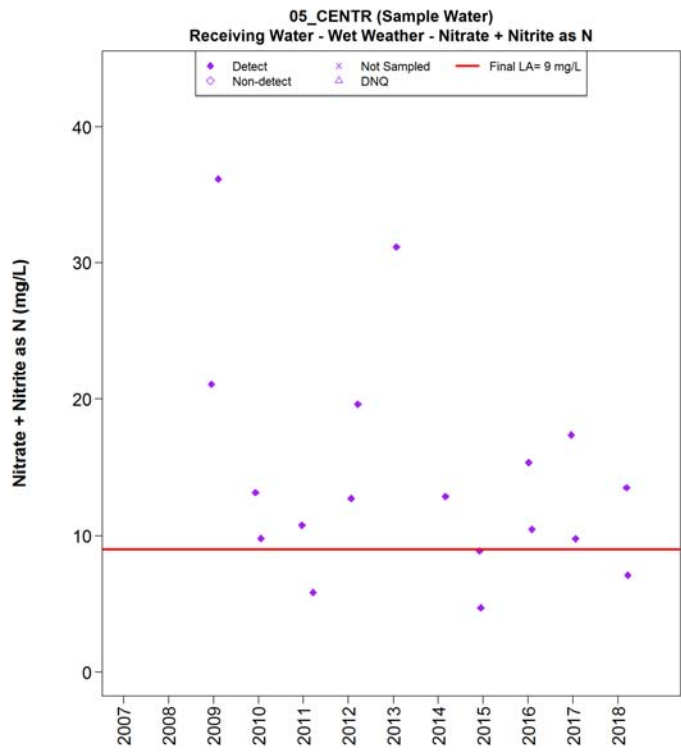


Figure 115. Wet Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 05_CENTR

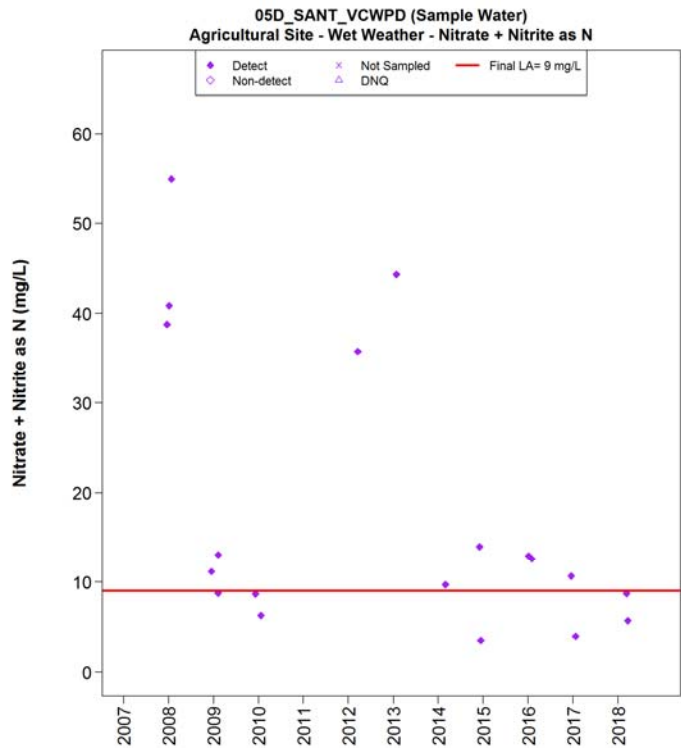


Figure 116. Wet Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

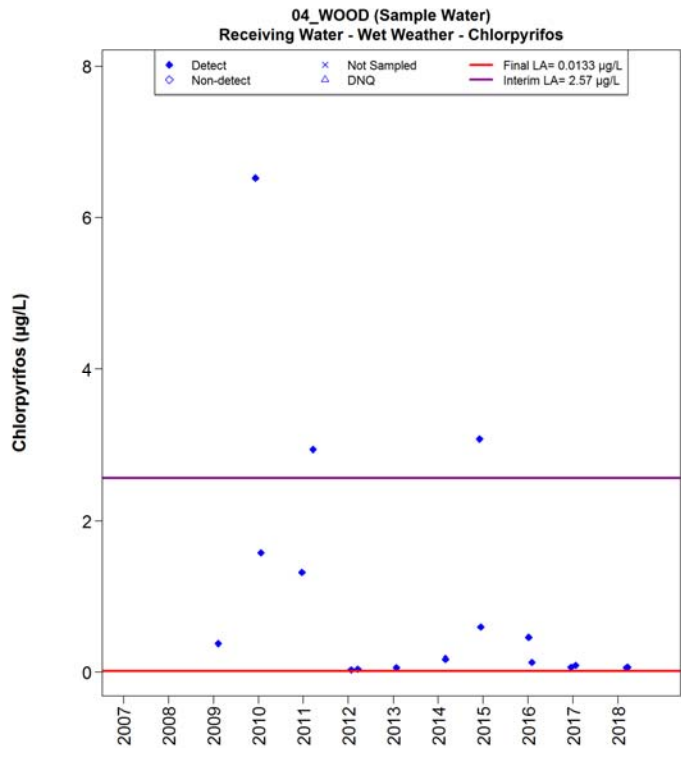


Figure 117. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 04_WOOD

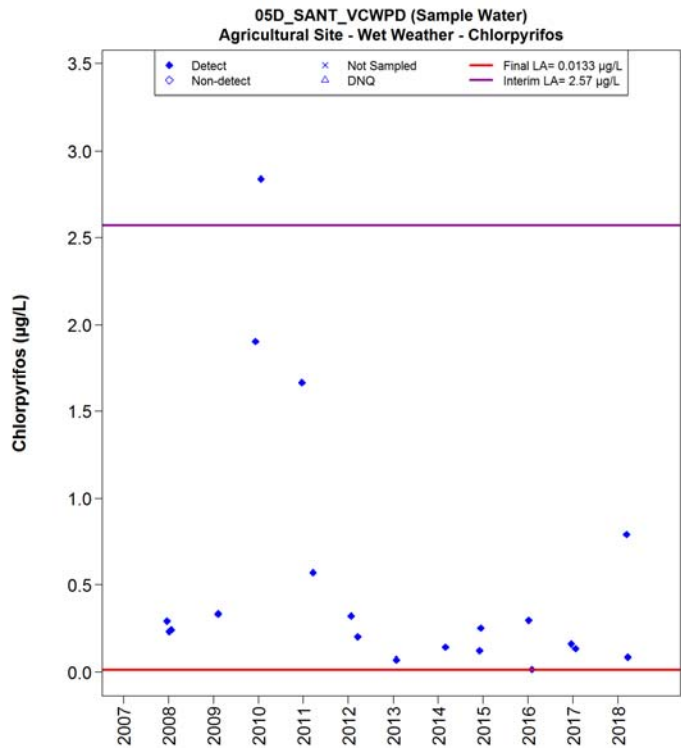


Figure 118. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

Table 57. Summary of Benchmark Exceedance Evaluation for LaVista Drain Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Salts								
Sulfate					●			<input checked="" type="checkbox"/>
Nutrients								
Nitrate-N + Nitrite-N		● ²	● ³	<input checked="" type="checkbox"/>		● ²	● ³	<input checked="" type="checkbox"/>
Metals and Selenium								
Dissolved Copper					●			<input checked="" type="checkbox"/>
Total Selenium		● ⁴	● ³	<input checked="" type="checkbox"/>				
OC Pesticides (Legacy)								
DDD		● ^{5,6}		<input checked="" type="checkbox"/>	●	● ^{5,6}		<input checked="" type="checkbox"/>
DDE		● ^{5,6}		<input checked="" type="checkbox"/>	●	● ^{5,6}		<input checked="" type="checkbox"/>
DDT		● ^{5,6}		<input checked="" type="checkbox"/>	●	● ^{5,6}		<input checked="" type="checkbox"/>
Chlordane		● ^{5,6}		<input checked="" type="checkbox"/>	●	● ^{5,6}		<input checked="" type="checkbox"/>
Toxaphene					●			<input checked="" type="checkbox"/>
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●	● ^{4,6}	● ^{3,6}	<input checked="" type="checkbox"/>
Bifenthrin					●			<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is 05D_LAVD.
2. CCW Nitrogen TMDL receiving water site is 05_CENTR.
3. TMDLs agricultural land use site is 05D_SANT_VCWPD.
4. TMDL receiving water site for Metals and Toxicity TMDLs is 04_WOOD.
5. CCW OC Pesticides TMDL receiving water site is 04_WOOD. TMDL compliance is measured in sediment in receiving water and this location is downstream of where the entire responsibility area discharges. Though sediment is collected during dry weather, the results are applied to both wet and dry weather to ensure management practices minimize sediment transport year-round.
6. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.

Table 58. BMPs for Additional Implementation in the LaVista Drain Responsibility Area

Exceedance Condition								Survey Question #	BMP	% of Total Applicable Surveyed Units				
Salts		Nutrients		Metals		Legacy Pesticides				Current Pesticides		05D_LAVD Site Drainage Only	LaVista Drain Responsibility Area	Additional Implementation Needed?
Wet	Dry	Wet	Dry	Wet	Dry	Wet	Wet							
	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	63%	74%	Yes		
	x	x	x	x	x	x		Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	96%	90%	Yes		
	x	x	x	x	x	x		1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	100%	99%	No		
	x	x	x	x				2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	164%	109%	No		
	x	x						3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	36%	50%	Yes		
	x	x						4	Certified nutrient management plan has been prepared for the property	48%	52%	Yes		
	x	x						5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	100%	90%	Yes		
	x	x						6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	100%	99%	Yes		
	x	x						7	Irrigation water nitrate is analyzed, and the results are used to adjust fertilizer applications.	70%	82%	Yes		
	x	x						8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	93%	35%	Yes		
	x	x	x	x	x	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	170%	130%	No		
		x	x	x	x	x	x	11	How much non-cropped area is bare soil	31%	45%	Yes		
	x	x	x	x	x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	67%	71%	Yes		
x	x	x	x	x	x	x	x	13	Grassed waterways are used	0%	1%	Yes		
x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	29%	10%	Yes		
								15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	100%	No		
								16	An integrated pest management plan is implemented	100%	99%	No		
	x	x	x	x	x	x		18	How many acres produce irrigation runoff	33%	23%	Yes		
x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	39%	22%	Yes		

Table 59. Proposed Best Management Practices for the La Vista Drain Responsibility Area

Water Quality Issues									BMPs
Salt	Nutrients		Metals		Legacy Pesticides		Current Use Pesticides		
Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	Wet Weather	
									<i>Source Control BMPs</i>
	x	x	x	x	x	x		x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x		x		x				Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x		x		x				Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years
	x		x						Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
	x								Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
	x	x							Prepare a certified nutrient management plan for the property
	x	x							Conduct soil residual nitrate tests and use results to adjust fertilizer application
	x	x							Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
	x	x							Analyze irrigation water nitrate and use results to adjust fertilizer application
	x	x							Adjust fertilizer application to account for nutrients provided by cover crops
	x	x	x	x	x	x		x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
		x		x				x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
								x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
								x	Implement an integrated pest management plan
	x		x		x				Avoid/prevent irrigation runoff
									<i>Structural Non-Treatment BMPs</i>
	x	x	x	x	x	x		x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals

Water Quality Issues								
Salt	Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	
Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	
x	x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	x	Use vegetated filter strips
<i>Optional Treatment BMPs</i>								
x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Beardsley Wash Responsibility Area



Figure 119. Beardsley Wash Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Beardsley Wash responsibility area are illustrated in Figure 119. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 04_WOOD is a CCW Salts, OC Pesticides and PCBs, Toxicity, and Metals TMDL Receiving Water Compliance Site
- 05_CENTR is a CCW Nitrogen TMDL Receiving Water Compliance Site
- 05D_SANT_VCWPD is a CCW Salts, Nitrogen, Toxicity, and Metal TMDL Ag Land Use Site

Table 60. Beardsley Wash Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site 05T_HONDO
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	8,777	2,660
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	44	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	7,782	2,657
Assessed Acres from Agricultural Parcel List belonging to Non Members	952	3
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	5,731	1,665
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.74	0.63
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	701	2
Total Estimated Irrigated Acres (Member plus Non Member)	6,432	1,667
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	89%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	5,370	1,637
Percent of Total Estimated Irrigated Acres that were Surveyed	83%	98%
Percent of VCAILG Member Irrigated Acres that were Surveyed	94%	98%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 61. Beardsley Wash Responsibility Area Crop Types and General Production Practices

Crop or Practice	05T_HONDO Site Drainage Only				05T_HONDO Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	127	153	5%	3%
Blueberries	-*	-	-*	-	340*	-	13%*	-
Raspberries		19		1%		428		8%
Row Crop	10	57	0.7%	3%	526	1,078	20%	20%
Orchard	1,447	1551	99%	95%	1,623	3,624	60%	67%
Nursery	-	-	-	-	26	25	1%	0.5%
Flower	10	10	0.7%	1%	4	17	0.1%	0.3%
Sod	-	-	-	-	-	-	-	-
Other	-	-	-	-	45	45	2%	1%
Overhead Cover in Production Areas								
Hoop House	96	23	7%	-	46	436	2%	8%
No Cover	85	-	6%	-	153	1,309	6%	24%
Greenhouse	-	-	-	-	3	-	0.1%	-
Shade	20	-	1%	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas								
Bare Soil	80	-	5%	-	1,341	2,350	50%	44%
Cover Crop	103	-	7%	-	94	110	4%	2%
Plastic	-	-	-	-	122	146	5%	3%
Weed Cloth	-	-	-	-	7	7	0.3%	0.1%
Mulch	1,288	-	88%	-	1,218	2,644	45%	49%
Gravel	-	-	-	-	5	5	0.2%	0.1%
Other	-	-	-	-	-	111	-	2%
Irrigation Systems in Production Areas								
Drip Only	881	-	60%	-	1,237	2,664	46%	50%
Microsprinkler/Drip	-	-	-	-	77	94	3%	2%
Microsprinkler	586	-	40%	-	980	1,692	36%	32%
Overhead Sprinkler	-	-	-	-	51	45	2%	1%
Overhead/Drip	-	-	-	-	349	875	13%	16%
Furrow Flood	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-

Table 62. Beardsley Wash Responsibility Area Grower BMPs

Survey Question	Units	05T_HONDO Site Drainage Only				05T_HONDO Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	1,382	1,499	94%	97%	2,109	4,289	79%	88%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	1,344	1,513	92%	98%	2,076	4,268	77%	87%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	43	166	3%	11%	1,104	1,314	42%	28%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	1,389	1,522	95%	98%	2,128	3,742	79%	77%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	1,215	1,304	83%	84%	1,458	2,521	54%	52%
Q5a: Are soil residual nitrate tests done?	Acres	1,279	1,411	87%	91%	1,790	3,806	67%	78%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	1,279	1,411	87%	91%	1,790	3,806	67%	78%
Q6: Are leaf/petiole tests conducted?	Acres	1,394	1,458	95%	95%	2,599	4,203	97%	93%
Q7a: Is nitrate measured in fertigation water?	Acres	1,380	1,497	94%	96%	1,515	3,436	56%	70%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	1,360	1,477	93%	95%	1,515	3,416	56%	70%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops	Acres	108	120	29%	32%	506	1,033	84%	71%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	368	368	25%	24%	541	1,197	20%	25%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	519	519	141%	141%	566	1,306	105%	109%
Q11: How much non-cropped area is bare soil?	Acres	277	227	19%	25%	151	605	6%	32%
Q12a: How many feet of ditches exist?	Feet	42,143	42,143	N/A	N/A	309,471	387,160	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	29,110	29,110	69%	69%	57,889	101,334	19%	26%
Q13a: Are grassed waterways present?	Acres	93	93	6%	6%	323	386	12%	8%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	160	182	6%	4%
Q14: How many acres are treated by vegetated filter strips?	Acres	99	99	7%	6%	90	223	3%	5%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	1,447	1,532	99%	99%	2,691	4,844	100%	99%
Q16: Is an IPM Plan being implemented?	Acres	1,447	1,532	99%	99%	2,669	4,798	99%	98%
Q17a: How many acres are organically farmed?	Acres	-	21	-	1%	148	393	6%	8%
Q17b: How many acres are conventionally farmed?	Acres	1,467	1,531	100%	99%	2,543	4,487	94%	92%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	-	-	-	-	73	404	3%	8%
Q19: Runoff from how many acres is treated or detained?	Acres	156	156	11%	10%	570	750	21%	15%

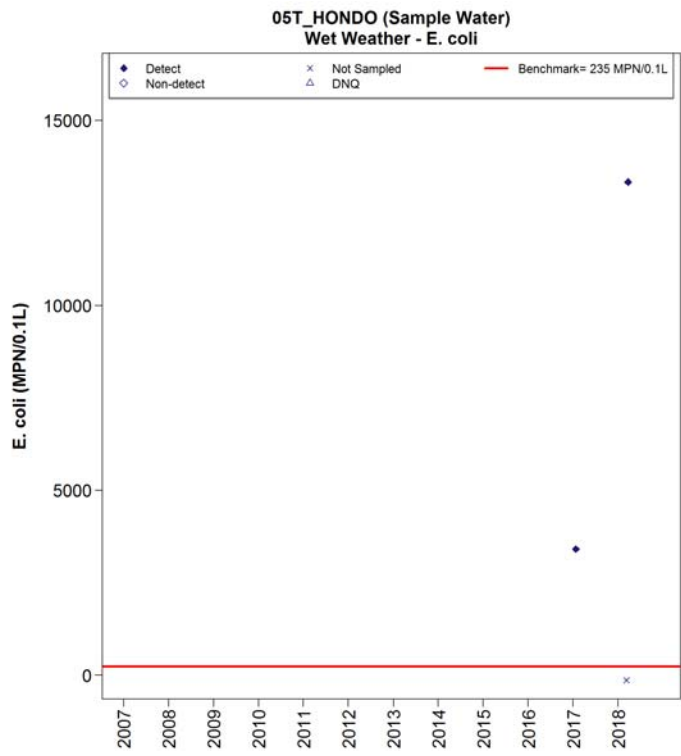


Figure 120. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 05T_HONDO

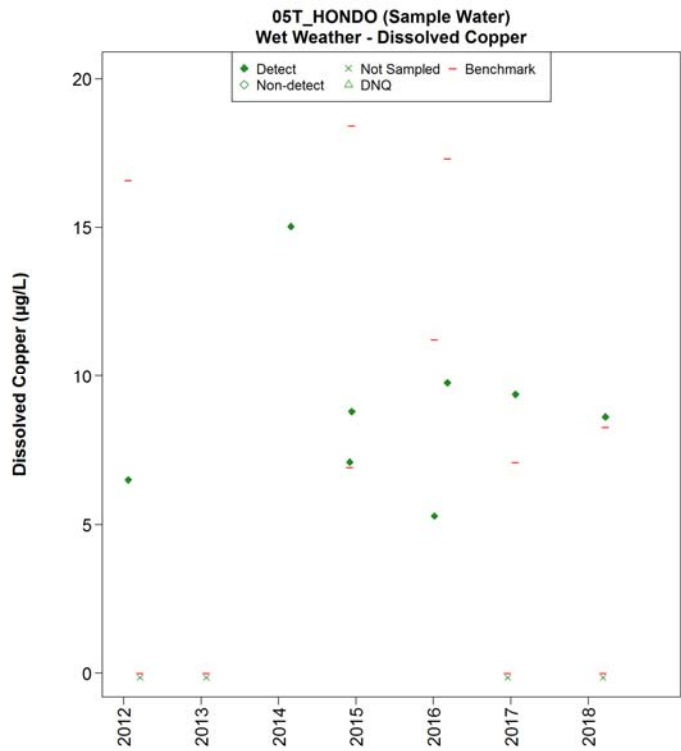


Figure 121. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 05T_HONDO

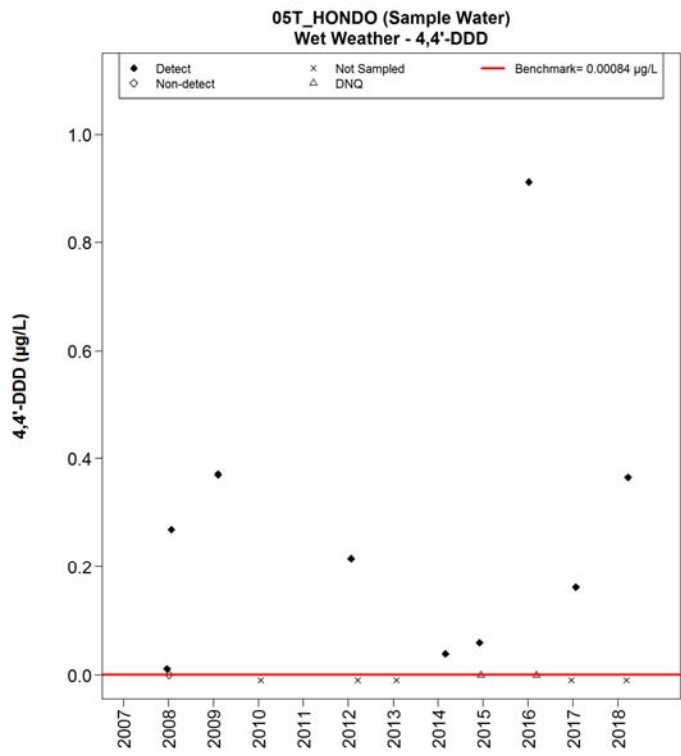


Figure 122. Wet Weather DDD Concentrations at Waiver Benchmark Site 05T_HONDO

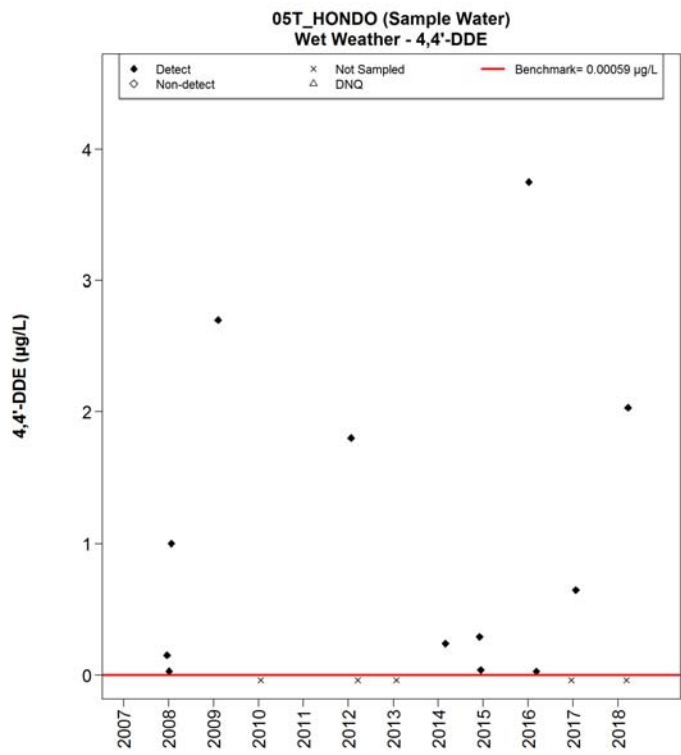


Figure 123. Wet Weather DDE Concentrations at Waiver Benchmark Site 05T_HONDO

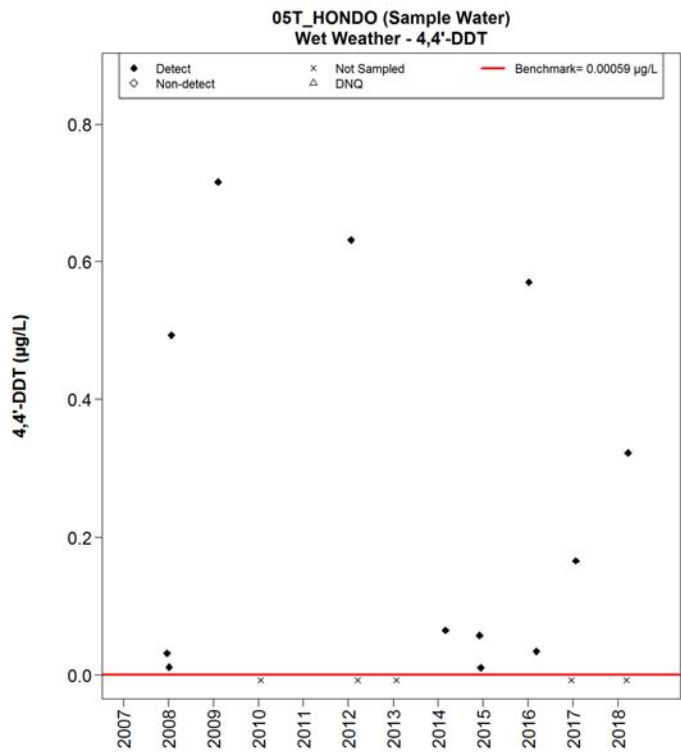


Figure 124. Wet Weather DDT Concentrations at Waiver Benchmark Site 05T_HONDO

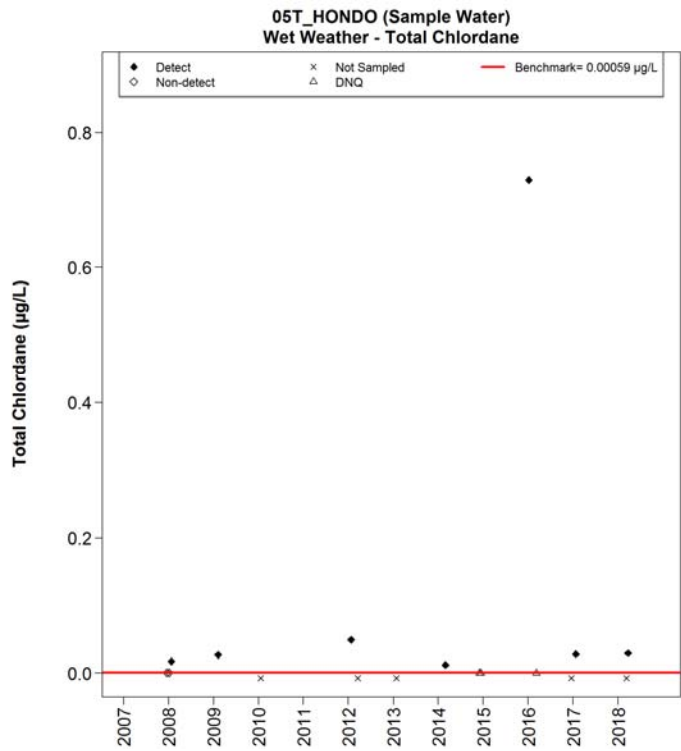


Figure 125. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 05T_HONDO

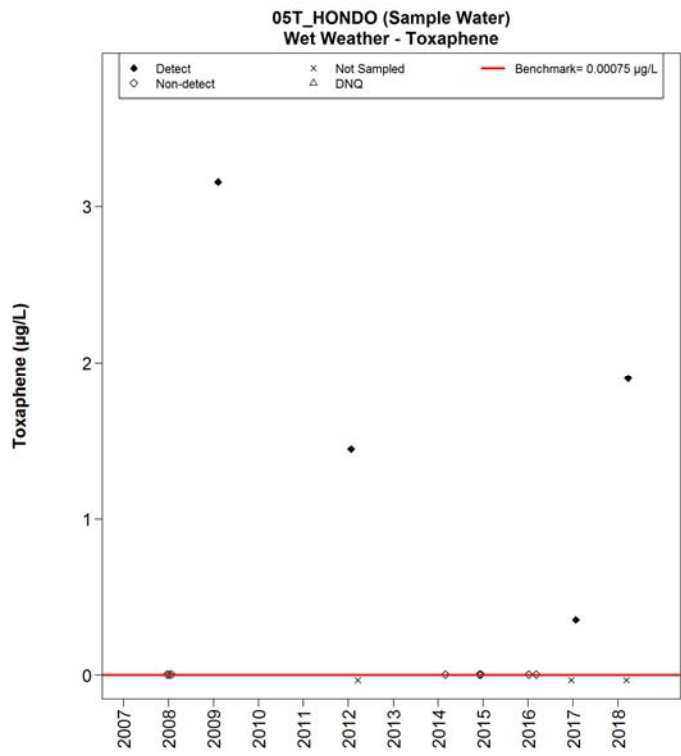


Figure 126. Dry Weather Toxaphene Concentrations at Waiver Benchmark Site 05T_HONDO

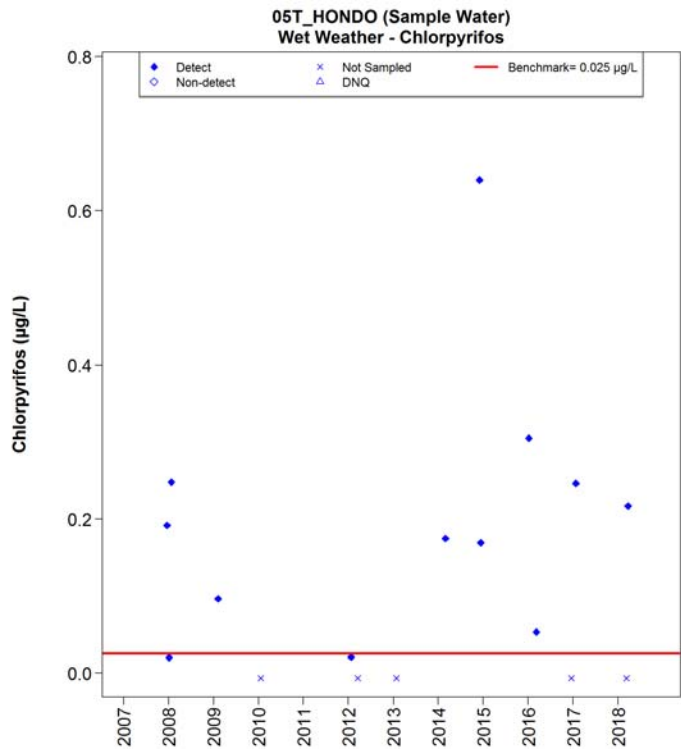


Figure 127. Dry Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 05T_HONDO

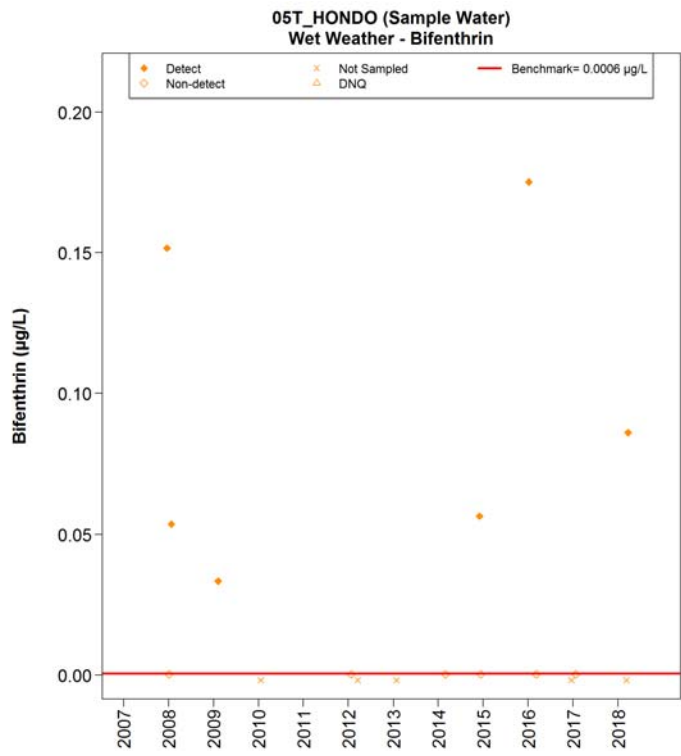


Figure 128. Dry Weather Bifenthrin Concentrations at Waiver Benchmark Site 05T_HONDO

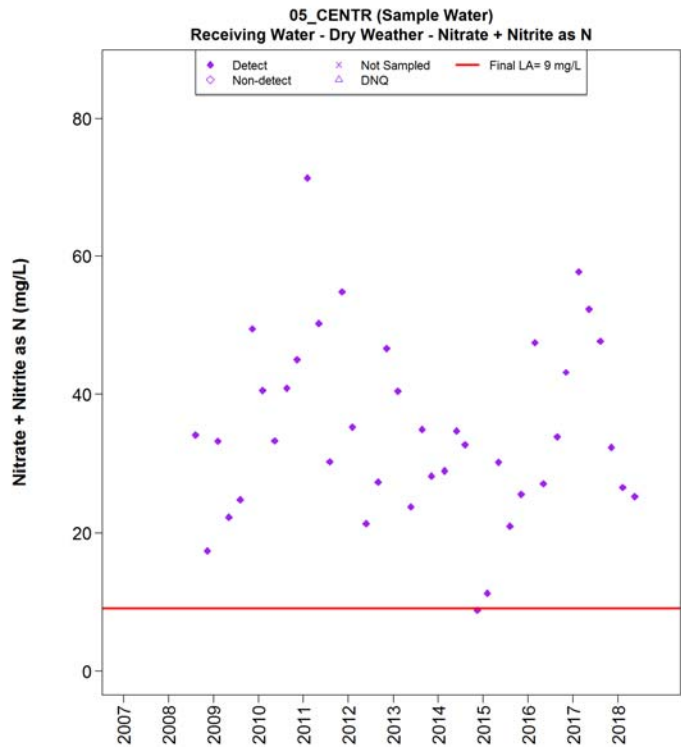


Figure 129. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 05_CENTR

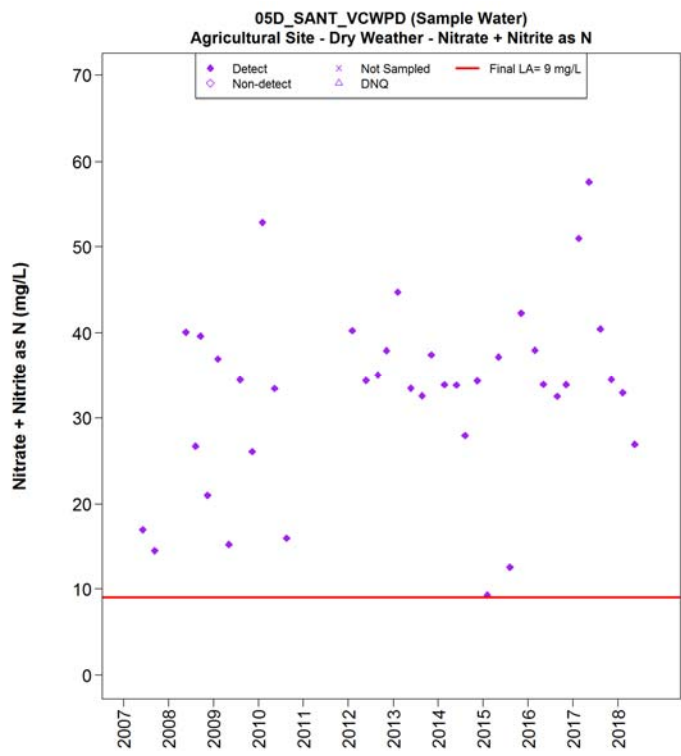


Figure 130. Dry Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

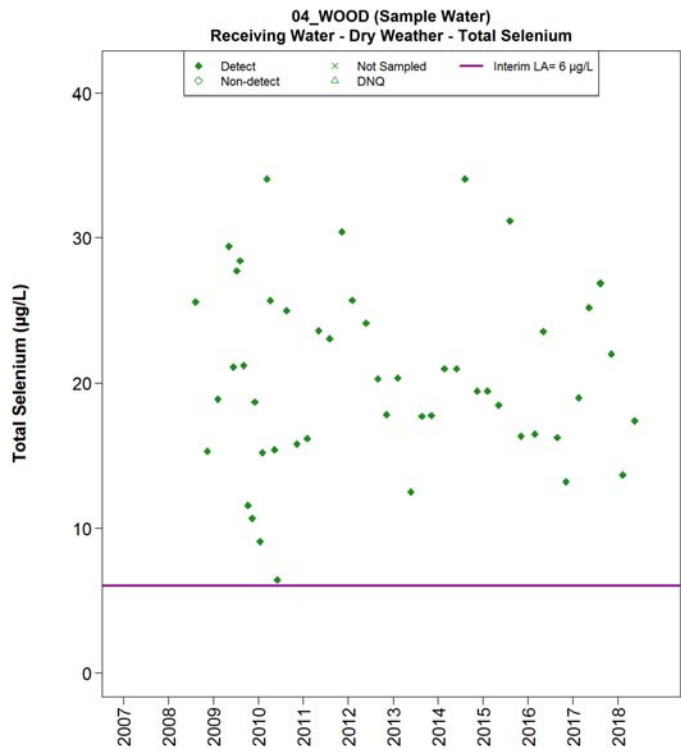


Figure 131. Dry Weather Total Selenium Concentrations at TMDL LA Site 04_WOOD

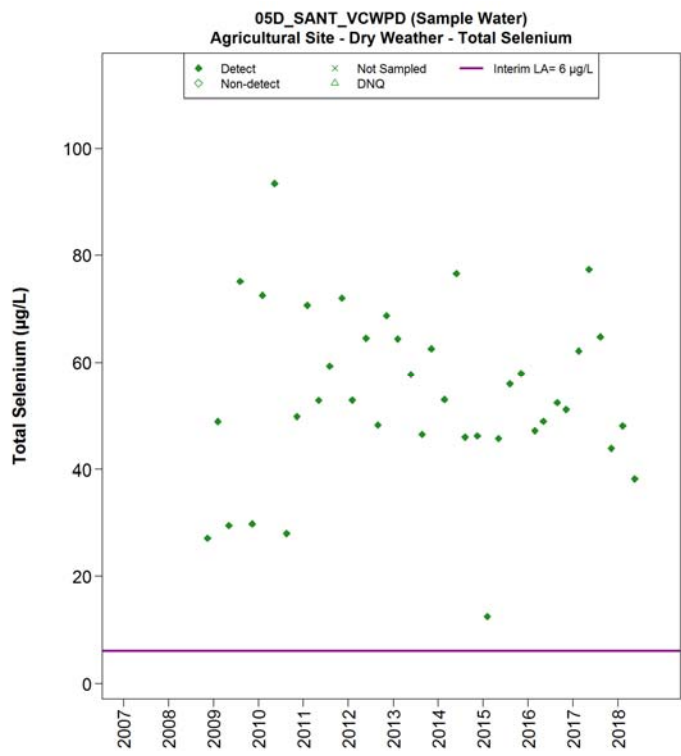


Figure 132. Dry Weather Total Selenium Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

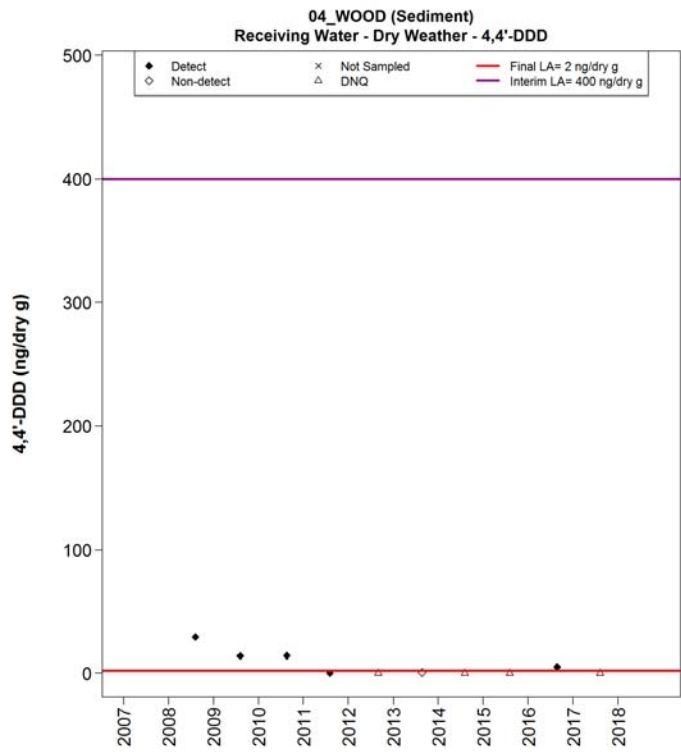


Figure 133. Dry Weather DDD Concentrations at TMDL LA Site 04_WOOD

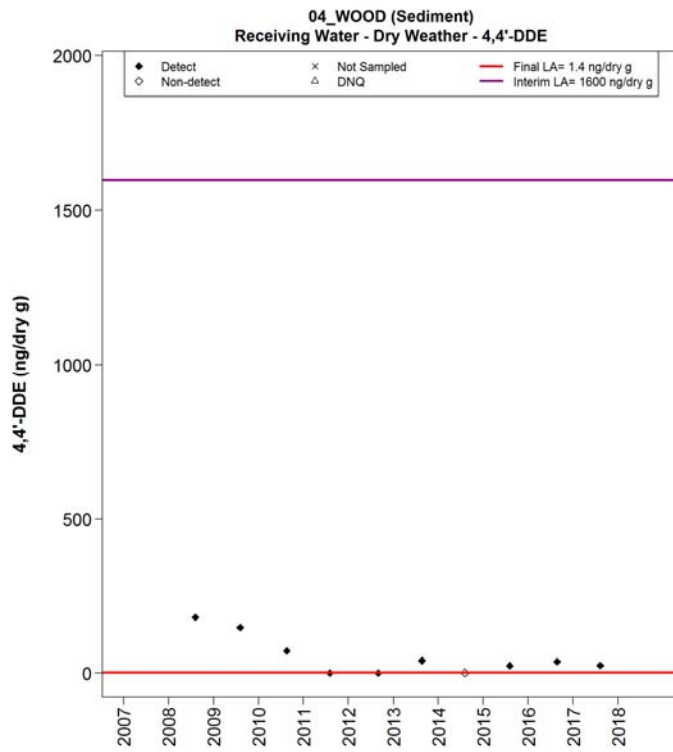


Figure 134. Dry Weather DDE Concentrations at TMDL LA Site 04_WOOD

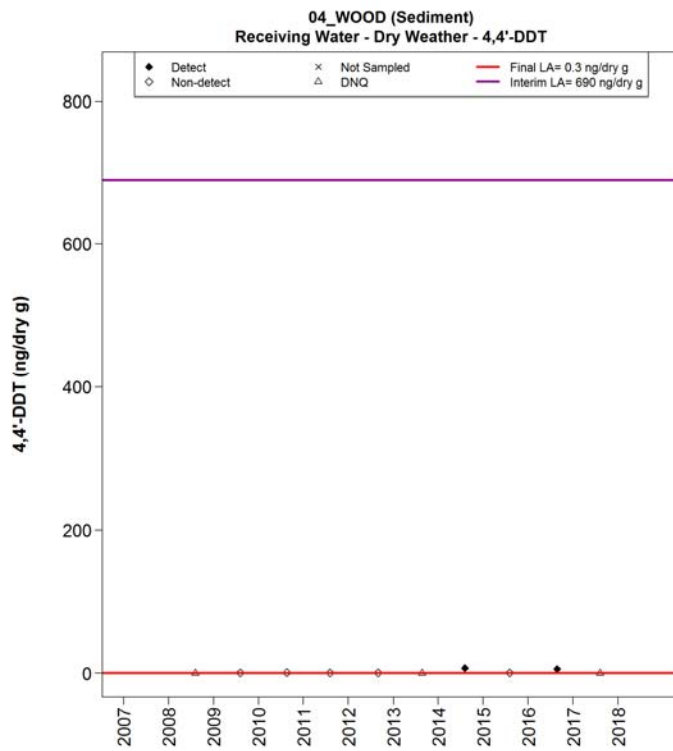


Figure 135. Dry Weather DDT Concentrations at TMDL LA Site 04_WOOD

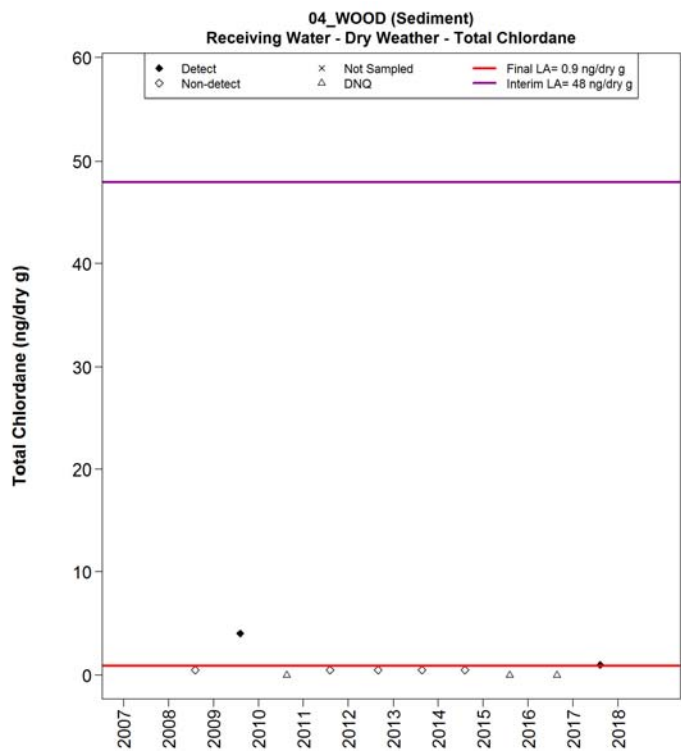


Figure 136. Dry Weather Total Chlordane Concentrations at TMDL LA Site 04_WOOD

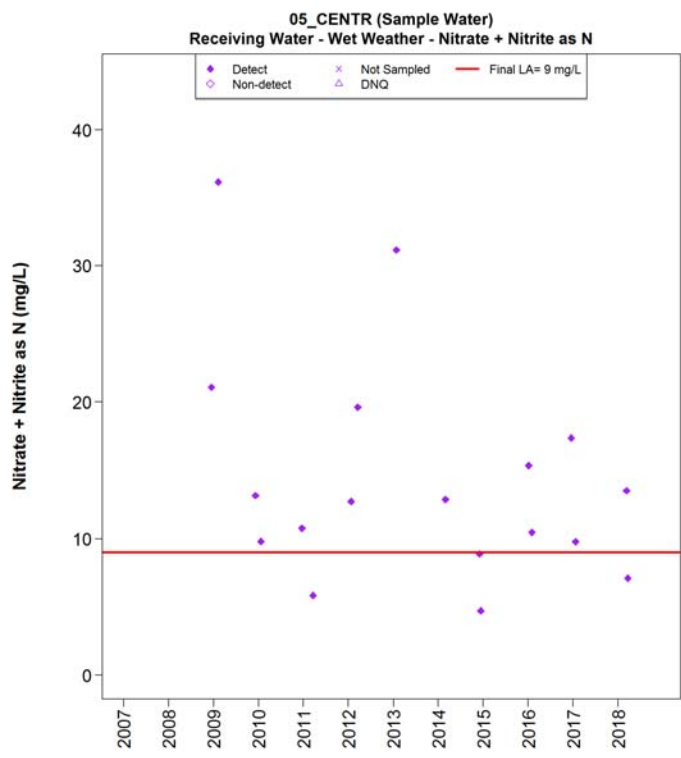


Figure 137. Wet Weather Nitrate-N + Nitrite-N Concentrations at TMDL LA Site 05_CENTR

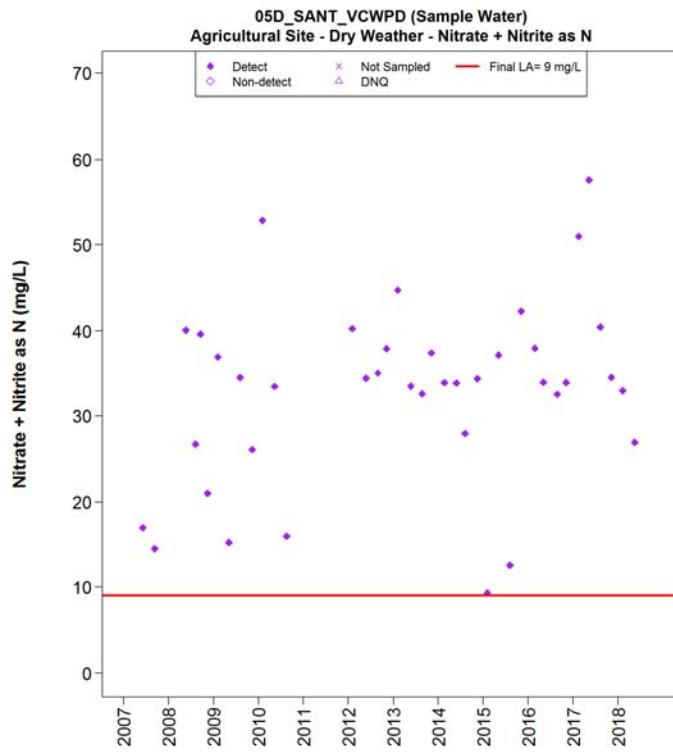


Figure 138. Wet Weather Nitrate-N + Nitrite-N Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

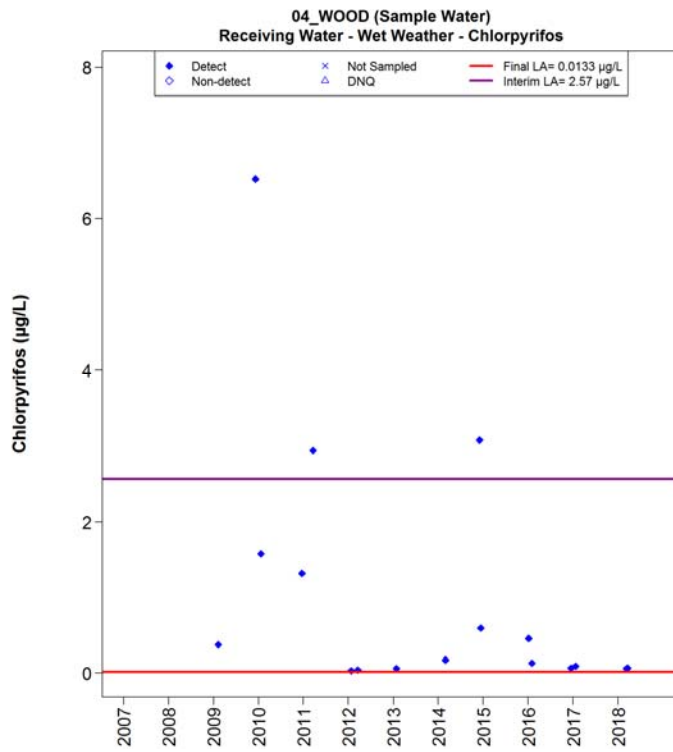


Figure 139. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 04_WOOD

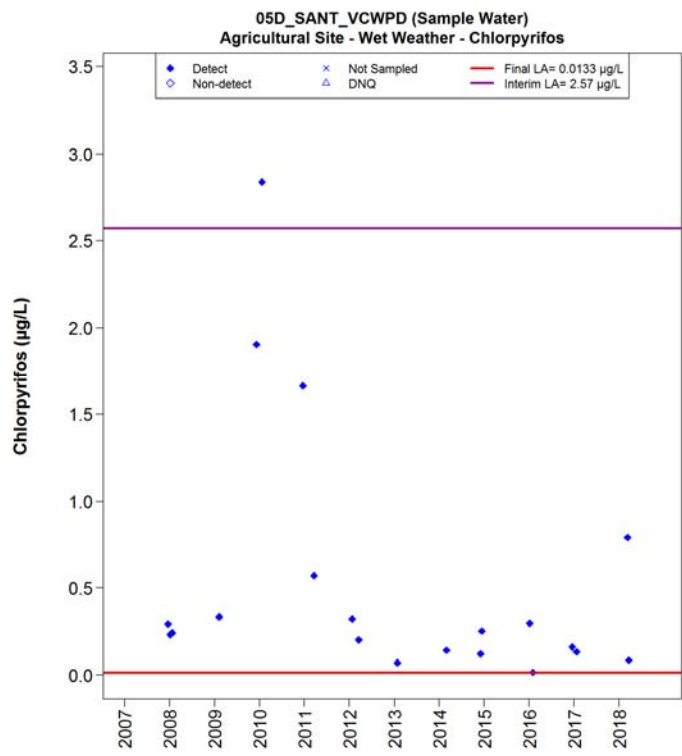


Figure 140. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 05D_SANT_VCWPD

Table 63. Summary of Benchmark Exceedance Evaluation for Beardsley Wash Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
<i>E. coli</i>					●			<input checked="" type="checkbox"/>
Nutrients								
Nitrate-N + Nitrite-N		● ²	● ³	<input checked="" type="checkbox"/>		● ²	● ³	<input checked="" type="checkbox"/>
Metals and Selenium								
Dissolved Copper					●			<input checked="" type="checkbox"/>
Total Selenium		● ⁴	● ³	<input checked="" type="checkbox"/>				
OC Pesticides (Legacy)								
DDD		● ^{5,6}		<input checked="" type="checkbox"/>	●	● ^{5,6}		<input checked="" type="checkbox"/>
DDE		● ^{5,6}		<input checked="" type="checkbox"/>	●	● ^{5,6}		<input checked="" type="checkbox"/>
DDT		● ^{5,6}		<input checked="" type="checkbox"/>	●	● ^{5,6}		<input checked="" type="checkbox"/>
Chlordane		● ^{5,6}		<input checked="" type="checkbox"/>	●	● ^{5,6}		<input checked="" type="checkbox"/>
Toxaphene					●			<input checked="" type="checkbox"/>
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●	● ^{4,6}	● ^{3,6}	<input checked="" type="checkbox"/>
Bifenthrin					●			<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is 05T_HONDO.
2. CCW Nitrogen TMDL receiving water site is 05_CENTR.
3. TMDLs agricultural land use site is 05D_SANT_VCWPD.
4. CCW Salts, Metals, and Toxicity TMDLs receiving water site is 04_WOOD.
5. CCW OC Pesticides TMDL receiving water site is 04_WOOD. TMDL compliance is measured in sediment in receiving water and this location is downstream of where the entire responsibility area discharges. Though sediment is collected during dry weather, the results are applied to both wet and dry weather to ensure management practices minimize sediment transport year-round.
6. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.

Table 64. BMPs for Additional Implementation in the Beardsley Wash Responsibility Area

Exceedance Condition								Survey Question #	BMP	% of Total Applicable Surveyed Units		
Bacteria	Nutrients		Metals and Selenium		Legacy Pesticides		Current Pesticides			05T_HONDO Site Drainage Only	Beardsley Wash Responsibility Area	Additional Implementation Needed?
Wet	Dry	Wet	Dry ^[a]	Wet	Dry	Wet	Wet					
	x	x	x	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	0%	56%	Yes
	x	x	x		x	x		Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	0%	84%	Yes
	x	x	x		x	x		1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	97%	88%	Yes
	x	x	x					2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	98%	87%	Yes
	x	x						3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	11%	28%	Yes
	x	x						4	Certified nutrient management plan has been prepared for the property	84%	52%	Yes
	x	x						5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	91%	78%	Yes
	x	x						6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	95%	93%	Yes
	x	x						7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	95%	70%	Yes
	x	x						8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	32%	71%	Yes
	x	x	x	x	x	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	141%	109%	No
		x		x	x	x	x	11	How much non-cropped area is bare soil	25%	32%	Yes
x	x	x	x	x	x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	69%	26%	Yes
x	x	x	x	x	x	x	x	13	Grassed waterways are used	6%	8%	Yes
x	x	x	x	x	x	x	x	14	Vegetated filter strips are used	6%	5%	Yes
							x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	99%	99%	No
							x	16	An integrated pest management plan is implemented	99%	98%	No
	x	x	x		x	x		18	How many acres produce irrigation runoff	0%	8%	Yes
x	x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	10%	15%	Yes

[a] Exceedances for selenium.

Table 65. Proposed Best Management Practices for the Beardsley Wash Responsibility Area

Water Quality Issues								BMPs
Bacteria	Nutrients		Metals	Legacy Pesticides		Current Use Pesticides		
Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather	
	x	x	x	x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x		x		x			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x		x		x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
	x		x					Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
	x							Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
	x	x						Prepare a certified nutrient management plan for the property
	x	x						Conduct soil residual nitrate tests and use results to adjust fertilizer application
	x	x						Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
	x	x						Analyze irrigation water nitrate and use results to adjust fertilizer application
	x	x						Adjust fertilizer application to account for nutrients provided by cover crops
	x	x	x	x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
		x		x		x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel

Water Quality Issues

Bacteria		Nutrients		Metals		Legacy Pesticides		Current Use Pesticides	BMPs
Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Dry Weather	Wet Weather	Wet Weather		
								X	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
								X	Implement an integrated pest management plan
	X			X			X		Avoid/prevent irrigation runoff
<i>Structural Non-Treatment BMPs</i>									
X	X	X	X	X	X	X	X	X	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
X	X	X	X	X	X	X	X	X	Use grassed waterways
X	X	X	X	X	X	X	X	X	Use vegetated filter strips
<i>Optional Treatment BMPs</i>									
X	X	X	X	X	X	X	X	X	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Arroyo Conejo Responsibility Area

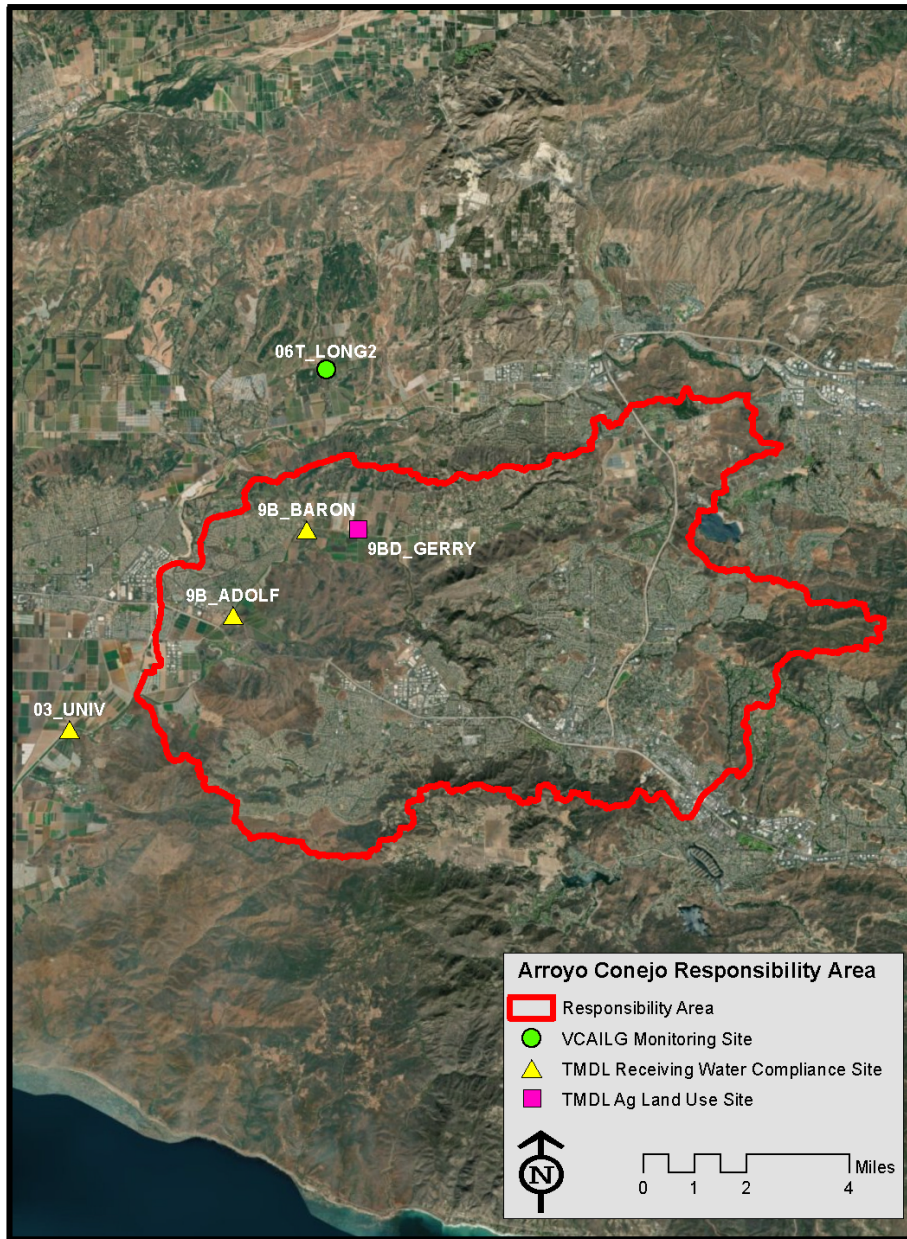


Figure 141. Arroyo Conejo Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Arroyo Conejo responsibility area are illustrated in Figure 141. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 9B_BARON is a CCW Salts TMDL Receiving Water Compliance Site
- 9B_ADOLF is a CCW OC Pesticides and PCBs, Nitrogen, and Toxicity TMDL Receiving Water Compliance Site
- 03_UNIV is a CCW Metals TMDL Receiving Water Compliance Site
- 9BD_GERRY is a CCW Salts, Nitrogen, Toxicity, and Metals TMDL Ag Land Use Site

Table 66. Arroyo Conejo Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Responsibility Area [a]	Drainage Area 06T_LONG2 Monitoring Site [a]
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	8,955	1,844
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [b]	80	34
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	6,473	1,391
Assessed Acres from Agricultural Parcel List belonging to Non Members	2,401	420
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	3,629	1,072
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.56	0.77
Estimated Irrigated Acres in Non Member Agricultural Parcels [c]	1,346	323
Total Estimated Irrigated Acres (Member plus Non Member)	4,976	1,396
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	73%	77%
Survey Response Information		
Sum Surveyed Irrigated Acres	3,104	642
Percent of Total Estimated Irrigated Acres that were Surveyed	62%	46%
Percent of VCAILG Member Irrigated Acres that were Surveyed	86%	60%

[a] Responsibility area does not include the beacon monitoring site drainage area.

[b] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[c] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 67. Arroyo Conejo Responsibility Area Crop Types and General Production Practices

Crop or Practice	06T_LONG2 Site Drainage Only				06T_LONG2-Conejo Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	81	241	4%	8%
Blueberries	15*	-	4%*	-	178*	182	9%*	6%
Raspberries	-	103	-	16%	-	395	-	13%
Row Crop	-	-	-	-	570	859	29%	28%
Orchard	356	495	91%	77%	1,071	1,343	54%	43%
Nursery	-	26	-	4%	55	64	3%	2%
Flower	-	-	-	-	5	5	0.3%	0.2%
Sod	-	-	-	-	-	-	-	-
Other	22	18	6%	3%	8	15	0.4%	0.5%
Overhead Cover in Production Areas								
Hoop House	74	103	19%	16%	-	463	0%	15%
No Cover	653	43	166%	7%	289	1,238	15%	40%
Greenhouse	-	-	-	-	-	7	0%	0.2%
Shade	-	1	-	0.2%	1	52	0.1%	1.7%
Other	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas								
Bare Soil	105	260	27%	41%	1,674	2,177	85%	70%
Cover Crop	54	56	14%	9%	64	120	3%	4%
Plastic	-	-	-	-	-	164	-	5%
Weed Cloth	-	9	-	1%	17	176	0.9%	6%
Mulch	202	291	51%	45%	185	384	9%	12%
Gravel	-	-	-	-	1	2	-	0.1%
Other	31	33	8%	5%	40	86	2%	3%
Irrigation Systems in Production Areas								
Drip Only	50	187	13%	29%	822	1,215	42%	39%
Microsprinkler/Drip	-	-	-	-	-	160	0%	5%
Microsprinkler	321	433	82%	67%	857	1,120	44%	36%
Overhead Sprinkler	-	2	-	-	54	178	3%	6%
Overhead/Drip	-	-	-	-	153	326	8%	10%
Furrow Flood	-	-	-	-	40	62	2%	2%
Hand Watering	-	2	-	-	15	14	0.8%	0.5%
Other	22	-	6%	0.2%	29	-	1%	-

[a] Responsibility area does not include the beacon monitoring site drainage area.

Table 68. Arroyo Conejo Responsibility Area Grower BMPs

Survey Question	Units	06T_LONG2 Site Drainage Only				06T_LONG2-Conejo Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	282	308	74%	71%	1,593	1,612	87%	79%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	312	436	79%	74%	1,265	2,172	64%	93%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	177	272	46%	51%	280	549	15%	25%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	182	266	46%	45%	1,146	1,440	58%	61%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	132	197	34%	33%	485	861	25%	37%
Q5a: Are soil residual nitrate tests done?	Acres	225	356	57%	60%	1,013	1,312	51%	56%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	225	356	57%	60%	1,011	1,311	51%	45%
Q6: Are leaf/petiole tests conducted?	Acres	310	475	79%	94%	1,499	1,941	77%	84%
Q7a: Is nitrate measured in fertigation water?	Acres	135	268	34%	46%	1,017	1,333	52%	57%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	107	268	27%	46%	1,016	1,282	52%	55%
Q8: Is fertilizer adjusted based on nutrients from cover crops	Acres	171	190	60%	53%	734	472	83%	79%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	161	165	41%	28%	566	884	29%	38%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	118	118	73%	72%	305	568	54%	64%
Q11: How much non-cropped area is bare soil?	Acres	37	41	9%	10%	730	1,446	37%	63%
Q12a: How many feet of ditches exist?	Feet	10,375	12,254	N/A	N/A	322,764	477,034	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	7,800	9,608	75%	79%	55,146	202,226	17%	42%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	165	116	8%	5%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	19	50	1%	2%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	-	-	51	88	3%	4%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	390	475	99%	98%	1,932	2,284	98%	97%
Q16: Is an IPM Plan being implemented?	Acres	295	481	75%	82%	1,915	2,199	97%	94%
Q17a: How many acres are organically farmed?	Acres	171	159	44%	27%	64	190	3%	8%
Q17b: How many acres are conventionally farmed?	Acres	222	462	56%	79%	1,904	2,198	97%	94%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	42	55	11%	9%	363	412	18%	18%
Q19: Runoff from how many acres is treated or detained?	Acres	109	113	28%	19%	157	264	8%	11%

[a] Responsibility area does not include the beacon monitoring site drainage area.

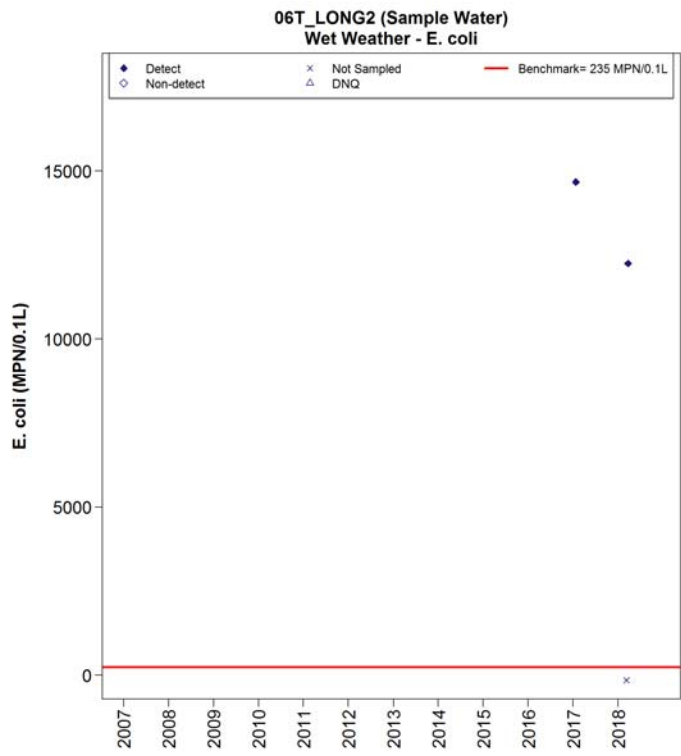


Figure 142. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 06T_LONG2

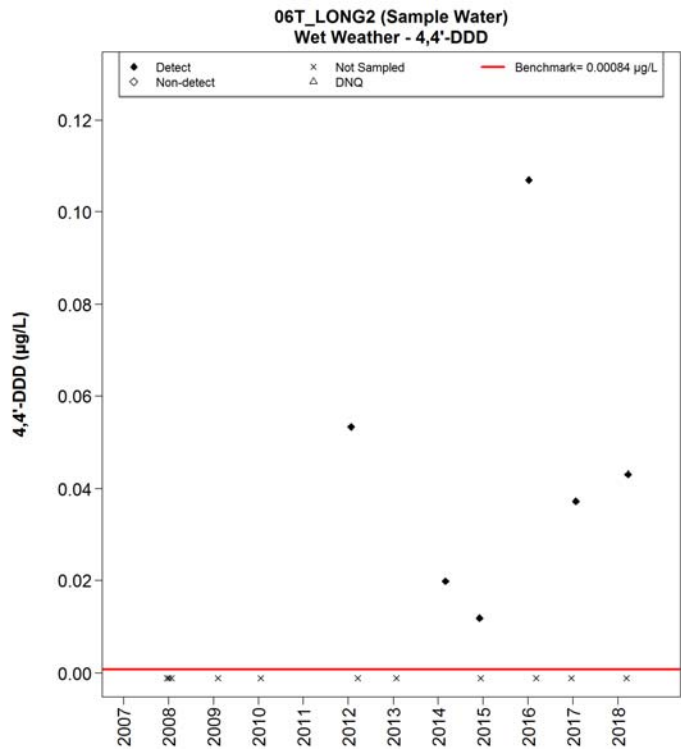


Figure 143. Wet Weather DDD Concentrations at Waiver Benchmark Site 06T_LONG2

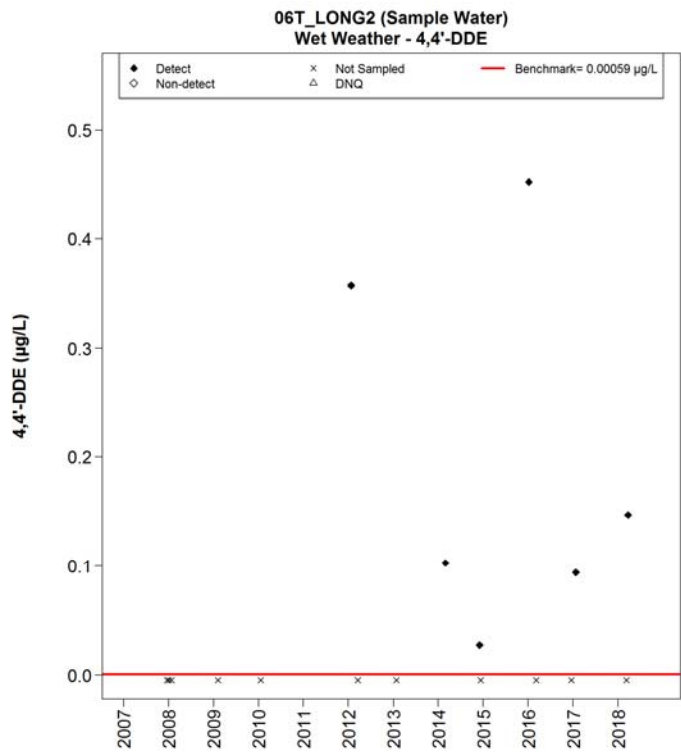


Figure 144. Wet Weather DDE Concentrations at Waiver Benchmark Site 06T_LONG2

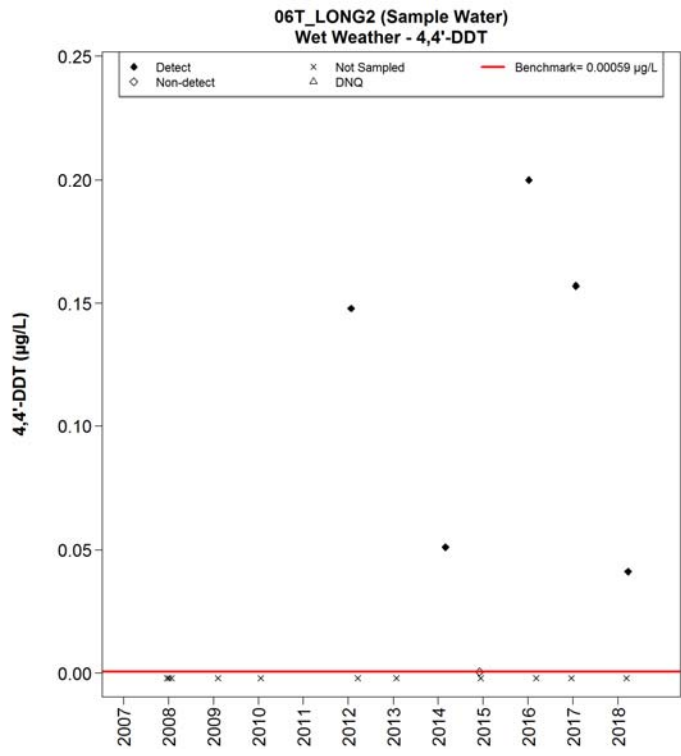


Figure 145. Wet Weather DDT Concentrations at Waiver Benchmark Site 06T_LONG2

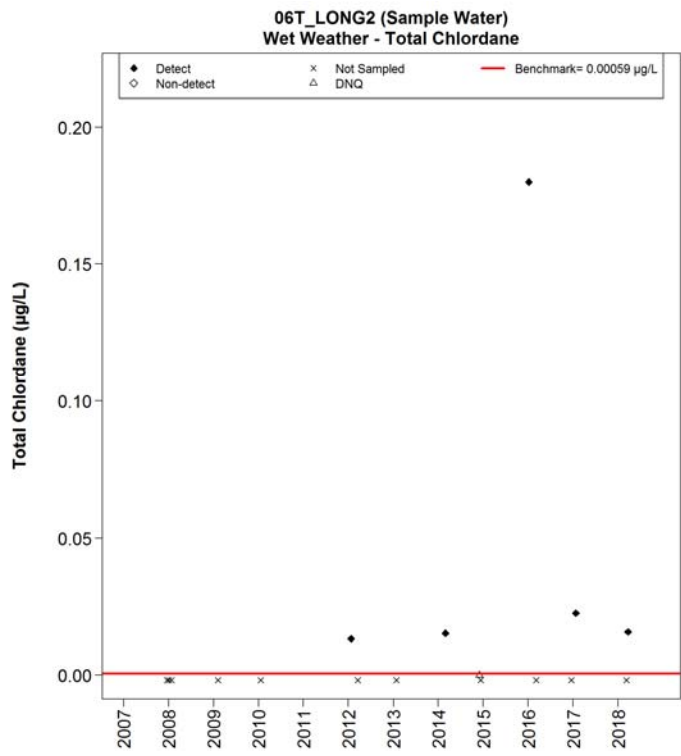


Figure 146. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 06T_LONG2

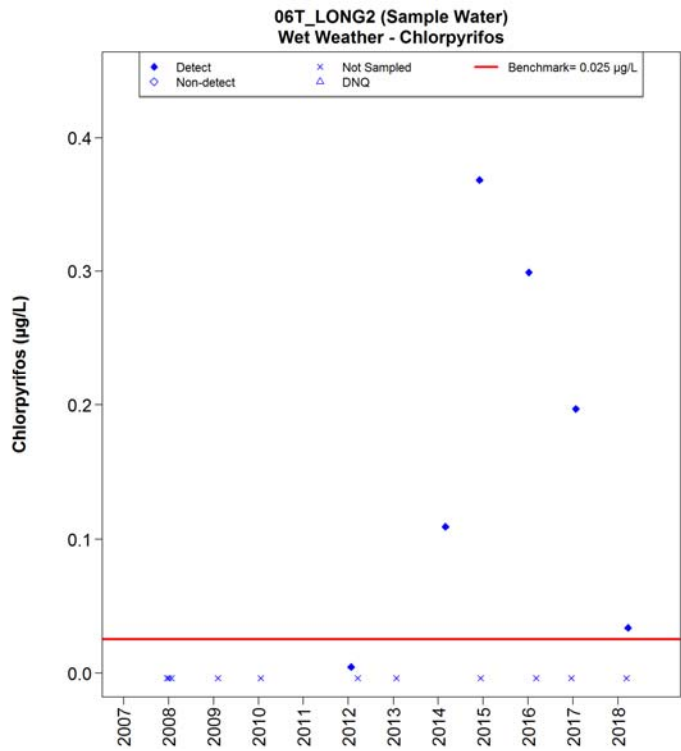


Figure 147. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 06T_LONG2

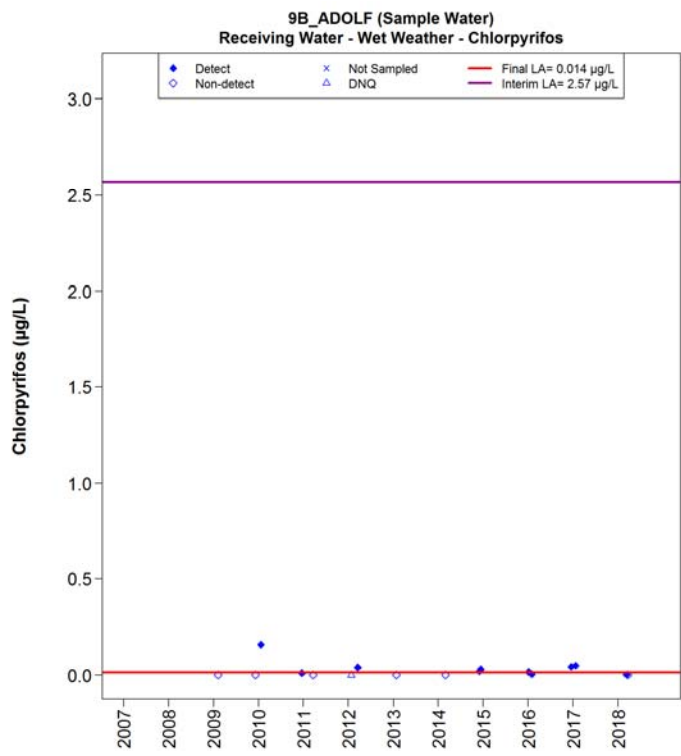


Figure 148. Dry Weather Chlorpyrifos Concentrations at TMDL LA Site 9B_ADOLF

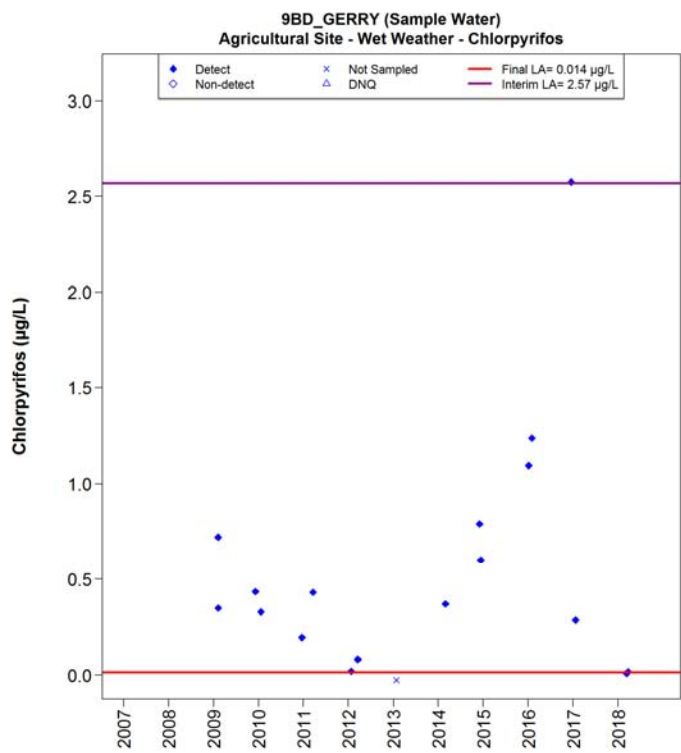


Figure 149. Dry Weather Chlorpyrifos Concentrations at TMDL LA Site 9BD_GERRY

Table 69. Summary of Benchmark Exceedance Evaluation for Arroyo Conejo Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
<i>E. coli</i>					●			<input checked="" type="checkbox"/>
OC Pesticides (Legacy)								
DDD					●			<input checked="" type="checkbox"/>
DDE					●			<input checked="" type="checkbox"/>
DDT					●			<input checked="" type="checkbox"/>
Chlordane					●			<input checked="" type="checkbox"/>
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					●	● ^{2,3}	● ^{2,4}	<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is 06T_LONG2.
2. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.
3. CCW Toxicity TMDL receiving water site is 9B_ADOLF.
4. CCW Toxicity TMDL agricultural land use site is 9BD_GERRY.

Table 70. BMPs for Additional Implementation in the Arroyo Conejo Responsibility Area

Exceedance Condition			Survey Question #	BMP	% of Total Applicable Surveyed Units		Additional Implementation Needed? [b]
Bacteria	Legacy Pesticides	Current Pesticides			06T_LONG2 Site Drainage [a]	Arroyo Conejo Responsibility Area [a]	
Wet	Wet	Wet					
	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	60%	30%	Yes
	x		Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	96%	80%	Yes
	x		1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	71%	79%	Yes
	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	72%	64%	Yes
	x	x	11	How much non-cropped area is bare soil	10%	63%	Yes
x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	79%	42%	Yes
x	x	x	13	Grassed waterways are used	0%	5%	Yes
x	x	x	14	Vegetated filter strips are used	0%	4%	Yes
		x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	98%	97%	Yes
		x	16	An integrated pest management plan is implemented	82%	94%	Yes
	x		18	How many acres produce irrigation runoff	9%	18%	Yes
x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	19%	11%	Yes

[a] Responsibility area does not include the beacon monitoring site drainage area.

[b] Only BMP implementation in the responsibility area is considered because the beacon site drainage is not included in the responsibility area

Table 71. Proposed Best Management Practices for the Arroyo Conejo Responsibility Area

Water Quality Issues			
Bacteria	Legacy Pesticides	Current Use Pesticides	
Wet Weather	Wet Weather	Wet Weather	BMPs
<i>Source Control BMPs</i>			
	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
	x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
		x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
		x	Implement an integrated pest management plan
<i>Structural Non-Treatment BMPs</i>			
x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	Use grassed waterways
x	x	x	Use vegetated filter strips
<i>Optional Treatment BMPs</i>			
x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Arroyo Simi Responsibility Area



Figure 150. Arroyo Simi Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Arroyo Simi responsibility area are illustrated in Figure 150. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 07_TIERRA is a CCW Salts TMDL Receiving Water Compliance Site
- 07_HITCH is a CCW OC Pesticides and PCBs, Nitrogen, and Toxicity TMDL Receiving Water Compliance Site
- 07D_HITCH_LEVEE_2 is a CCW Salts, Nitrogen, and Toxicity TMDL Ag Land Use Site

Table 72. Arroyo Simi Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Responsibility Area [a]	Drainage Area Monitoring Site 06T_LONG2 [a]
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	3,832	1,844
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [b]	423	34
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	2,939	1,391
Assessed Acres from Agricultural Parcel List belonging to Non Members	471	420
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	1,933	1,072
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.66	0.77
Estimated Irrigated Acres in Non Member Agricultural Parcels [c]	310	323
Total Estimated Irrigated Acres (Member plus Non Member)	2,243	1,396
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	86%	77%
Survey Response Information		
Sum Surveyed Irrigated Acres	1,554	642
Percent of Total Estimated Irrigated Acres that were Surveyed	69%	46%
Percent of VCAILG Member Irrigated Acres that were Surveyed	80%	60%

[a] Responsibility area does not include the beacon monitoring site drainage area.

[b] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[c] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 73. Arroyo Simi Responsibility Area Crop Types and General Production Practices

Crop or Practice	06T_LONG2 Site Drainage Only				06T_LONG2-Simi Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	-	-	-	-
Blueberries	15*	-	4%*	-	_*	27	_*	2%
Raspberries	-	103	-	16%	-	-	-	-
Row Crop	-	-	-	-	-	-	-	-
Orchard	356	495	91%	77%	910	1,365	92%	88%
Nursery	-	26	-	4%	54	160	5%	10%
Flower	-	-	-	-	-	-	-	-
Sod	-	-	-	-	-	-	-	-
Other	22	18	6%	3%	27	2	3%	0.1%
Overhead Cover in Production Areas								
Hoop House	74	103	19%	16%	16	1	2%	0.03%
No Cover	653	43	166%	7%	926	178	93%	11%
Greenhouse	-	-	-	-	-	4	-	0.2%
Shade	-	1	-	0.2%	-	7	-	0.4%
Other	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas								
Bare Soil	105	260	27%	41%	226	321	23%	21%
Cover Crop	54	56	14%	9%	60	35	6%	2%
Plastic	-	-	-	-	28	28	3%	2%
Weed Cloth	-	9	-	1%	1	12	0.1%	1%
Mulch	202	291	51%	45%	789	991	80%	64%
Gravel	-	-	-	-	-	4	0%	0.3%
Other	31	33	8%	5%	1	169	0.1%	11%
Irrigation Systems in Production Areas								
Drip Only	50	187	13%	26%	58	292	6%	19%
Microsprinkler/Drip	-	-	-	-	-	-	-	-
Microsprinkler	321	433	82%	67%	933	1,245	94%	80%
Overhead Sprinkler	-	2	-	-	109	7	11%	0.5%
Overhead/Drip	-	-	-	-	-	-	-	-
Furrow Flood	-	-	-	-	-	-	-	-
Hand Watering	-	2	-	0.2%	1	10	0.1%	0.6%
Other	22	-	6%	-	-	-	-	-

[a] Responsibility area does not include the beacon monitoring site drainage area.

Table 74. Arroyo Simi Responsibility Area Grower BMPs

Survey Question	Units	06T_LONG2 Site Drainage Only				06T_LONG2-Simi Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	282	308	74%	71%	909	1,107	92%	79%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	312	436	79%	74%	772	916	78%	60%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	177	272	46%	51%	133	267	14%	19%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	182	266	46%	45%	751	869	76%	57%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	132	197	34%	33%	153	271	15%	18%
Q5a: Are soil residual nitrate tests done?	Acres	225	356	57%	60%	768	873	77%	57%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	225	356	57%	60%	768	865	77%	56%
Q6: Are leaf/petiole tests conducted?	Acres	310	475	79%	94%	809	1,039	82%	69%
Q7a: Is nitrate measured in fertigation water?	Acres	135	268	34%	46%	753	860	76%	56%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	107	268	27%	46%	740	860	75%	56%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops	Acres	171	190	60%	53%	40	15	6%	2%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	161	165	41%	28%	773	1,036	78%	67%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	118	118	73%	72%	763	1,008	99%	97%
Q11: How much non-cropped area is bare soil?	Acres	37	41	9%	10%	287	498	29%	61%
Q12a: How many feet of ditches exist?	Feet	10,375	12254	N/A	N/A	164,567	172,542	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	7,800	9680	75%	79%	157,427	163,252	96%	95%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	6	83	0.6%	5%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	1	16	0.1%	1%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	-	-	2	27	0.2%	2%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	390	575	99%	98%	960	1,511	97%	98%
Q16: Is an IPM Plan being implemented?	Acres	295	481	75%	82%	961	1,475		96%
Q17a: How many acres are organically farmed?	Acres	171	159	44%	27%	27	22		1%
Q17b: How many acres are conventionally farmed?	Acres	222	462	56%	79%	965	1,514		99%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	42	55	11%	9%	45	62	5%	4%
Q19: Runoff from how many acres is treated or detained?	Acres	109	113	28%	19%	59	90	6%	6%

[a] Responsibility area does not include the beacon monitoring site drainage area.

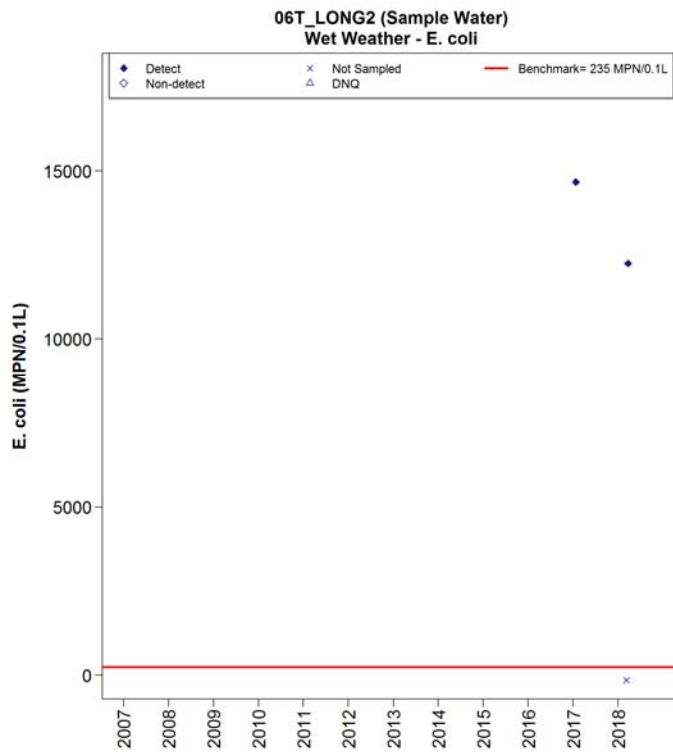


Figure 151. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 06T_LONG2

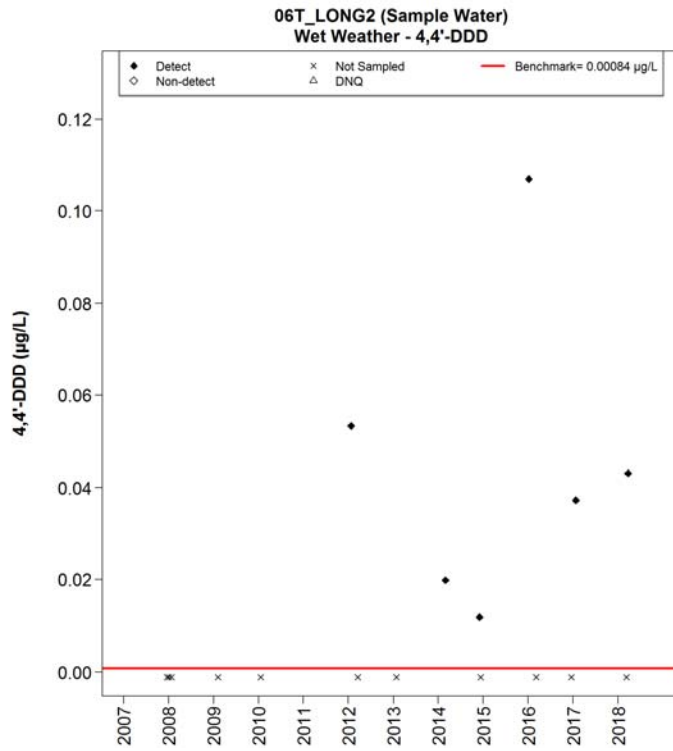


Figure 152. Wet Weather DDD Concentrations at Waiver Benchmark Site 06T_LONG2

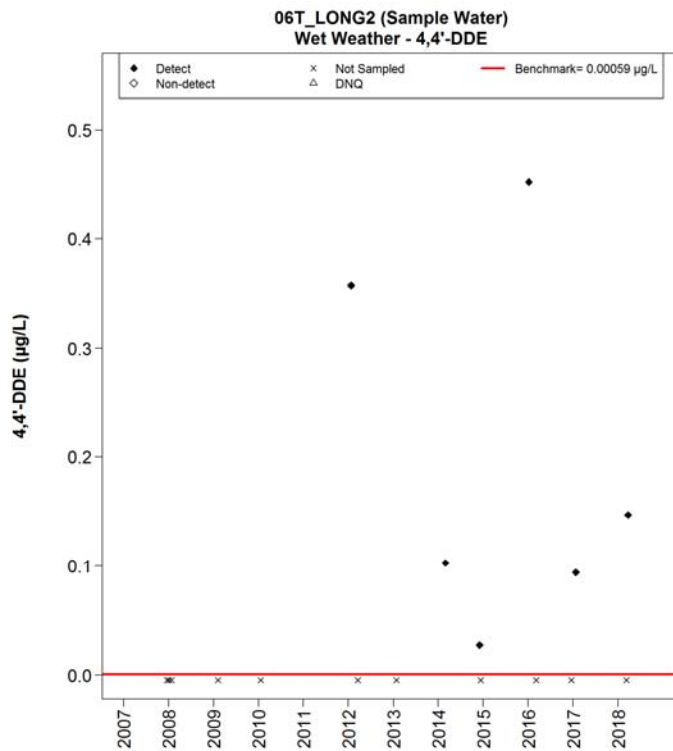


Figure 153. Wet Weather DDE Concentrations at Waiver Benchmark Site 06T_LONG2

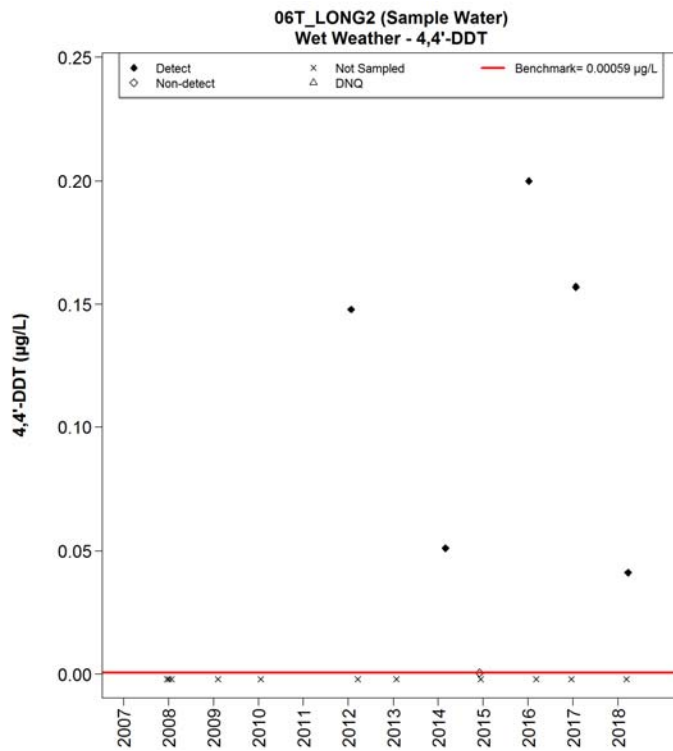


Figure 154. Wet Weather DDT Concentrations at Waiver Benchmark Site 06T_LONG2

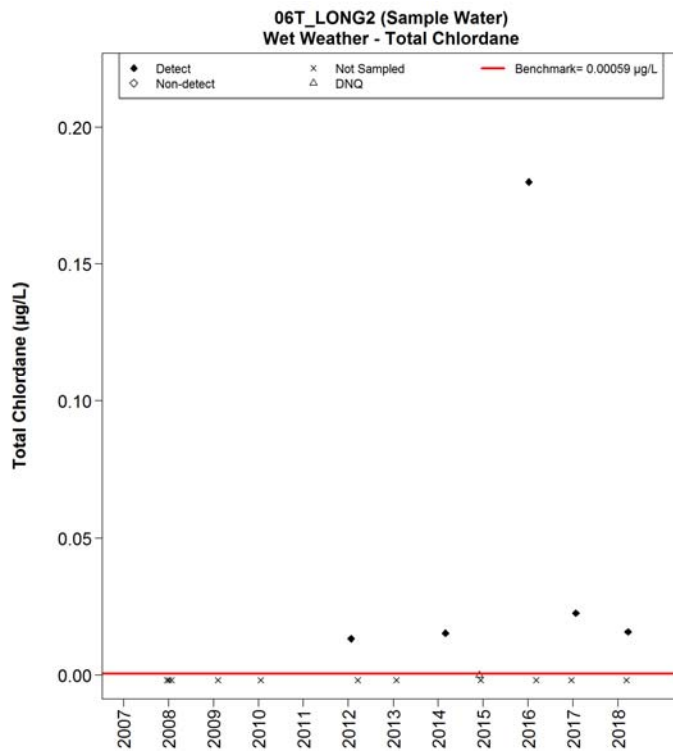


Figure 155. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 06T_LONG2

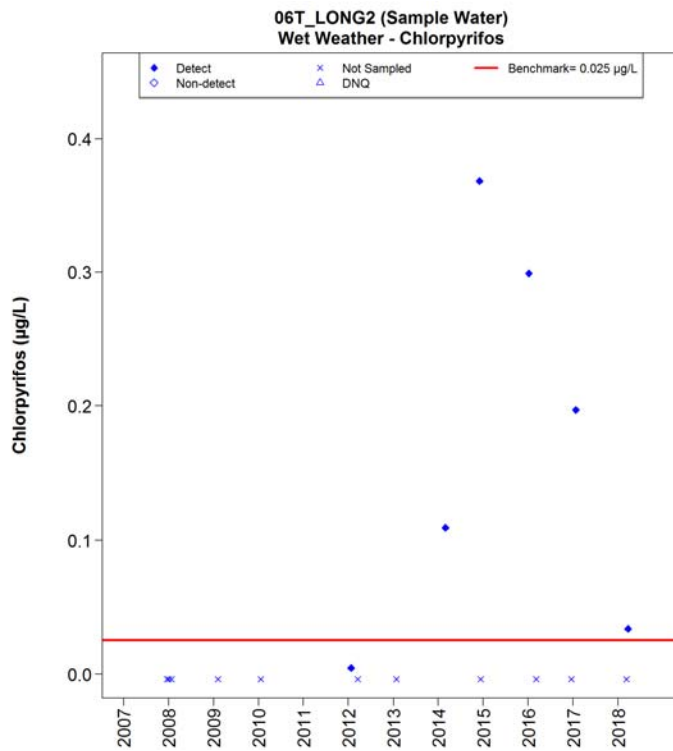


Figure 156. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 06T_LONG2

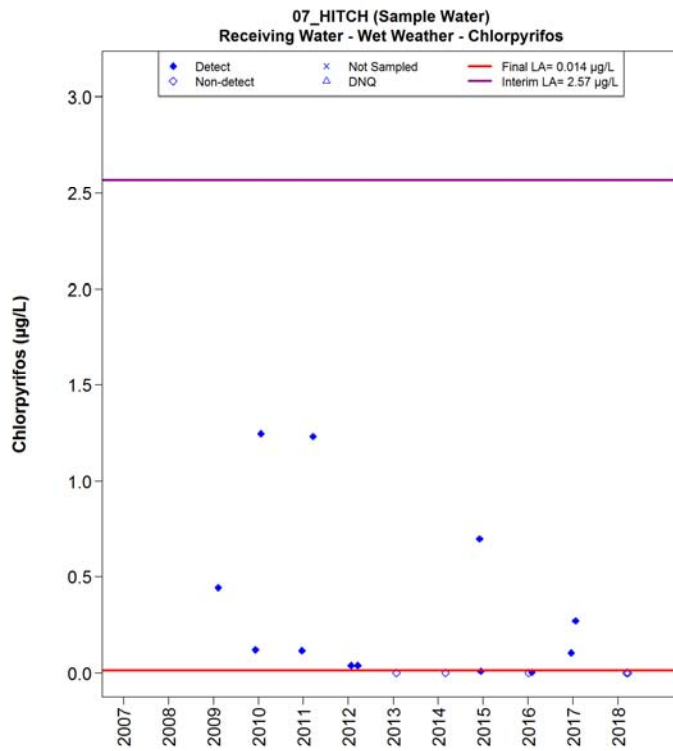


Figure 157. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 07_HITCH

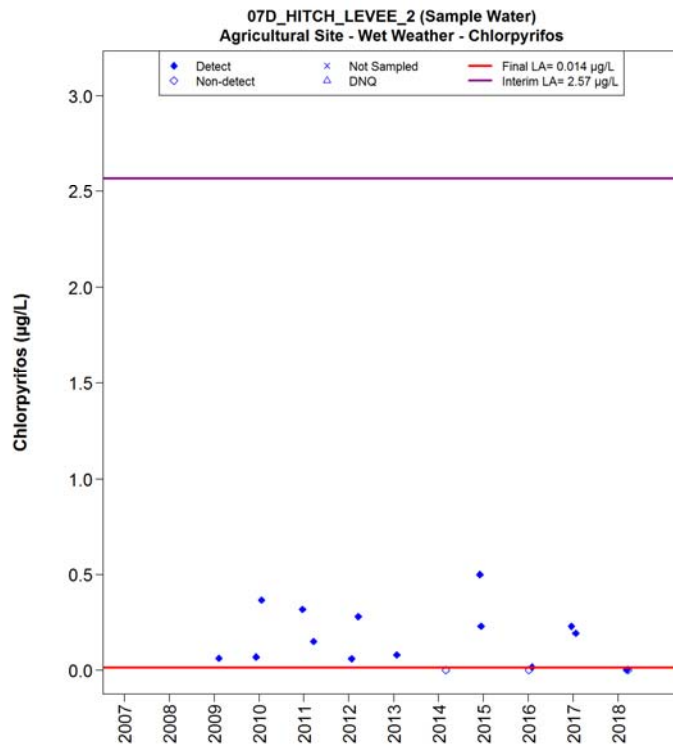


Figure 158. Wet Weather Chlorpyrifos Concentrations at TMDL Ag Land Use Site 07D_HITCH_LEVEE_2

Table 75. Summary of Benchmark Exceedance Evaluation for Arroyo Simi Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
Bacteria								
<i>E. coli</i>					•			<input checked="" type="checkbox"/>
Nutrients								
Nitrate-N + Nitrite-N		• ²	3	4				
OC Pesticides (Legacy)								
DDD					•			<input checked="" type="checkbox"/>
DDE					•			<input checked="" type="checkbox"/>
DDT					•			<input checked="" type="checkbox"/>
Chlordane					•			<input checked="" type="checkbox"/>
OP and Pyrethroid Pesticides (Current)								
Chlorpyrifos					•	• ^{2,5}	• ^{3,5}	<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is 06T_LONG2.
2. CCW Nitrogen TMDL and Toxicity TMDL receiving water site is 07_HITCH.
3. Agricultural land use site for the Nitrogen and Toxicity TMDLs is 07D_HITCH_LEVEE_2.
4. Agricultural land use data is below the LA so additional management practices in agriculture aren't necessary at this time.
5. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.

Table 76. BMPs for Additional Implementation in the Arroyo Simi Responsibility Area

Exceedance Condition				Survey Question #	BMP	% of Total Applicable Surveyed Units		Additional Implementation Needed? [b]
Bacteria	Nutrients	Legacy Pesticides	Current Pesticides			06T_LONG2 Site Drainage [a]	Arroyo Simi Responsibility Area [a]	
Wet	Dry	Wet	Wet					
	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	70%	80%	Yes
	x			Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	93%	99%	No
	x			1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	71%	79%	Yes
	x			2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	74%	60%	Yes
	x			3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	51%	19%	Yes
	x			4	Certified nutrient management plan has been prepared for the property	33%	18%	Yes
	x			5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	60%	56%	Yes
	x			6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	94%	69%	Yes
	x			7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	46%	56%	Yes
	x			8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	53%	2%	Yes
	x	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	72%	97%	Yes
		x	x	11	How much non-cropped area is bare soil	10%	61%	Yes
x	x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	79%	95%	Yes
x	x	x	x	13	Grassed waterways are used	0%	5%	Yes
x	x	x	x	14	Vegetated filter strips are used	0%	2%	Yes
			x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	98%	98%	No
			x	16	An integrated pest management plan is implemented	82%	96%	Yes
	x			18	How many acres produce irrigation runoff	9%	4%	Yes
x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	19%	6%	Yes

[a] Responsibility area does not include the beacon monitoring site drainage area.

[b] Only BMP implementation in the responsibility area is considered because the beacon site drainage is not included in the responsibility area.

Table 77. Proposed Best Management Practices for the Arroyo Simi Responsibility Area

Water Quality Issues				BMPs
Bacteria	Nutrients	Legacy Pesticides	Current Use Pesticides	
Wet Weather	Dry Weather	Wet Weather	Wet Weather	
				<i>Source Control BMPs</i>
	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
	x			Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
	x			Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
	x			Prepare a certified nutrient management plan for the property
	x			Conduct soil residual nitrate tests and use results to adjust fertilizer application
	x			Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
	x			Analyze irrigation water nitrate and use results to adjust fertilizer application
	x			Adjust fertilizer application to account for nutrients provided by cover crops
	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
		x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
			x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
			x	Implement an integrated pest management plan
	x			Avoid/prevent irrigation runoff

Water Quality Issues				
Bacteria	Nutrients	Legacy Pesticides	Current Use Pesticides	
Wet Weather	Dry Weather	Wet Weather	Wet Weather	BMPs
<i>Structural Non-Treatment BMPs</i>				
X	X	X	X	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
X	X	X	X	Use grassed waterways
X	X	X	X	Use vegetated filter strips
<i>Optional Treatment BMPs</i>				
X	X	X	X	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Las Posas Responsibility Area

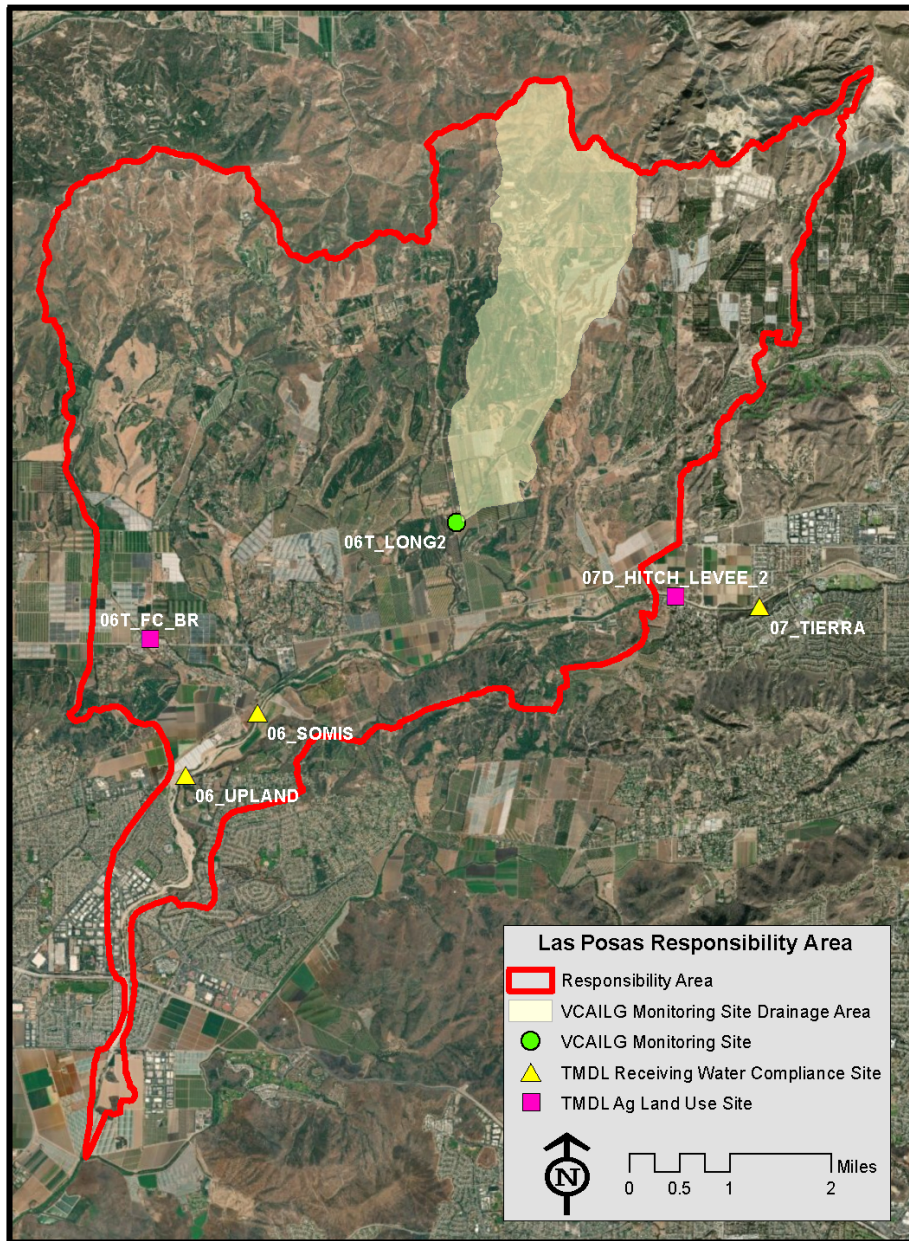


Figure 159. Las Posas Responsibility Area Map

The monitoring sites used to evaluate attainment of Conditional Waiver benchmarks and/or TMDL LAs for the Las Posas responsibility area are illustrated in Figure 159. The monitoring sites that serve to evaluate TMDL LA benchmark attainment for this responsibility area are as follows:

- 07_TIERRA is a CCW Salts TMDL Receiving Water Compliance Site
- 06_SOMIS and 06_UPLAND are CCW OC Pesticides and PCBs, Nitrogen, and Toxicity TMDL Receiving Water Compliance Sites
- 07D_HITCH_LEVEE_2 is a CCW Salts TMDL Ag Land Use Site
- 06T_FC_BR is a CCW Nitrogen and Toxicity TMDL Ag Land Use Site

Table 78. Las Posas Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site 06T_LONG2
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	16,370	1,844
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	298	34
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	13,649	1,391
Assessed Acres from Agricultural Parcel List belonging to Non Members	2,423	420
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	9,745	1,072
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.71	0.77
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	1,730	323
Total Estimated Irrigated Acres (Member plus Non Member)	11,474	1,396
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	85%	77%
Survey Response Information		
Sum Surveyed Irrigated Acres	7,706	642
Percent of Total Estimated Irrigated Acres that were Surveyed	67%	46%
Percent of VCAILG Member Irrigated Acres that were Surveyed	79%	60%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 79. Las Posas Responsibility Area Crop Types and General Production Practices

Crop or Practice	06T_LONG2 Site Drainage Only				06T_LONG2-Las Posas Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	65	60	1%	1%
Blueberries	15*	-	4%*	-	398*	390	8%*	5%
Raspberries	-	103	-	16%	685	-	-	9%
Row Crop	-	-	-	-	541	497	10%	6%
Orchard	356	495	91%	77%	3,667	5,629	70%	73%
Nursery	-	26	-	4%	156	377	3%	5%
Flower	-	-	-	-	-	4	-	0.05%
Sod	-	-	-	-	-	5	-	0.1%
Other	22	18	6%	3%	421	59	8%	1%
Overhead Cover in Production Areas								
Hoop House	74	103	19%	16%	195	1,050	4%	14%
No Cover	653	43	166%	7%	4,627	985	88%	13%
Greenhouse	-	-	-	-	1	11	-	0.1%
Shade	-	1	-	0.32%	1	27	-	0.4%
Other	-	-	-	-	43	-	0.8%	-
Surface Treatments in Production Areas								
Bare Soil	105	260	27%	41%	2,346	3,533	45%	46%
Cover Crop	54	56	14%	9%	280	431	5%	6%
Plastic	-	-	-	-	213	251	4%	3%
Weed Cloth	-	9	-	1%	18	46	0.3%	1%
Mulch	202	291	51%	45%	2,500	2,951	48%	38%
Gravel	-	-	-	-	20	36	0.4%	0.5%
Other	31	33	8%	5%	134	578	3%	8%
Irrigation Systems in Production Areas								
Drip Only	50	187	13%	29%	1,635	2,814	31%	37%
Microsprinkler/Drip	-	-	-	-	-	-	-	-
Microsprinkler	321	433	82%	67%	3,373	4,403	64%	57%
Overhead Sprinkler	-	2	-	-	218	316	4%	4%
Overhead/Drip	-	-	-	-	230	62	4%	1%
Furrow Flood	-	-	-	-	26	10	0.5%	0.1%
Hand Watering	-	2	-	-	33	54	0.6%	0.7%
Other	22	-	6%	0.2%	25	-	0.5%	-

Table 80. Las Posas Responsibility Area Gower BMPs

Survey Question	Units	06T_LONG2 Site Drainage Only				06T_LONG2-Las Posas Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	282	308	74%	71%	3,751	5,429	73%	79%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	312	436	79%	74%	3,403	5,511	65%	77%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	177	272	46%	51%	2,525	3,665	51%	55%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	182	266	46%	45%	2,550	4,152	49%	58%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	132	197	34%	33%	1,578	3,148	30%	44%
Q5a: Are soil residual nitrate tests done?	Acres	225	356	57%	60%	3,112	4,564	59%	64%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	225	356	57%	60%	3,092	4,383	59%	61%
Q6: Are leaf/petiole tests conducted?	Acres	310	475	79%	94%	4,131	5,119	84%	85%
Q7a: Is nitrate measured in fertigation water?	Acres	135	268	34%	46%	2,574	4,102	49%	57%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	107	268	27%	46%	2,541	3,869	48%	54%
Q8: Is fertilizer adjusted based on nutrients from cover crops	Acres	171	190	60%	53%	2,188	2,367	76%	62%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	161	165	41%	28%	2,439	3,306	46%	46%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	118	118	73%	72%	2,320	3,347	95%	101%
Q11: How much non-cropped area is bare soil?	Acres	37	41	9%	10%	738	1,474	14%	44%
Q12a: How many feet of ditches exist?	Feet	10,375	12,254	N/A	N/A	820,272	857,158	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	7,800	9,680	75%	79%	127,414	155,269	16%	18%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	1,103	1,167	21%	16%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	590	552	11%	8%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	-	-	335	401	6%	6%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	390	575	99%	98%	5,034	6,785	96%	95%
Q16: Is an IPM Plan being implemented?	Acres	295	481	75%	82%	3,889	5,652	74%	79%
Q17a: How many acres are organically farmed?	Acres	171	159	44%	27%	1,123	1,742	21%	24%
Q17b: How many acres are conventionally farmed?	Acres	222	462	56%	79%	4,125	5,679	79%	80%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	42	55	11%	9%	887	827	17%	12%
Q19: Runoff from how many acres is treated or detained?	Acres	109	113	28%	19%	951	1329	18%	19%

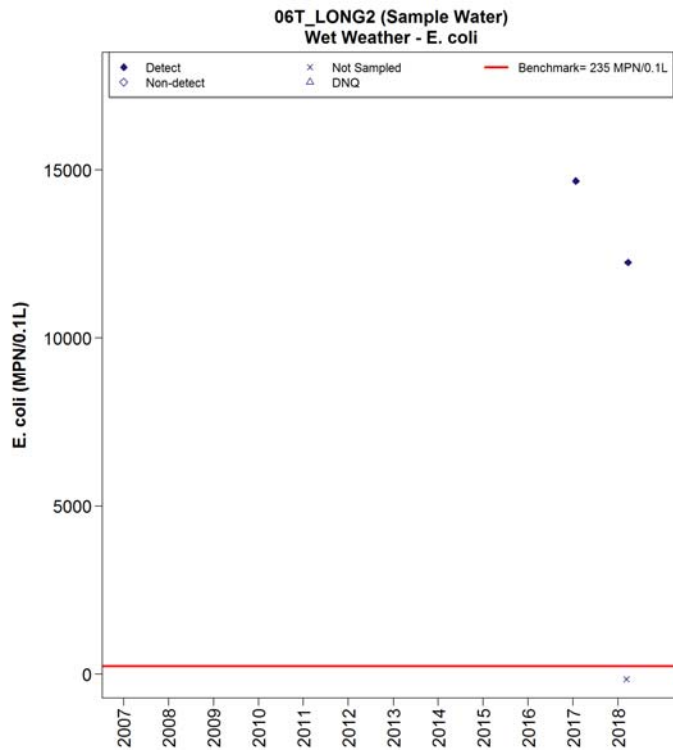


Figure 160. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 06T_LONG2

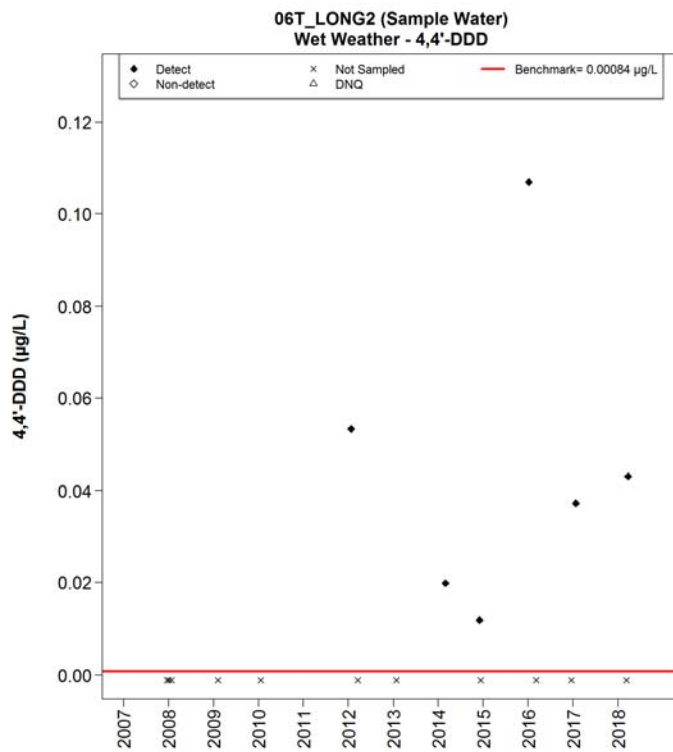


Figure 161. Wet Weather DDD Concentrations at Waiver Benchmark Site 06T_LONG2

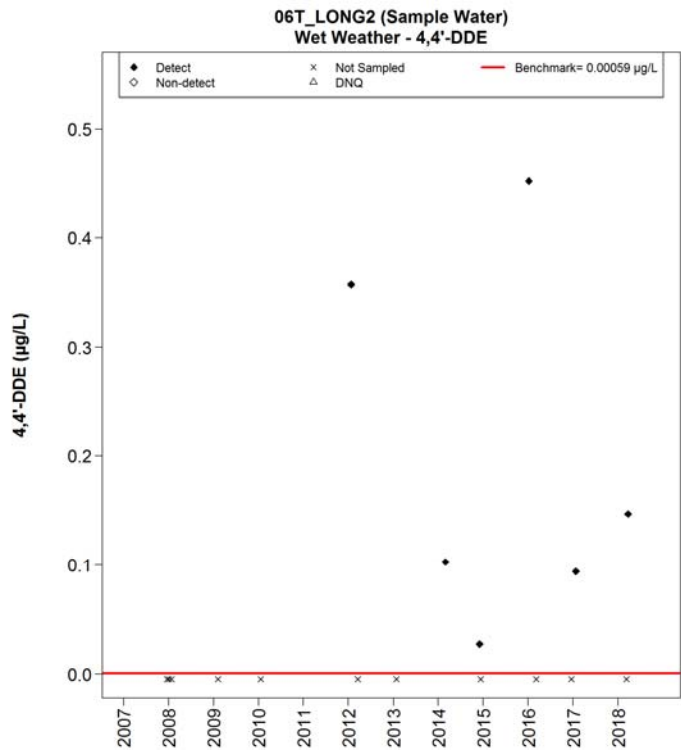


Figure 162. Wet Weather DDE Concentrations at Waiver Benchmark Site 06T_LONG2

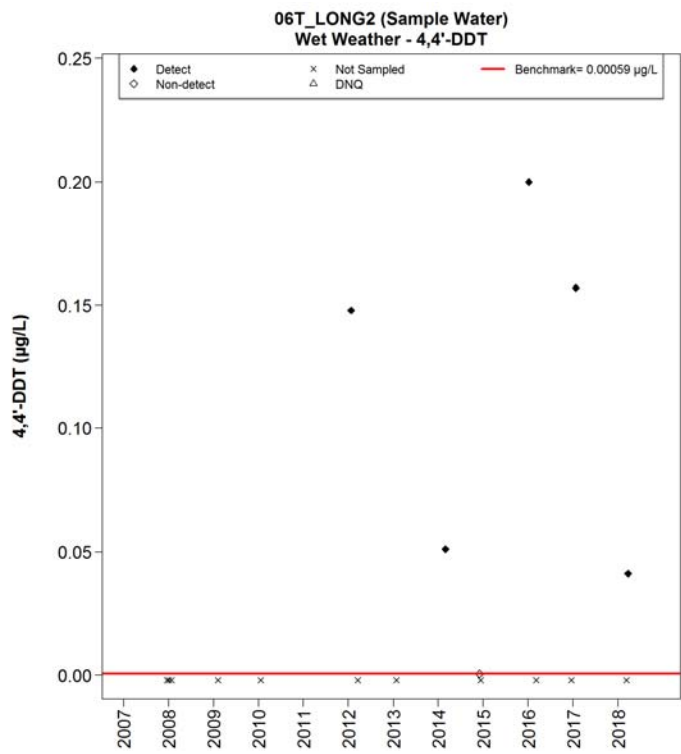


Figure 163. Wet Weather DDT Concentrations at Waiver Benchmark Site 06T_LONG2

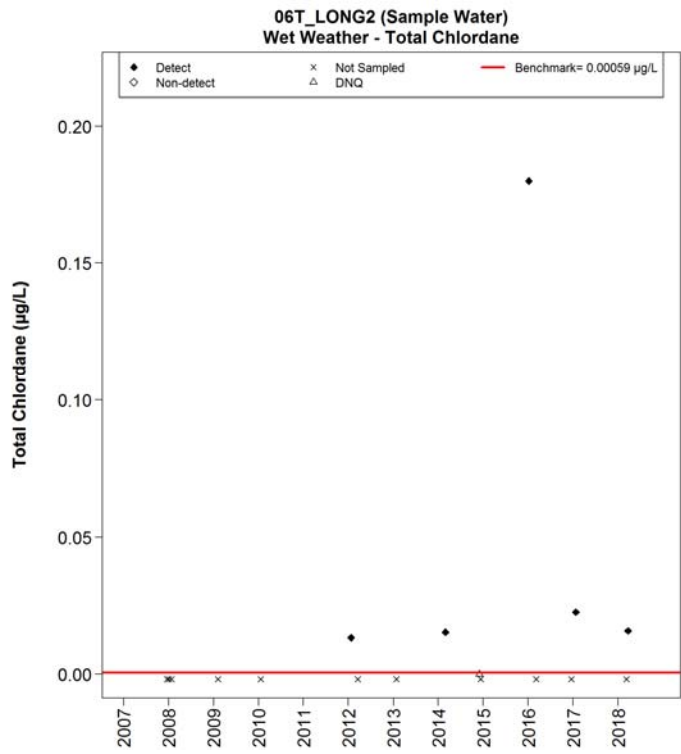


Figure 164. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 06T_LONG2

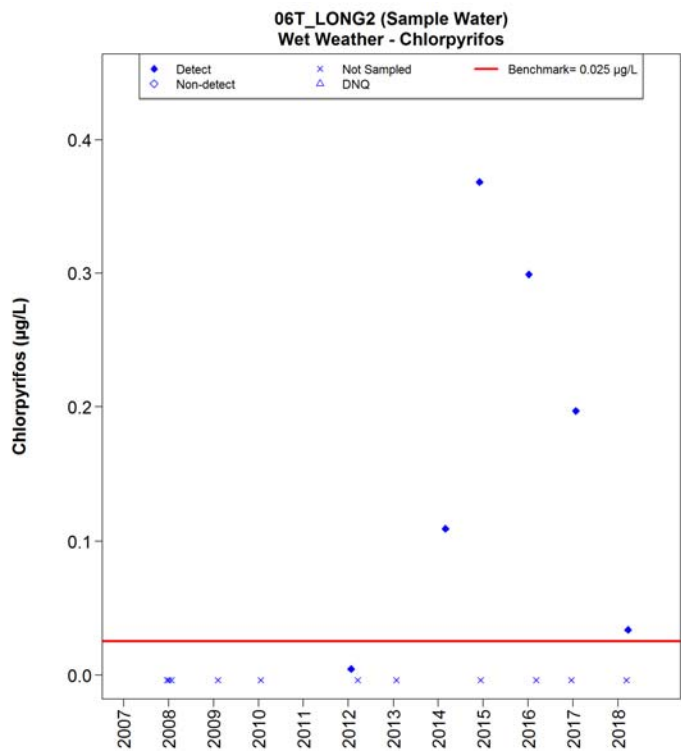


Figure 165. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 06T_LONG2

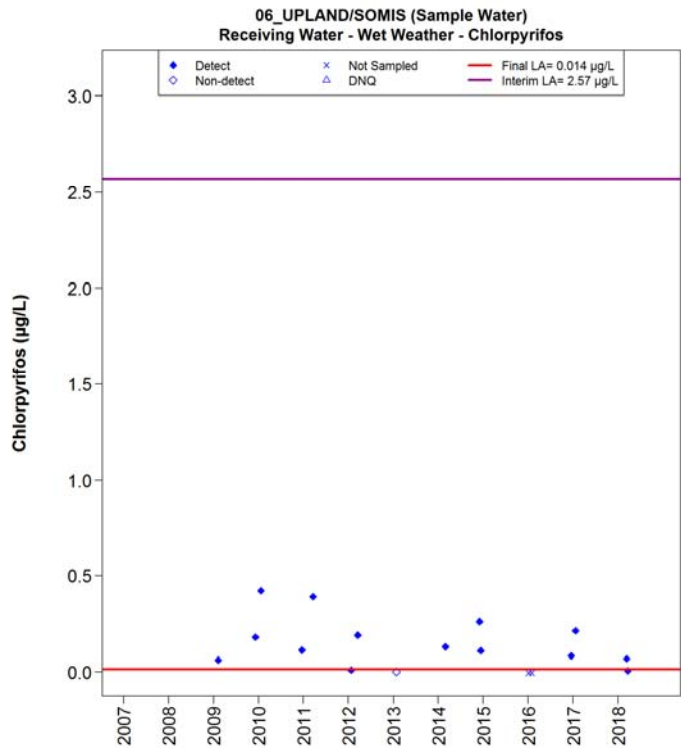


Figure 166. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 06_UPLAND

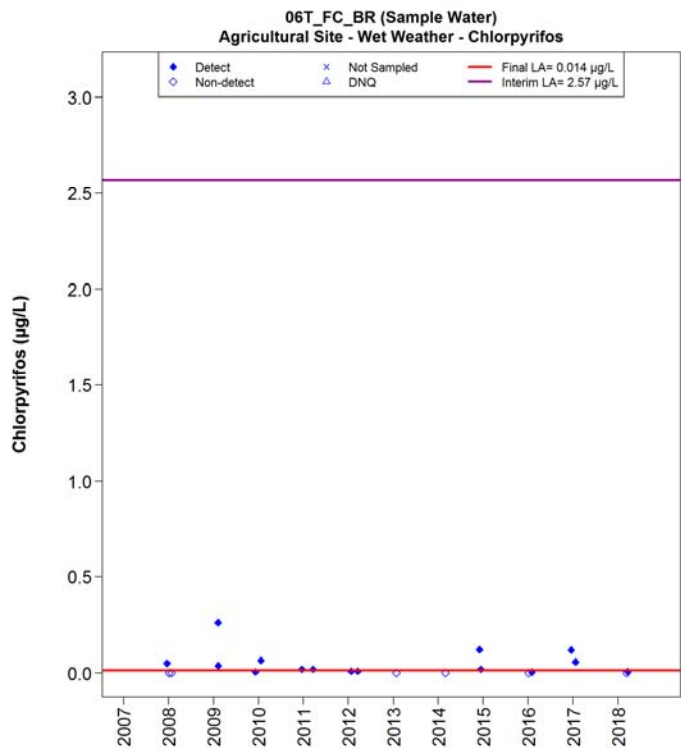


Figure 167. Wet Weather Chlorpyrifos Concentrations at TMDL LA Site 06T_FC_BR

Table 81. Summary of Benchmark Exceedance Evaluation for Las Posas Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather				Wet Weather			
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Ag Land Use Site Exceedances	Review Implementation and Plan BMPs
<i>Bacteria</i>								
<i>E. coli</i>					●			<input checked="" type="checkbox"/>
<i>OC Pesticides (Legacy)</i>								
DDD					●			<input checked="" type="checkbox"/>
DDE					●			<input checked="" type="checkbox"/>
DDT					●			<input checked="" type="checkbox"/>
Chlordane					●			<input checked="" type="checkbox"/>
<i>OP and Pyrethroid Pesticides (Current)</i>								
Chlorpyrifos					●	● ^{2,3}	● ^{2,4}	<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is 06T_LONG2.
2. Does not exceed interim load allocation but exceeds final load allocation that will need to be achieved by the timeline provided in the Waiver.
3. CCW Toxicity TMDL receiving water site is 06_UPLAND.
4. Agricultural land use site for the Toxicity TMDL is 06T_FC_BR.

Table 82. BMPs for Additional Implementation in the Las Posas Responsibility Area

Exceedance Condition			Survey Question #	BMP	% of Total Applicable Surveyed Units		Additional Implementation Needed?
Bacteria	Legacy Pesticides	Current Pesticides			06T_LONG2 Site Drainage Only	Las Posas Responsibility Area	
Wet	Wet	Wet					
	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	60%	57%	Yes
	x		Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	96%	94%	Yes
	x		1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	71%	79%	Yes
	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	72%	101%	No
	x	x	11	How much non-cropped area is bare soil	10%	44%	Yes
x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	79%	18%	Yes
x	x	x	13	Grassed waterways are used	0%	16%	Yes
x	x	x	14	Vegetated filter strips are used	0%	6%	Yes
		x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	98%	95%	Yes
		x	16	An integrated pest management plan is implemented	82%	79%	Yes
	x		18	How many acres produce irrigation runoff	9%	12%	Yes
x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	19%	19%	Yes

Table 83. Proposed Best Management Practices for the Las Posas Responsibility Area

Water Quality Issues			
Bacteria	Legacy Pesticides	Current Use Pesticides	BMPs
Wet Weather	Wet Weather	Wet Weather	
<i>Source Control BMPs</i>			
	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
	x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
		x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
		x	Implement an integrated pest management plan
			Avoid/prevent irrigation runoff
<i>Structural Non-Treatment BMPs</i>			
x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	Use grassed waterways
x	x	x	Use vegetated filter strips
<i>Optional Structural BMPs</i>			
x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Tapo Canyon Responsibility Area

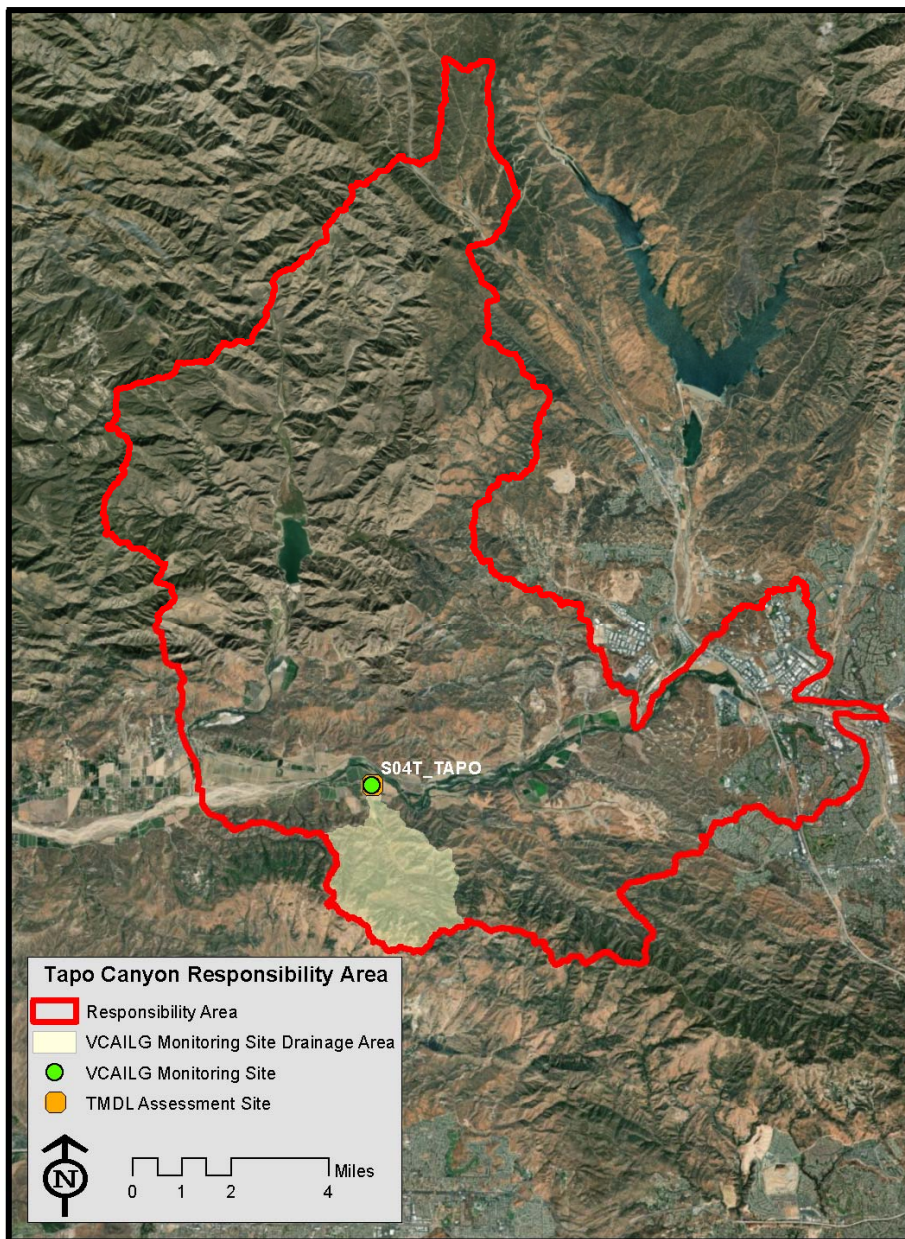


Figure 168. Tapo Canyon Responsibility Area Map

The Tapo Canyon responsibility area is illustrated in Figure 168. The VCAILG monitoring site S04T_TAPO also serves as a TMDL assessment site for the SCR Nitrogen TMDL and Upper SCR Chloride TMDL.

Table 84. Tapo Canyon Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site S04T_TAPO
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	14,006	640
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	2,273	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	11,543	640
Assessed Acres from Agricultural Parcel List belonging to Non Members	190	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	3,283	53
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.28	0.08
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	54	0
Total Estimated Irrigated Acres (Member plus Non Member)	3,337	53
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	98%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	3,275	53
Percent of Total Estimated Irrigated Acres that were Surveyed	98%	100%
Percent of VCAILG Member Irrigated Acres that were Surveyed	100%	100%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 85. Tapo Canyon Responsibility Area Crop Types and General Production Practices

Crop or Practice	S04T_TAPO Site Drainage Only				S04T_TAPO Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017 [a]	2018	2017 [a]	2018
Crop Type								
Strawberries	-	-	-	-	52		2%	
Blueberries	_*	-	_*	-	-		-	
Raspberries	-	-	-	-	24		1%	
Row Crop	-	26	-	48%	1852		57%	
Orchard	19	27	83%	52%	753		23%	
Nursery	-	-	-	-	81		2%	
Flower	4	-	17%	-	-		-	
Sod	-	-	-	-	119		4%	
Other	-	-	-	-	394		12%	
Overhead Cover in Production Areas								
Hoop House	-	-	-	-	107		3%	
No Cover	-	26	-	48%	2267		69%	
Greenhouse	-	-	-	-	27		1%	
Shade	-	-	-	-	2		0.1%	
Other	-	-	-	-	-		-	
Surface Treatments in Production Areas								
Bare Soil	-	53	-	100%	2253		69%	
Cover Crop	-	-	-	-	721		22%	
Plastic	-	-	-	-	52		2%	
Weed Cloth	-	-	-	-	90		3%	
Mulch	19	-	83%	-	425		13%	
Gravel	-	-	-	-	-		-	
Other	4	-	17%	-	-		-	
Irrigation Systems in Production Areas								
Drip Only	7	27	30%	52%	320		10%	
Microsprinkler/Drip	-	-	-	-	52		2%	
Microsprinkler	-	-	-	-	721		22%	
Overhead Sprinkler	-	-	-	-	530		16%	
Overhead/Drip	-	26	-	48%	1650		50%	
Furrow Flood	-	-	-	-	-		-	
Hand Watering	-	-	-	-	2		0.1%	
Other	16	-	70%	-	-		-	

* Value for 2017 is for Raspberries & Blueberries combined.

[a] No surveys were submitted for parcels in the S04T_TAPO drainage area.

Table 86. Tapo Canyon Responsibility Area Grower BMPs

Survey Question	Units	SO4T_TAPO Site Drainage Only				SO4T_TAPO Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017[a]	2018	2017[a]	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	23	27	100%	100%		1,441		100%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	17	53	74%	194%		2,545		163%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	-	-	-	%		191		14%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	-	27	-	100%		1,041		67%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	-	-	-	-		183		12%
Q5a: Are soil residual nitrate tests done?	Acres	-	27	-	100%		1,300		83%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	-	27	-	100%		1,300		83%
Q6: Are leaf/petiole tests conducted?	Acres	-	27	-	100%		1,300		89%
Q7a: Is nitrate measured in fertigation water?	Acres	-	27	-	100%		1,023		65%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	-	27	-	100%		1,023		65%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	-	27	-	100%		922		81%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	17	53	74%	194%		2,202		141%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	17	53	100%	100%		1,985		90%
Q11: How much non-cropped area is bare soil?	Acres	125	-	534%	-		2,458		30%
Q12a: How many feet of ditches exist?	Feet	N/A	1,629	N/A	N/A		112,547		N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	N/A	1,629	N/A	100%		98,952		88%
Q13a: Are grassed waterways present?	Acres	-	-	-	-		118		8%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-		381		24%
Q14: How many acres are treated by vegetated filter strips?	Acres	17	-	74%	-		75		5%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	22	27	96%	100%		1,563		100%
Q16: Is an IPM Plan being implemented?	Acres	22	27	96%	100%		1,441		92%
Q17a: How many acres are organically farmed?	Acres	6	-	26%	-		411		26%
Q17b: How many acres are conventionally farmed?	Acres	17	27	74%	100%		2,076		133%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	22	53	96%	194%		2,013		129%
Q19: Runoff from how many acres is treated or detained?	Acres	23	53	100%	194%		1,348		86%

[a] No surveys were submitted for parcels in the S04T_TAPO drainage area.

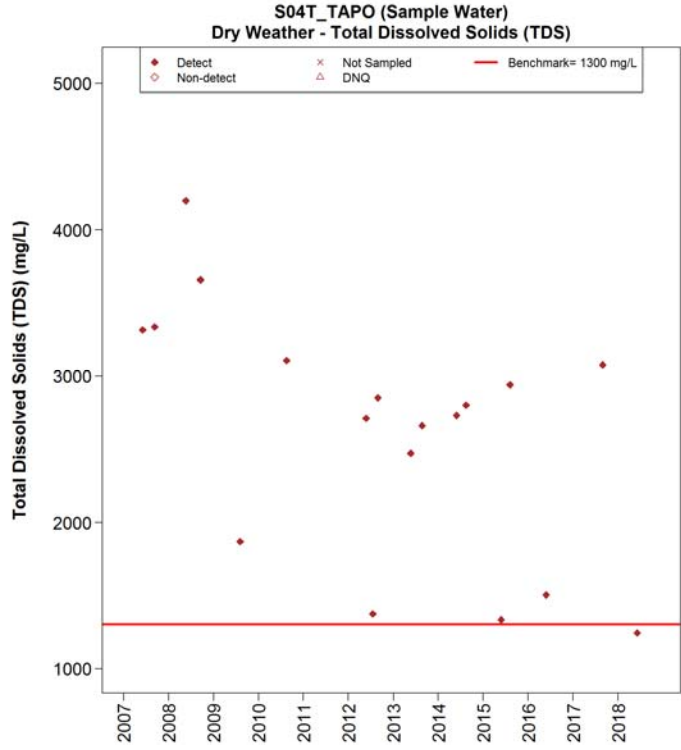


Figure 169. Dry Weather Total Dissolved Solids Concentrations at Waiver Benchmark Site S04T_TAPO

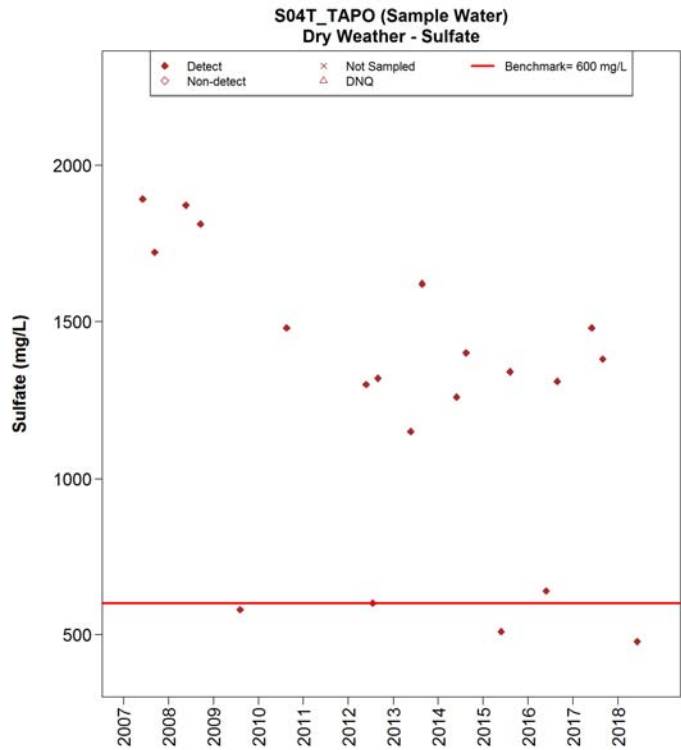


Figure 170. Dry Weather Sulfate Concentrations at Waiver Benchmark Site S04T_TAPO

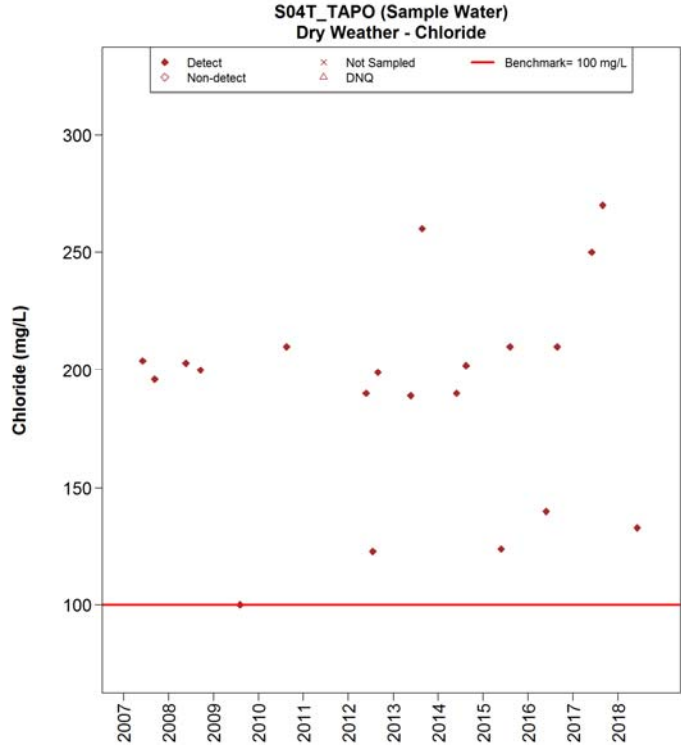


Figure 171. Dry Weather Chloride Concentrations at Waiver Benchmark Site S04T_TAPO

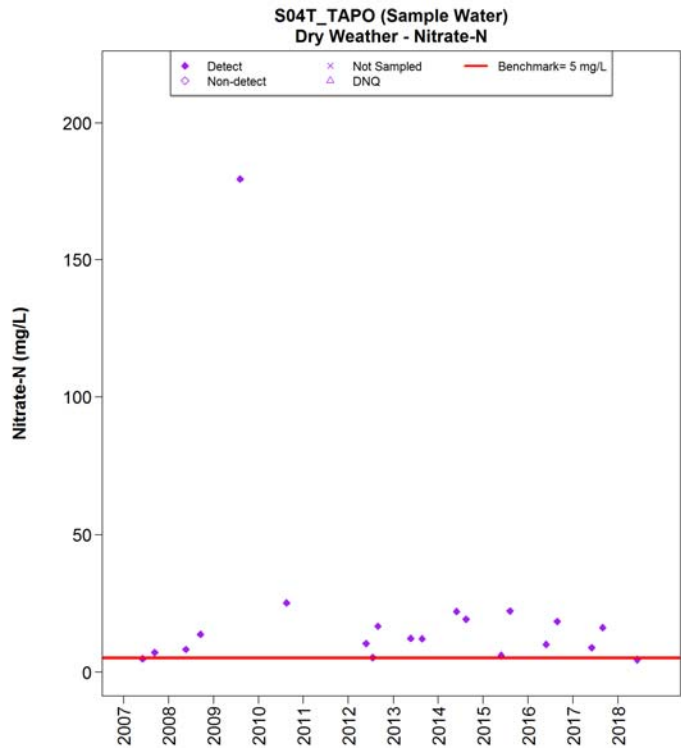


Figure 172. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site S04T_TAPO

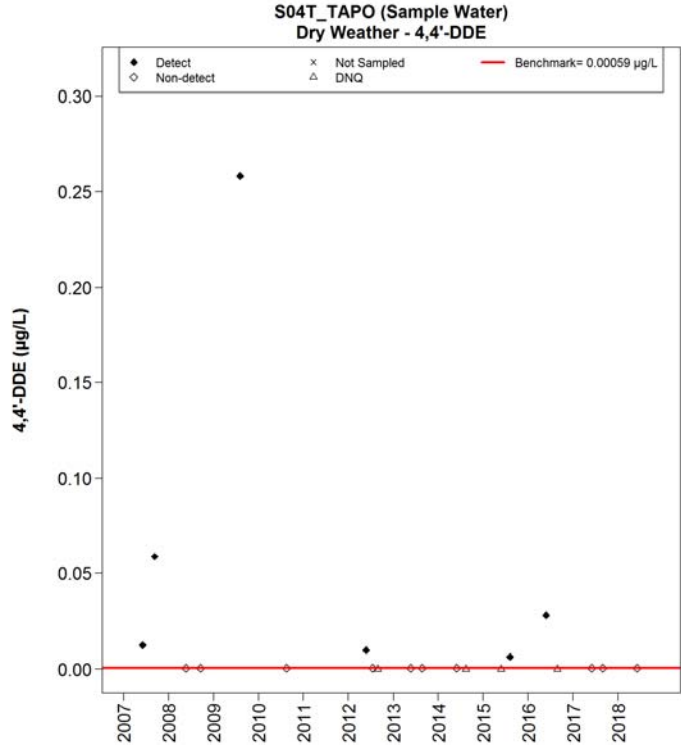


Figure 173. Dry Weather DDE Concentrations at Waiver Benchmark Site S04T_TAPO

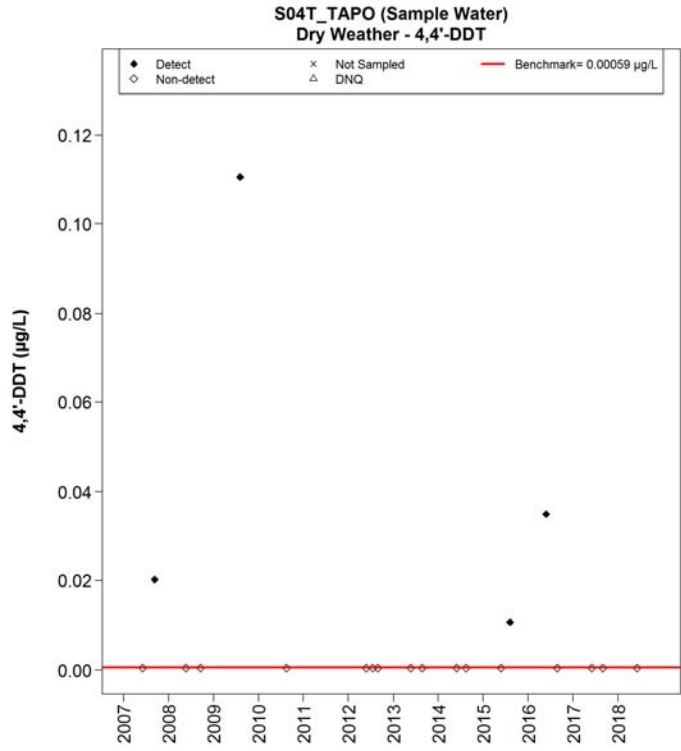


Figure 174. Dry Weather DDT Concentrations at Waiver Benchmark Site S04T_TAPO

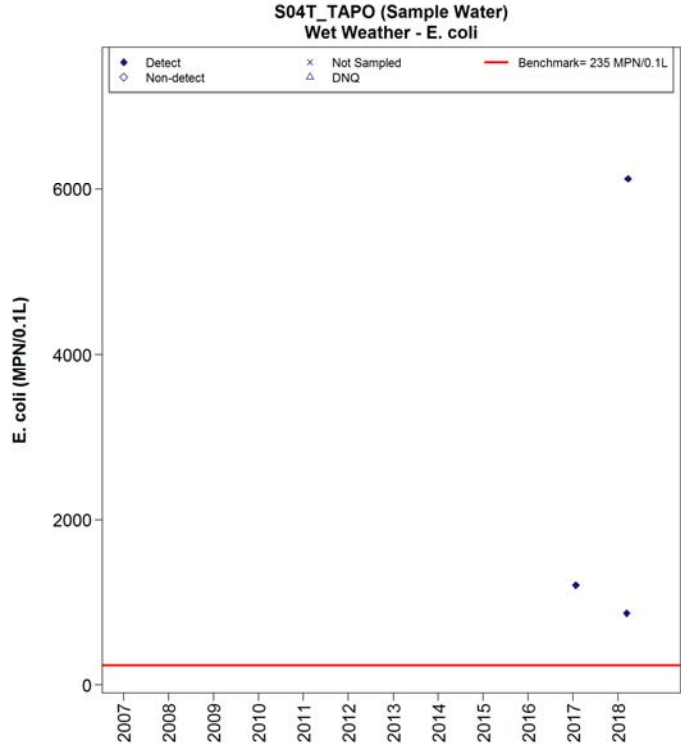


Figure 175. Wet Weather E. coli Concentrations at Waiver Benchmark Site S04T_TAPO

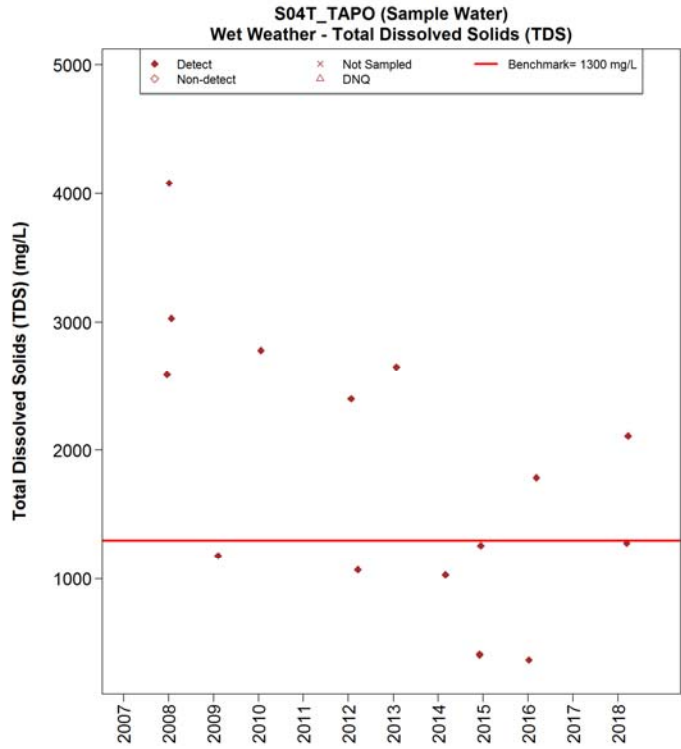


Figure 176. Wet Weather Total Dissolved Solids Concentrations at Waiver Benchmark Site S04T_TAPO

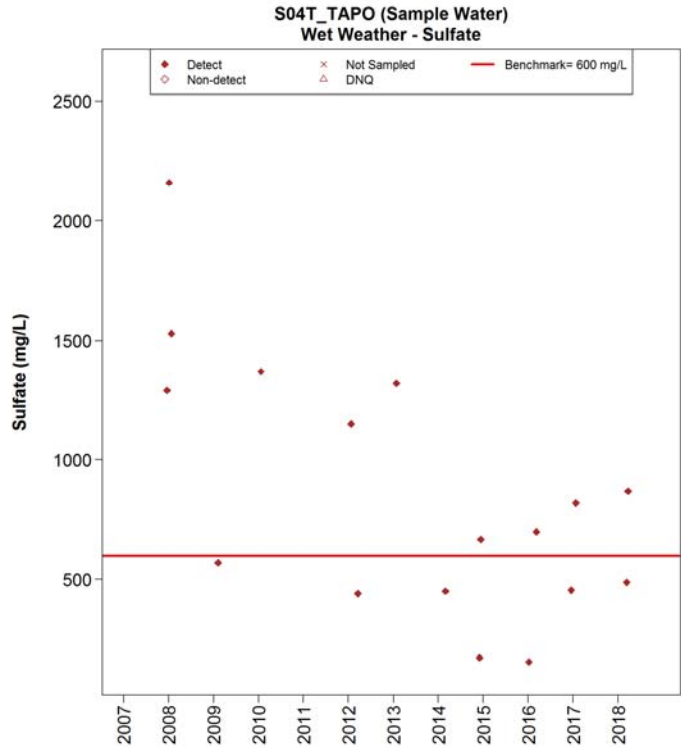


Figure 177. Wet Weather Sulfate Concentrations at Waiver Benchmark Site S04T_TAPO

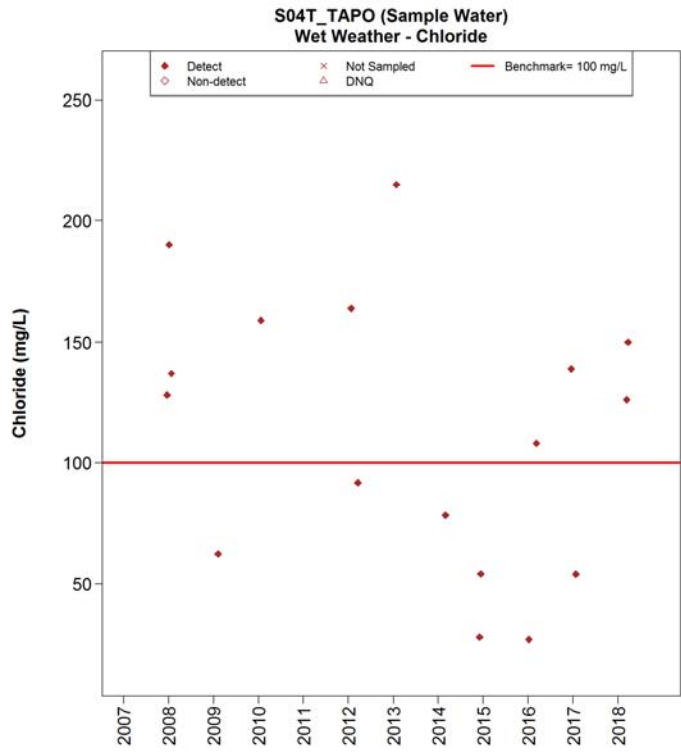


Figure 178. Wet Weather Chloride Concentrations at Waiver Benchmark Site S04T_TAPO

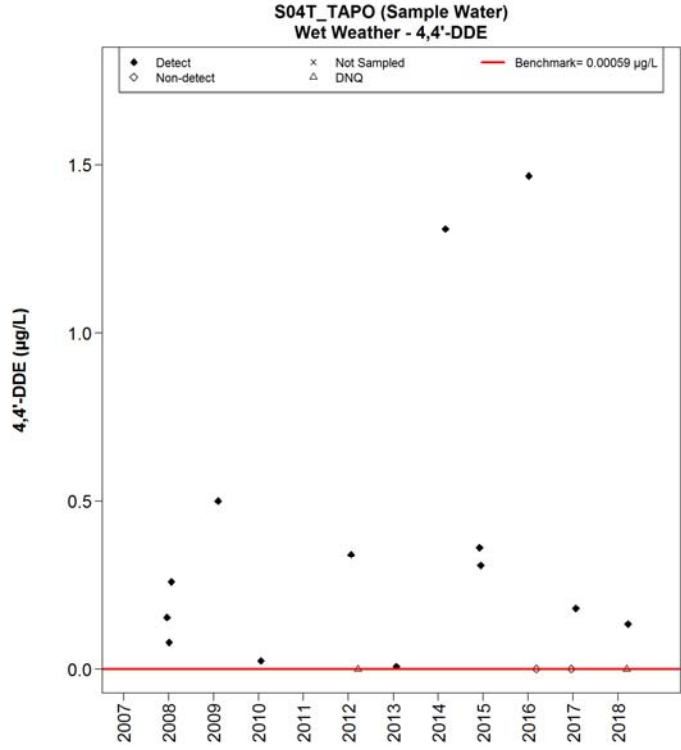


Figure 179. Wet Weather DDE Concentrations at Waiver Benchmark Site S04T_TAPO

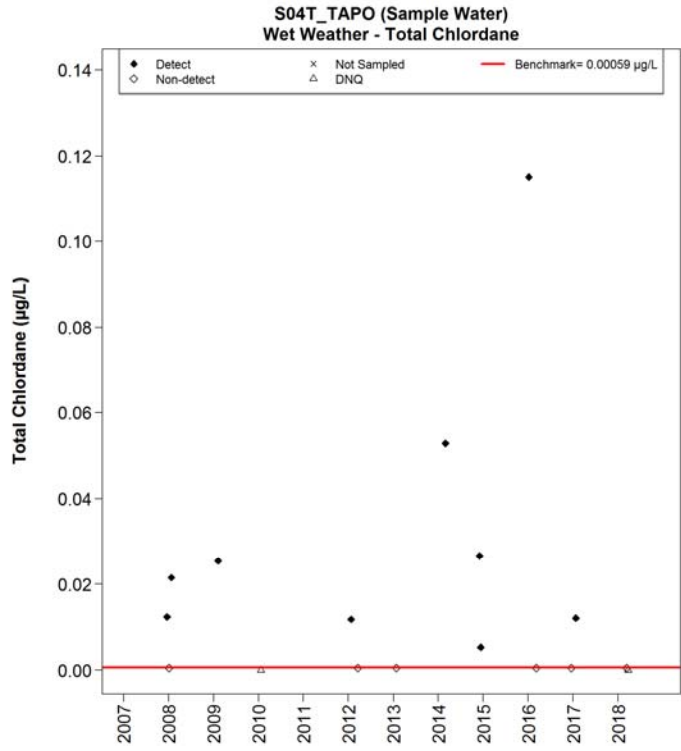


Figure 180. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site S04T_TAPO

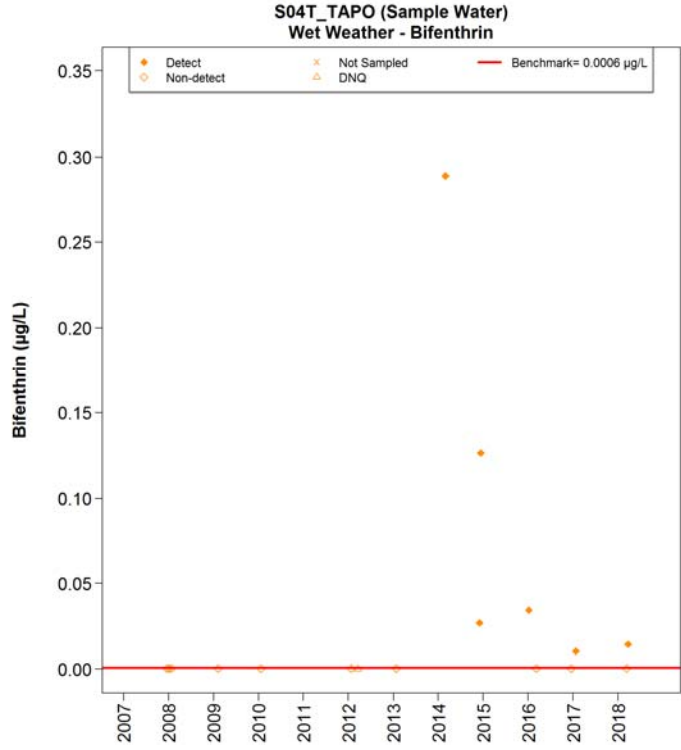


Figure 181. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site S04T_TAPO

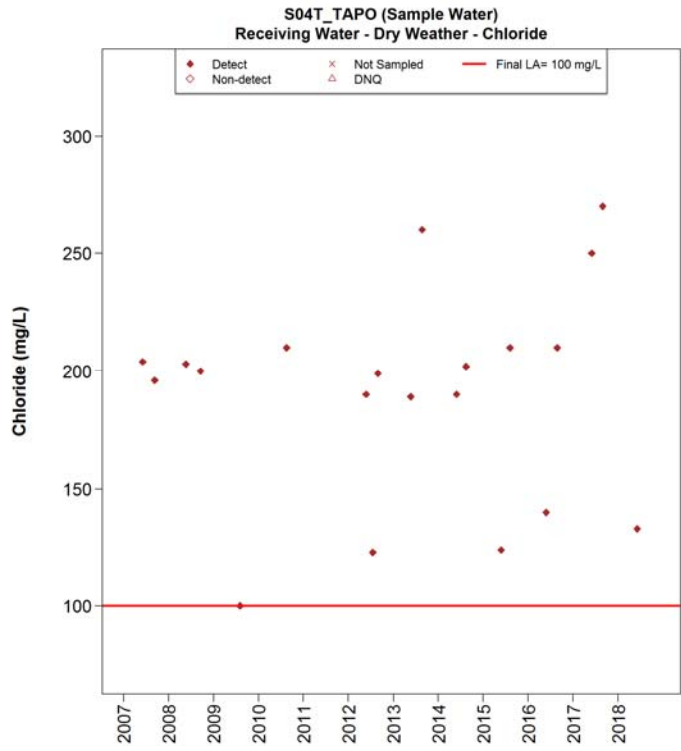


Figure 182. Dry Weather Chloride Concentrations at TMDL LA Site S04T_TAPO

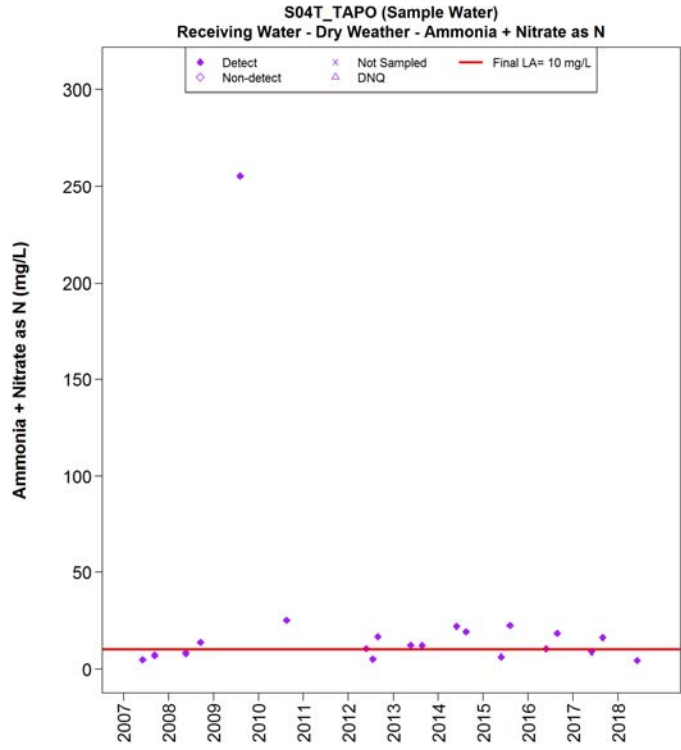


Figure 183. Dry Weather Nitrogen Compounds Concentrations at TMDL LA Site S04T_TAPO

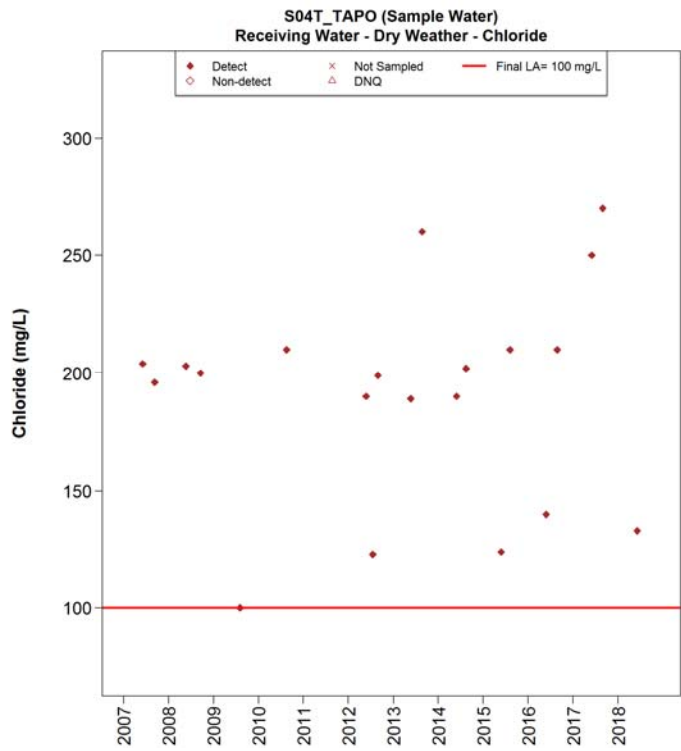


Figure 184. Wet Weather Chloride Concentrations at TMDL LA Use Site S04T_TAPO

Table 87. Summary of Benchmark Exceedance Evaluation for Tapo Canyon Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
<i>E. coli</i>				•		<input checked="" type="checkbox"/>
Salts						
TDS	•		<input checked="" type="checkbox"/>	•		<input checked="" type="checkbox"/>
Sulfate	•		<input checked="" type="checkbox"/>	•		<input checked="" type="checkbox"/>
Chloride	•	• ²	<input checked="" type="checkbox"/>	•	• ²	<input checked="" type="checkbox"/>
Nutrients						
Nitrate-N	•		<input checked="" type="checkbox"/>			
Ammonia-N + Nitrate-N + Nitrite-N		• ²	<input checked="" type="checkbox"/>			
OC Pesticides (Legacy)						
DDD						
DDE	•		<input checked="" type="checkbox"/>	•		<input checked="" type="checkbox"/>
DDT	•		<input checked="" type="checkbox"/>			
Chlordane				•		<input checked="" type="checkbox"/>
OP and Pyrethroid Pesticides (Current)						
Bifenthrin				•		<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is S04T_TAPO.

2. TMDL LAs for the Santa Clara River Nutrients TMDL and Upper Santa Clara River Chloride TMDL were compared to data from S04T_TAPO.

Table 88. BMPs for Additional Implementation in the Tapo Canyon Responsibility Area

Exceedance Condition												
Bacteria		Salt		Nutrients		Legacy Pesticides		Current Pesticides		% of Total Applicable Surveyed Units		
Wet	Dry	Wet	Dry	Dry	Wet	Wet	Survey Question #	BMP	S04T_TAPO Site Drainage Only	Tapo Canyon Responsibility Area	Additional Implementation Needed? ^[a]	
			x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	0%	40%	Yes	
			x	x	x		Irrigation system type	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	52%	34%	Yes	
	x	x	x	x	x		1	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	100%	100%	No	
	x	x	x				2	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	194%	163%	No	
	x	x	x				3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	0%	14%	Yes	
			x				4	Certified nutrient management plan has been prepared for the property	0%	12%	Yes	
			x				5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	100%	83%	Yes	
			x				6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	100%	89%	Yes	
			x				7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	100%	65%	Yes	
			x				8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	100%	81%	Yes	
			x	x	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	141%	No	
				x	x	x	11	How much non-cropped area is bare soil	0%	30%	Yes	
x			x	x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	100%	88%	Yes	
x	x	x	x	x	x	x	13	Grassed waterways are used	0%	8%	Yes	
x	x	x	x	x	x	x	14	Vegetated filter strips are used	0%	5%	Yes	
						x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	100%	No	
						x	16	An integrated pest management plan is implemented	100%	92%	Yes	
	x	x	x	x	x		18	How many acres produce irrigation runoff	194%	129%	No	
x	x	x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	194%	86%	Yes	

[a] Additional implementation recommended for all non-structural BMPs because there is no available survey data for the site drainage.

Table 89. Proposed Best Management Practices for the Tapo Canyon Responsibility Area

Water Quality Issues							BMPs
Bacteria	Salts		Nutrients	Legacy Pesticides		Current Use Pesticides	
Wet Weather	Dry Weather	Wet Weather	Dry Weather	Dry Weather	Wet Weather	Wet Weather	
							<i>Source Control BMPs</i>
			x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x		x	x			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	x		x	x			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
	x		x				Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
	x		x				Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
			x				Prepare a certified nutrient management plan for the property
			x				Conduct soil residual nitrate tests and use results to adjust fertilizer application
			x				Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
			x				Analyze irrigation water nitrate and use results to adjust fertilizer application
			x				Adjust fertilizer application to account for nutrients provided by cover crops
			x	x	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
					x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
						x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
						x	Implement an integrated pest management plan
	x		x	x			Avoid/prevent irrigation runoff
							<i>Structural Non-Treatment BMPs</i>
x			x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals

Water Quality Issues

Bacteria		Salts		Nutrients	Legacy Pesticides		Current Use Pesticides	BMPs
Wet Weather	Dry Weather	Wet Weather	Dry Weather	Dry Weather	Wet Weather	Wet Weather		
x	x	x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	x	x	Use vegetated filter strips
<i>Optional Treatment BMPs</i>								
x	x	x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Boulder Creek Responsibility Area

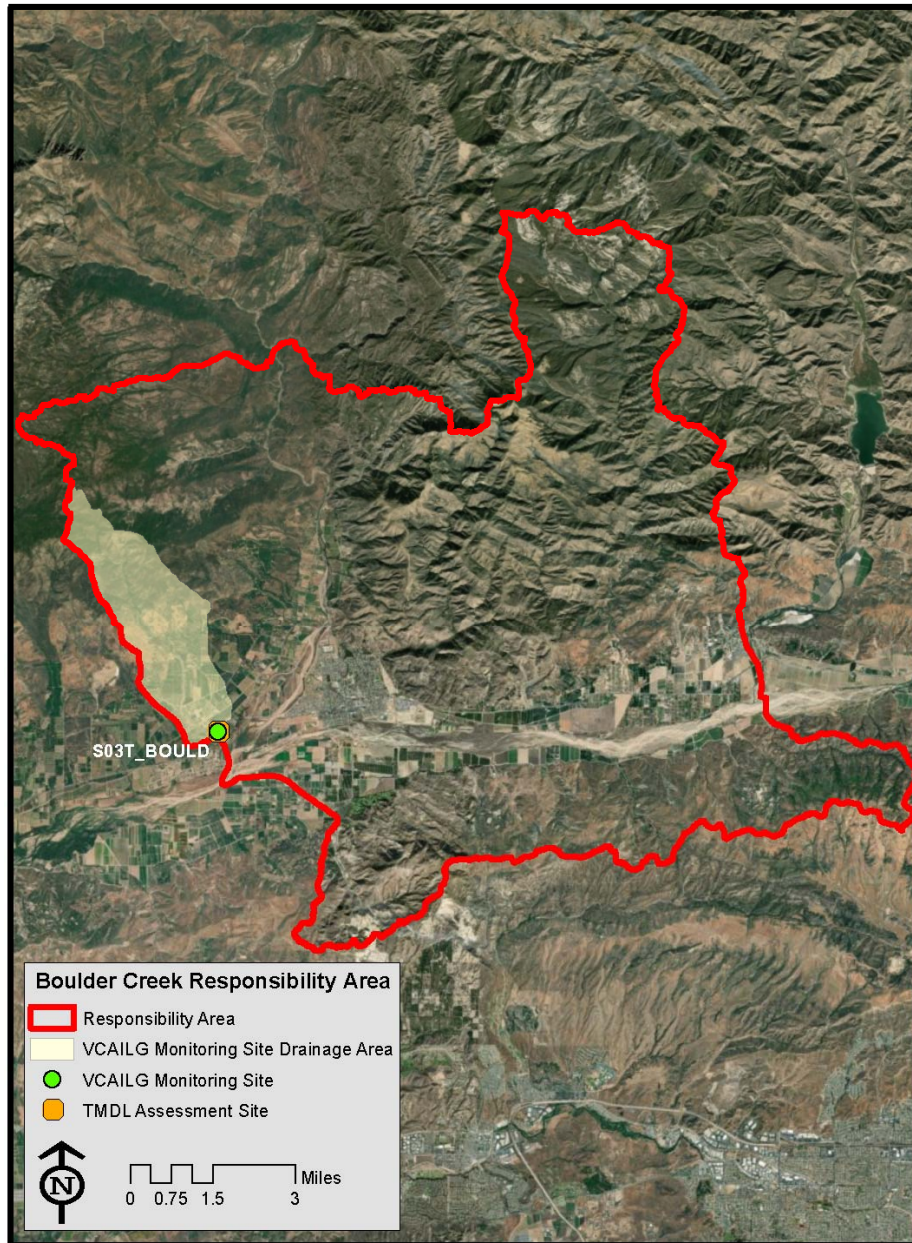


Figure 185. Boulder Creek Responsibility Area Map

The Boulder Creek responsibility area is illustrated in Figure 185. The VCAILG monitoring site also serves as a TMDL assessment site for the SCR Nitrogen TMDL.

Table 90. Boulder Creek Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site S03T_BOULD
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	17,917	1,954
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	911	2
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	15,090	1,952
Assessed Acres from Agricultural Parcel List belonging to Non Members	1,916	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	7,655	1,120
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.51	0.57
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	972	0
Total Estimated Irrigated Acres (Member plus Non Member)	8,627	1,120
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	89%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	6,062	852
Percent of Total Estimated Irrigated Acres that were Surveyed	70%	76%
Percent of VCAILG Member Irrigated Acres that were Surveyed	79%	76%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 91. Boulder Creek Responsibility Area Crop Types and General Production Practices

Crop or Practice	S03T_BOULD Site Drainage Only				S03T_BOULD Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	-	-	-	-
Blueberries	-*	-	-*	-	1*	1	-*	0.01%
Raspberries	-	-	-	-	1	1	-	0.01%
Row Crop	-	-	-	-	569	788	13%	13%
Orchard	671	672	79%	79%	3,502	4,590	79%	76%
Nursery	180	180	21%	21%	365	654	8%	11%
Flower	-	-	-	-	-	22	-	0.4%
Sod	-	-	-	-	-	-	-	-
Other	-	-	-	-	1	8	-	0.13%
Overhead Cover in Production Areas								
Hoop House	-	5	-	1%	399	24	9%	0.4%
No Cover	225	165	26%	19%	1,286	1,426	29%	24%
Greenhouse	-	5	-	1%	31	12	0.7%	0.2%
Shade	-	5	-	0.6%	2	11	0%	0.2%
Other	-	-	-	-	11	-	0.2%	-
Surface Treatments in Production Areas								
Bare Soil	260	210	31%	25%	1,460	1,999	33%	33%
Cover Crop	-	-	-	-	265	532	6%	9%
Plastic	-	-	-	-	42	287	1%	5%
Weed Cloth	-	-	-	-	11	42	0.2%	1%
Mulch	512	563	60%	66%	2,380	3,086	54%	51%
Gravel	95	95	11%	11%	216	344	5%	6%
Other	-	-	-	-	106	160	2%	3%
Irrigation Systems in Production Areas								
Drip Only	-	210	25%	25%	660	820	15%	14%
Microsprinkler/Drip	-	-	-	-	-	-	-	-
Microsprinkler	626	627	74%	74%	3,419	4,453	77%	73%
Overhead Sprinkler	5	5	0.6%	1%	70	154	2%	3%
Overhead/Drip	-	-	-	-	230	564	5%	9%
Furrow Flood	-	-	-	-	59	47	1%	1%
Hand Watering	10	10	1%	1.2%	11	25	0.2%	0.4%
Other	-	-	-	-	1	-	0%	-

Table 92. Boulder Creek Responsibility Area Grower BMPs

Survey Question	Units	S03T_BOULD Site Drainage Only				S03T_BOULD Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	851	714	100%	84%	2,898	4,257	67%	75%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	571	571	67%	67%	3,463	4,831	78%	83%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	-	-	-	-	979	1,090	24%	21%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	341	342	40%	40%	1,485	2,233	33%	38%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	74	74	9%	9%	570	971	13%	17%
Q5a: Are soil residual nitrate tests done?	Acres	378	646	44%	76%	2,727	4,075	61%	70%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	378	646	44%	76%	2,698	4,066	61%	69%
Q6: Are leaf/petiole tests conducted?	Acres	671	672	79%	79%	2,879	3,975	67%	69%
Q7a: Is nitrate measured in fertigation water?	Acres	603	604	71%	71%	2,862	3,910	64%	67%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	603	604	71%	71%	2,862	3,910	64%	67%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	185	185	39%	39%	1,320	1,650	38%	39%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	252	520	30%	61%	1,374	2,342	31%	40%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	227	227	90%	44%	1,154	1,747	84%	75%
Q11: How much non-cropped area is bare soil?	Acres	25	15	3%	2%	1,364	559	31%	11%
Q12a: How many feet of ditches exist?	Feet	10,500	15,500	N/A	N/A	151,180	185,164	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	7,600	12,600	72%	81%	88,198	107,936	58%	58%
Q13a: Are grassed waterways present?	Acres	5	5	0.6%	1%	417	402	9%	7%
Q13b: How many acres drain to grassed waterways?	Acres	5	5	0.6%	1%	190	134	4%	2%
Q14: How many acres are treated by vegetated filter strips?	Acres	197	197	23%	23%	83	314	2%	5%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	851	852	100%	100%	4,175	5,580	94%	95%
Q16: Is an IPM Plan being implemented?	Acres	851	852	100%	100%	3,625	5,013	82%	86%
Q17a: How many acres are organically farmed?	Acres	-	-	-	-	261	407	6%	7%
Q17b: How many acres are conventionally farmed?	Acres	851	852	100%	100%	4,177	5,447	94%	93%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	-	-	-	-	398	789	9%	13%
Q19: Runoff from how many acres is treated or detained?	Acres	197	197	23%	23%	612	1,044	14%	18%

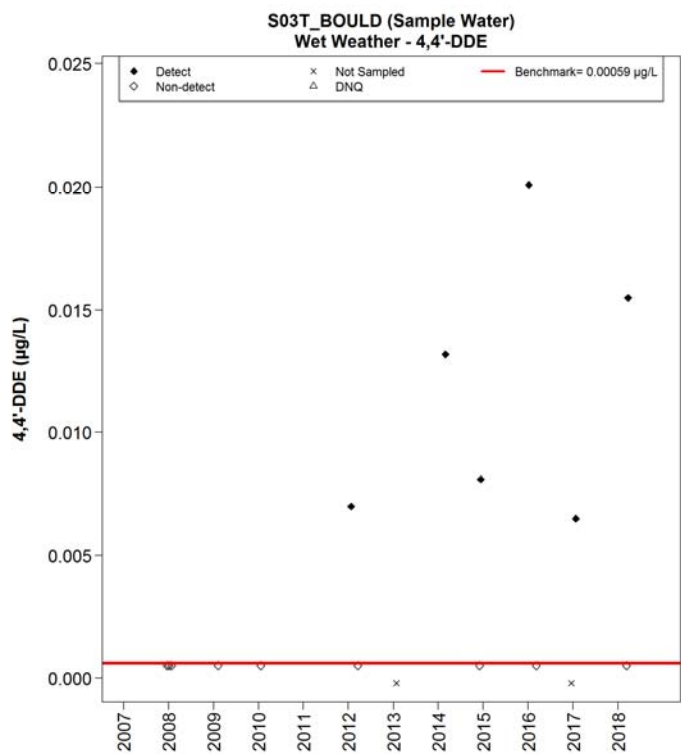


Figure 186. Wet Weather DDE Concentrations at Waiver Benchmark Site S03T_BOULD

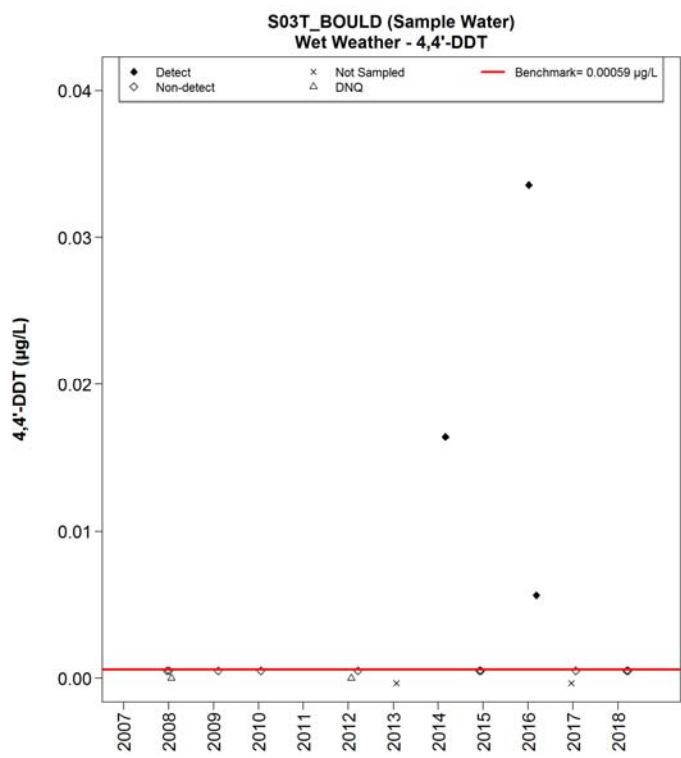


Figure 187. Wet Weather DDT Concentrations at Waiver Benchmark Site S03T_BOULD

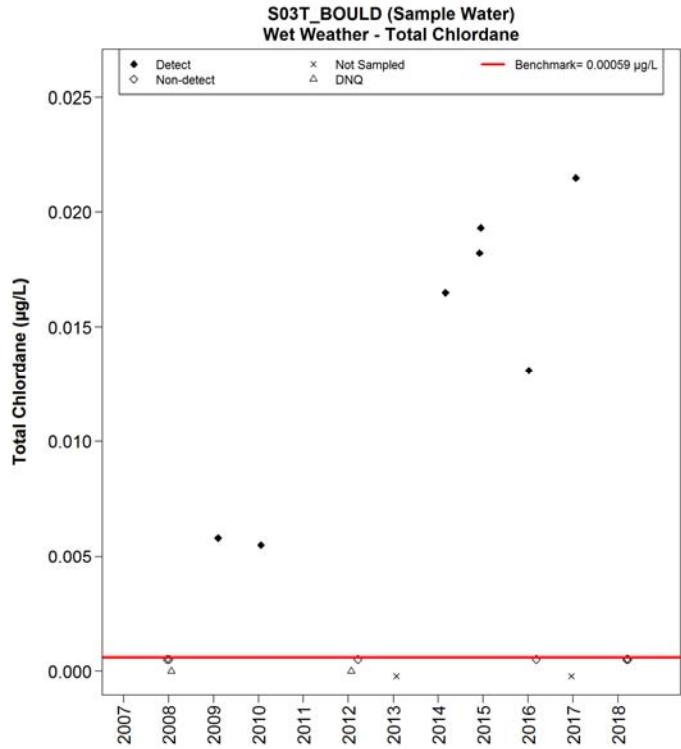


Figure 188. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site S03T_BOULD

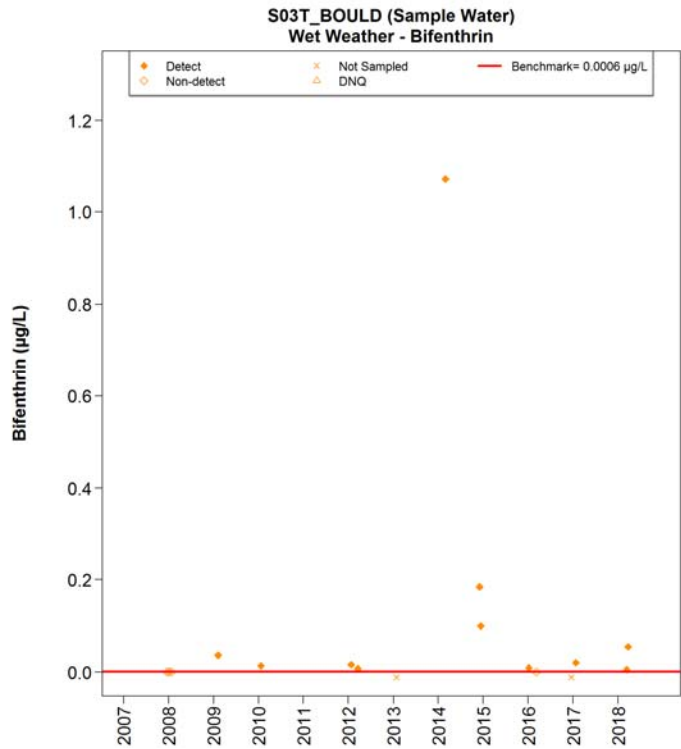


Figure 189. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site S03T_BOULD

Table 93. Summary of Benchmark Exceedance Evaluation for Boulder Creek Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
<i>OC Pesticides (Legacy)</i>						
DDE				•		<input checked="" type="checkbox"/>
DDT				•		<input checked="" type="checkbox"/>
Chlordane				•		<input checked="" type="checkbox"/>
<i>OP and Pyrethroid Pesticides (Current)</i>						
Bifenthrin				•		<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is S03T_BOULD.

Table 94. BMPs for Additional Implementation in the Boulder Creek Responsibility Area

Exceedance Condition		Survey Question #	BMP	% of Total Applicable Surveyed Units		Additional Implementation Needed?
Legacy Pesticides	Current Pesticides			S03T_BOULD Site Drainage Only	Boulder Creek Responsibility Area	
Wet	Wet					
x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	77%	75%	Yes
x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	44%	75%	Yes
x	x	11	How much non-cropped area is bare soil	2%	11%	Yes
x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	81%	58%	Yes
x	x	13	Grassed waterways are used	1%	7%	Yes
x	x	14	Vegetated filter strips are used	23%	5%	Yes
	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	95%	Yes
	x	16	An integrated pest management plan is implemented	100%	86%	Yes
x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	23%	18%	Yes

Table 95. Proposed Best Management Practices for the Boulder Creek Responsibility Area

Water Quality Issues		
Legacy Pesticides	Current Use Pesticides	
Wet Weather	Wet Weather	BMPs
<i>Source Control BMPs</i>		
x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
	x	Implement an integrated pest management plan
<i>Structural Non-Treatment BMPs</i>		
x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	Use grassed waterways
x	x	Use vegetated filter strips
<i>Optional Treatment BMPs</i>		
x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bardsdale Responsibility Area

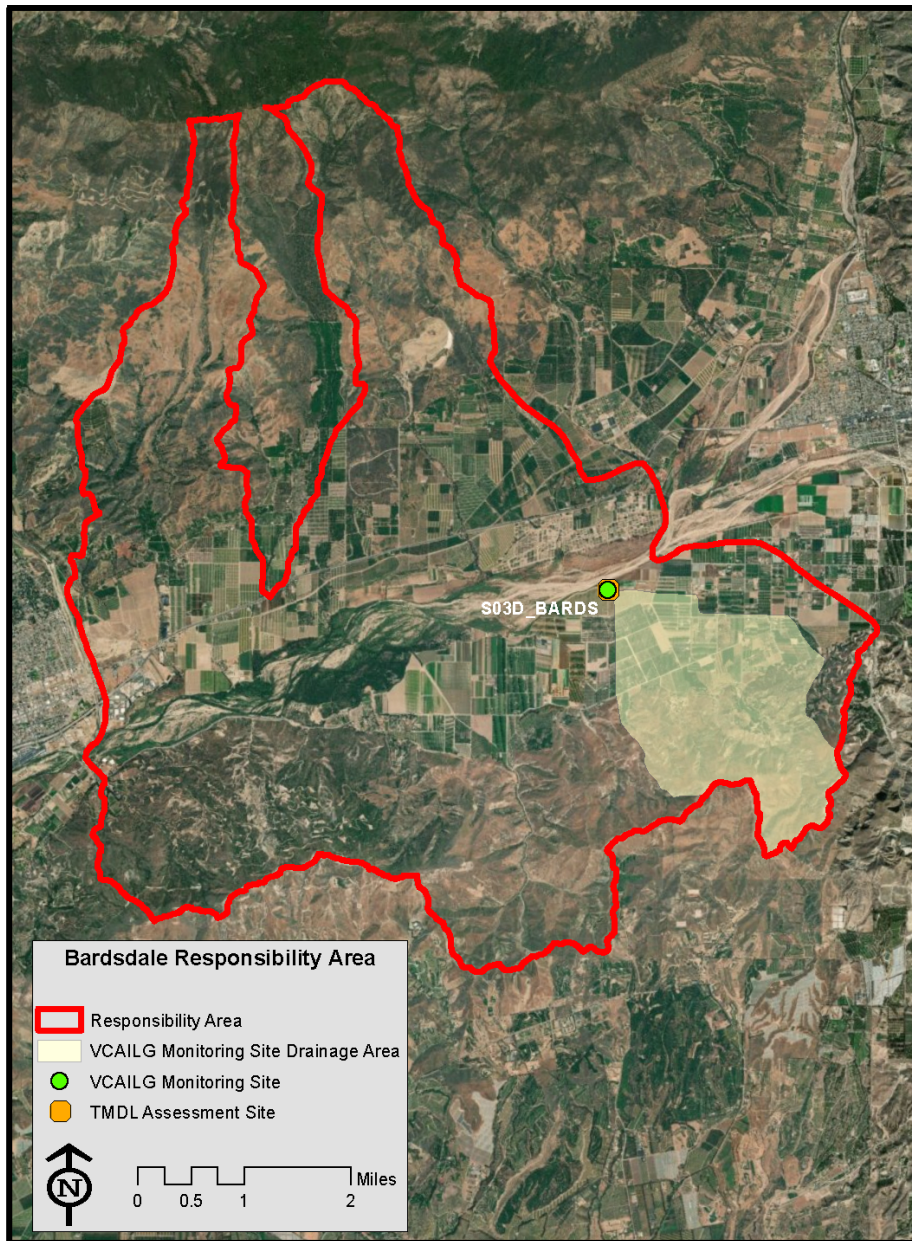


Figure 190. Bardsdale Responsibility Area Map

The Bardsdale responsibility area is illustrated in Figure 190. The VCAILG monitoring site is also used as a TMDL assessment site for the SCR Nitrogen TMDL.

Table 96. Bardsdale Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site S03D_BARDS
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	10,485	1,118
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	153	18
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	9,461	975
Assessed Acres from Agricultural Parcel List belonging to Non Members	870	125
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	6,087	878
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.64	0.90
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	560	112
Total Estimated Irrigated Acres (Member plus Non Member)	6,647	990
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	92%	89%
Survey Response Information		
Sum Surveyed Irrigated Acres	4,411	794
Percent of Total Estimated Irrigated Acres that were Surveyed	66%	80%
Percent of VCAILG Member Irrigated Acres that were Surveyed	72%	90%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 97. Bardsdale Responsibility Area Crop Types and General Production Practices

Crop or Practice	S03D_BARDS Site Drainage Only				S03D_BARDS Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	-	-	-	-
Blueberries	_*	-	_*	-	_*	-	_*	-
Raspberries	-	-	-	-	-	-	-	-
Row Crop	18	26	2%	3%	409	360	14%	8%
Orchard	801	768	97%	97%	2,177	3,760	75%	85%
Nursery	4	-	0.5%	-	289	290	10%	7%
Flower	-	-	-	-	-	-	-	-
Sod	-	-	-	-	-	-	-	-
Other	-	-	-	-	16	-	0.6%	-
Overhead Cover in Production Areas								
Hoop House	-	-	-	-	55	-	2%	-
No Cover	170	26	21%	3%	1,189	649	41%	15%
Greenhouse	-	-	-	-	15	1	0.5%	0.02%
Shade	-	-	-	-	10	-	0.3%	-
Other	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas								
Bare Soil	456	489	55%	62%	1,595	2,299	55%	52%
Cover Crop	190	143	23%	18%	211	420	7%	10%
Plastic	-	-	-	-	25	15	0.9%	0.3%
Weed Cloth	-	-	-	-	-	4	0%	0.1%
Mulch	177	166	22%	21%	909	1,481	31%	34%
Gravel	-	-	-	-	262	263	9%	6%
Other	-	-	-	-	-	21	-	0.5%
Irrigation Systems in Production Areas								
Drip Only	89	75%	11%	9%	507	482	18%	11%
Microsprinkler/Drip	-	-	-	-	-	-	0%	-
Microsprinkler	693	657	84%	83%	2,188	3,675	76%	83%
Overhead Sprinkler	-	-	-	-	105	86	4%	2%
Overhead/Drip	18	26	2%	3%	31	43	1%	1%
Furrow Flood	23	36	3%	5%	105	124	4%	3%
Hand Watering	-	-	-	-	-	-	-	-
Other	-	-	-	-	5	-	0.2%	-

Table 98. Bardsdale Responsibility Area Grower BMPs

Survey Question	Units	S03D_BARDS Site Drainage Only				S03D_BARDS Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	745	697	91%	89%	1,854	3,057	68%	74%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	709	691	86%	87%	2,280	3,329	79%	77%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	370	38	45%	5%	764	1,135	29%	27%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	616	259	75%	33%	1,762	2,227	61%	51%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	99	101	12%	13%	886	1,498	31%	35%
Q5a: Are soil residual nitrate tests done?	Acres	601	560	73%	71%	1,566	2,344	54%	54%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	601	560	73%	71%	1,566	2,344	54%	54%
Q6: Are leaf/petiole tests conducted?	Acres	773	730	94%	92%	2,708	4,003	95%	94%
Q7a: Is nitrate measured in fertigation water?	Acres	544	513	66%	65%	1,833	2,763	63%	64%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	544	513	66%	65%	1,833	2,758	63%	64%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops	Acres	172	146	30%	57%	785	758	48%	38%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	62	95	7%	12%	614	909	21%	21%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	73	60	119%	63%	541	767	88%	84%
Q11: How much non-cropped area is bare soil?	Acres	16	32	2%	41%	432	603	15%	21%
Q12a: How many feet of ditches exist?	Feet	21,308	20,678	N/A	N/A	91,167	126,164	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	13,330	11,205	63%	54%	50,770	71,819	56%	57%
Q13a: Are grassed waterways present?	Acres	283	283	34%	36%	111	376	4%	9%
Q13b: How many acres drain to grassed waterways?	Acres	146	146	18%	18%	46	185	2%	4%
Q14: How many acres are treated by vegetated filter strips?	Acres	184	185	22%	23%	68	251	2%	6%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	703	674	85%	85%	2,862	4,162	99%	96%
Q16: Is an IPM Plan being implemented?	Acres	666	621	81%	78%	2,672	4,033	92%	93%
Q17a: How many acres are organically farmed?	Acres	172	157	21%	20%	144	302	5%	7%
Q17b: How many acres are conventionally farmed?	Acres	651	637	79%	80%	2,748	4,038	95%	93%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	44	25	5%	3%	290	380	10%	9%
Q19: Runoff from how many acres is treated or detained?	Acres	61	45	7%	6%	346	410	12%	9%

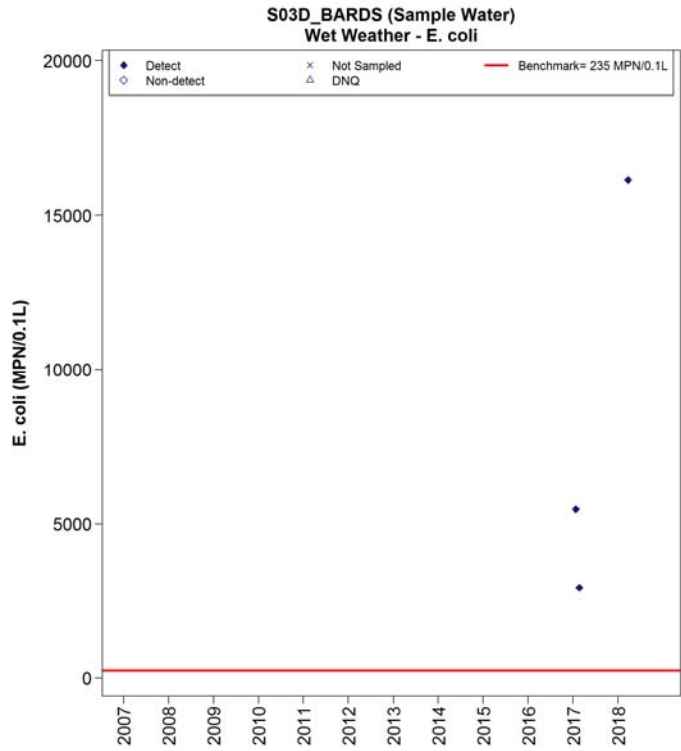


Figure 191. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site S03D_BARDS

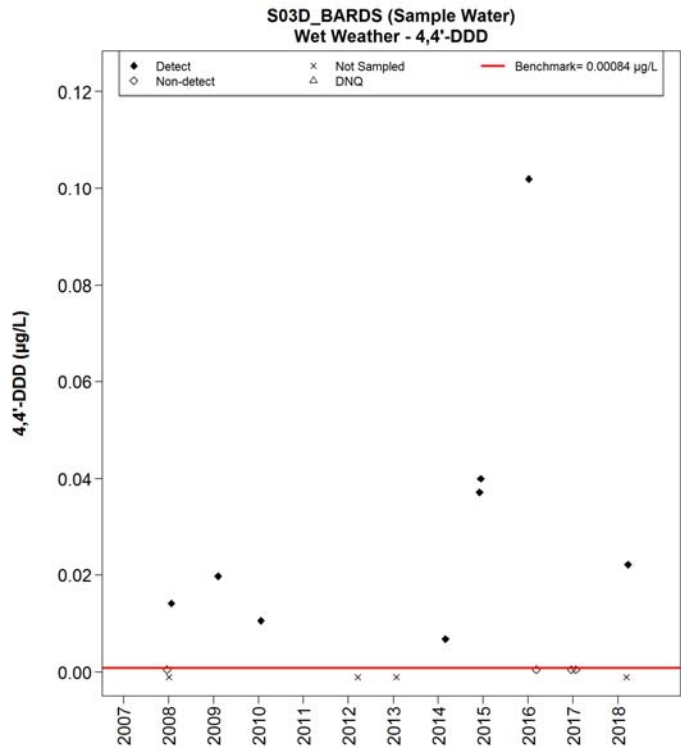


Figure 192. Wet Weather DDD Concentrations at Waiver Benchmark Site S03D_BARDS

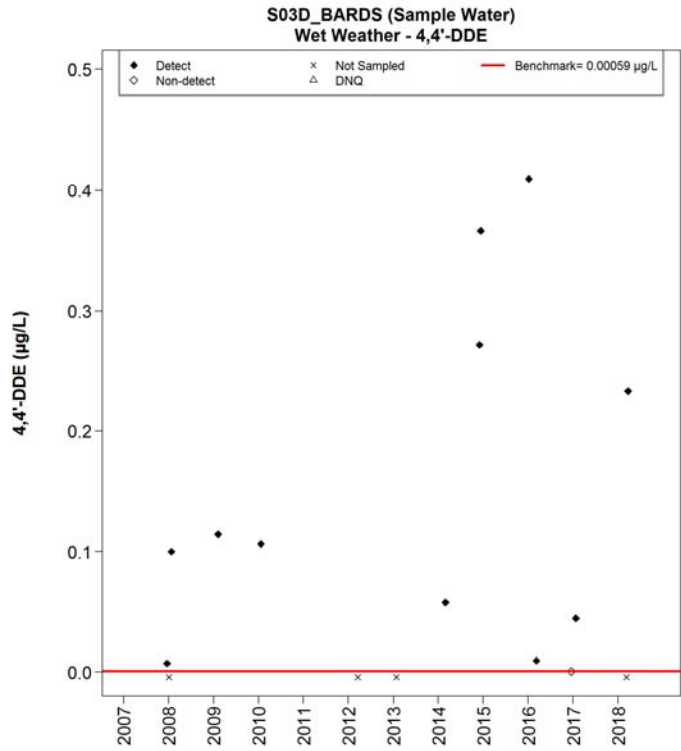


Figure 193. Wet Weather DDE Concentrations at Waiver Benchmark Site S03D_BARDS

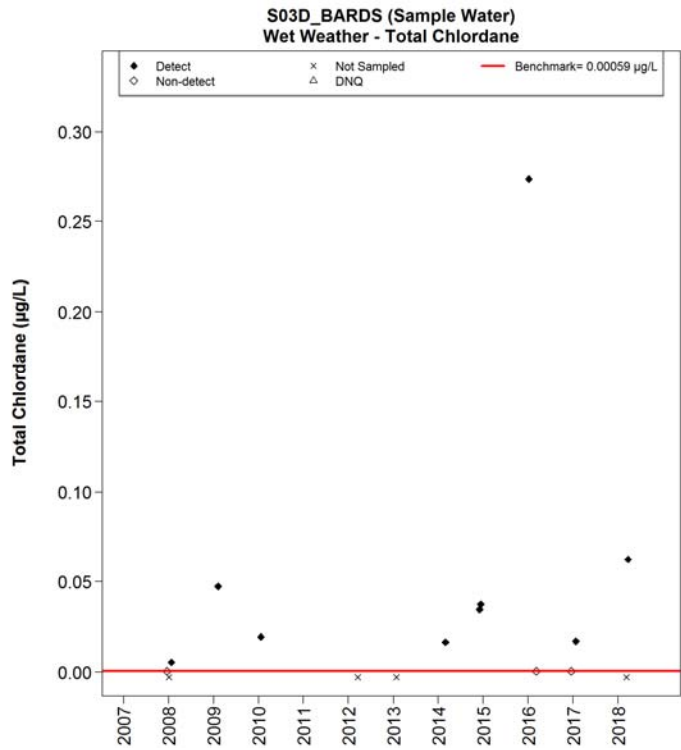


Figure 194. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site S03D_BARDS

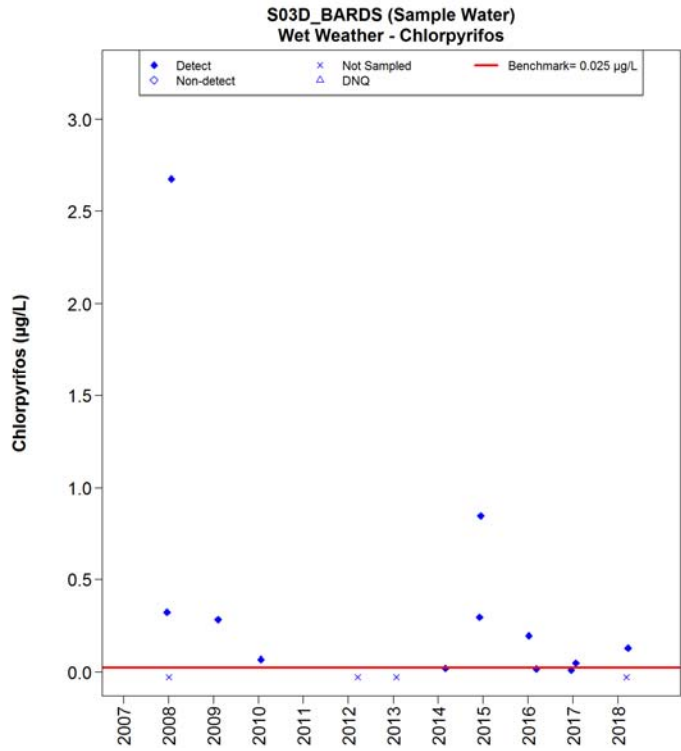


Figure 195. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site S03D_BARDS

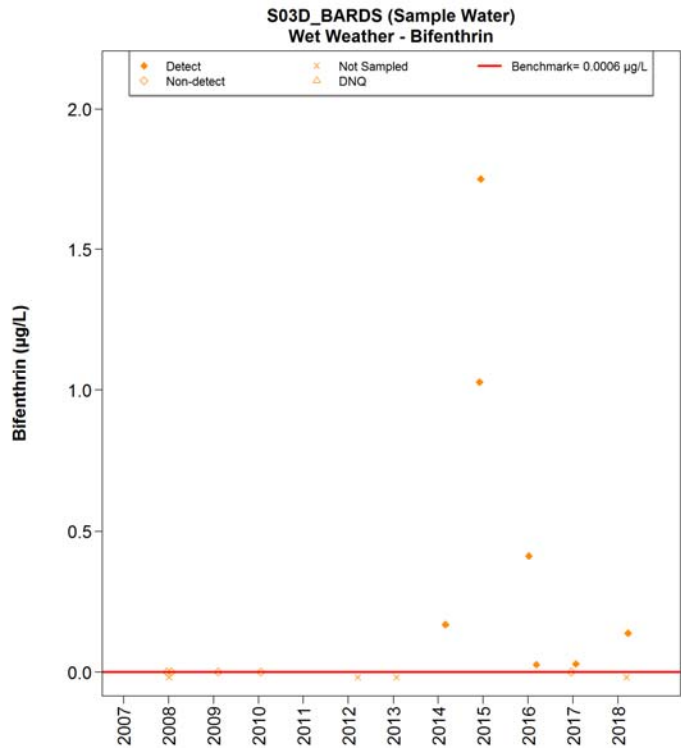


Figure 196. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site S03D_BARDS

Table 99. Summary of Benchmark Exceedance Evaluation for Bardsdale Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
<i>E. coli</i>				•		<input checked="" type="checkbox"/>
OC Pesticides (Legacy)						
DDD				•		<input checked="" type="checkbox"/>
DDE				•		<input checked="" type="checkbox"/>
Chlordane				•		<input checked="" type="checkbox"/>
OP and Pyrethroid Pesticides (Current)						
Chlorpyrifos				•		<input checked="" type="checkbox"/>
Bifenthrin				•		<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is S03D_BARDS.

Table 100. BMPs for Additional Implementation in the Bardsdale Responsibility Area

Exceedance Condition			Survey Question #	BMP	% of Total Applicable Surveyed Units		Additional Implementation Needed?
Bacteria	Legacy Pesticides	Current Pesticides			S03D_BARDS Site Drainage Only	Bardsdale Responsibility Area	
Wet	Wet	Wet					
	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	39%	51%	Yes
	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	63%	84%	Yes
	x	x	11	How much non-cropped area is bare soil	41%	21%	Yes
x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	54%	57%	Yes
x	x	x	13	Grassed waterways are used	36%	9%	Yes
x	x	x	14	Vegetated filter strips are used	23%	6%	Yes
		x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	85%	96%	Yes
		x	16	An integrated pest management plan is implemented	78%	93%	Yes
		x	18	How many acres produce irrigation runoff	3%	9%	Yes
x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	6%	9%	Yes

Table 101. Proposed Best Management Practices for the Bardsdale Responsibility Area

Water Quality Issues			
Bacteria	Legacy Pesticides	Current Use Pesticides	
Wet Weather	Wet Weather	Wet Weather	BMPs
<i>Source Control BMPs</i>			
	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x	x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
	x	x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
		x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
		x	Implement an integrated pest management plan
<i>Structural Non-Treatment BMPs</i>			
x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	Use grassed waterways
x	x	x	Use vegetated filter strips
<i>Optional Treatment BMPs</i>			
x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Santa Paula Creek Responsibility Area

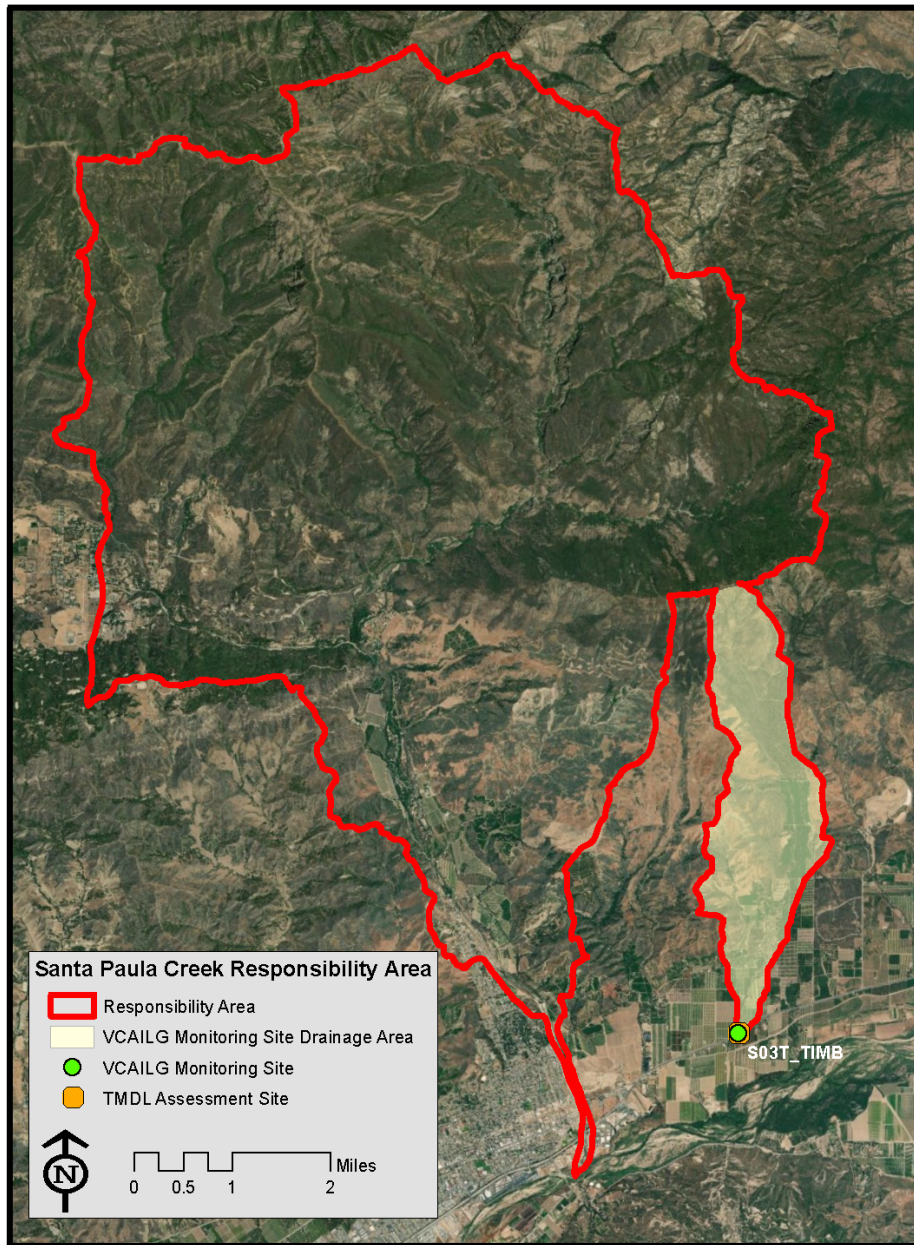


Figure 197. Santa Paula Creek Responsibility Area Map

The Santa Paula Creek responsibility area is illustrated in Figure 197. The VCAILG monitoring site also serves as a TMDL assessment site for the SCR Nitrogen TMDL.

Table 102. Santa Paula Creek Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site S03T_TIMB
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	3,326	716
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	51	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	2,854	709
Assessed Acres from Agricultural Parcel List belonging to Non Members	422	7
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	1,353	423
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.47	0.60
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	200	4
Total Estimated Irrigated Acres (Member plus Non Member)	1,553	427
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	87%	99%
Survey Response Information		
Sum Surveyed Irrigated Acres	1,207	360
Percent of Total Estimated Irrigated Acres that were Surveyed	78%	84%
Percent of VCAILG Member Irrigated Acres that were Surveyed	89%	85%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 103. Santa Paula Creek Responsibility Area Crop Types and General Production Practices

Crop or Practice	S03T_TIMB Site Drainage Only				S03T_TIMB Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	-	-	-	-
Blueberries	_*	-	_*	-	_*	-	_*	-
Raspberries	-	-	-	-	-	-	-	-
Row Crop	-	-	-	-	-	-	-	-
Orchard	254	360	100%	100%	460	1,207	100%	100%
Nursery	-	-	-	-	-	-	-	-
Flower	-	-	-	-	-	-	-	-
Sod	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Overhead Cover in Production Areas								
Hoop House	-	-	-	-	-	-	-	-
No Cover	74	-	29%	-	67	-	15%	-
Greenhouse	-	-	-	-	-	-	-	-
Shade	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas								
Bare Soil	-	106	-	29%	261	533	57%	44%
Cover Crop	-	-	-	-	25	42	5%	3%
Plastic	-	-	-	-	-	-	-	-
Weed Cloth	-	-	-	-	-	-	-	-
Mulch	165	165	65%	46%	90	464	20%	38%
Gravel	-	-	-	-	-	-	-	-
Other	89	89	35%	25%	88	183	19%	15%
Irrigation Systems in Production Areas								
Drip Only	-	-	-	-	130	163	28%	14%
Microsprinkler/Drip	-	-	-	-	-	-	-	-
Microsprinkler	254	360	100%	100%	330	1,044	72%	86%
Overhead Sprinkler	-	-	-	-	-	-	-	-
Overhead/Drip	-	-	-	-	-	-	-	-
Furrow Flood	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-

Table 104. Santa Paula Creek Responsibility Area Grower BMPs

Survey Question	Units	S03T_TIMB Site Drainage Only				S03T_TIMB Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	134	245	53%	68%	460	852	100%	71%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	134	184	53%	51%	230	911	50%	75%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	-	50	-	16%	106	343	28%	32%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	134	134	53%	37%	181	518	39%	43%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	134	134	53%	37%	88	376	19%	31%
Q5a: Are soil residual nitrate tests done?	Acres	134	134	53%	37%	287	616	62%	51%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	134	134	53%	37%	287	616	62%	51%
Q6: Are leaf/petiole tests conducted?	Acres	254	360	100%	100%	449	1,113	98%	92%
Q7a: Is nitrate measured in fertigation water?	Acres	45	117	18%	33%	332	620	72%	51%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	45	117	18%	33%	268	556	58%	46%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	-	-	-	-	25	25	56%	9%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	175	185	69%	51%	143	373	31%	31%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	61	76	35%	41%	129	358	91%	96%
Q11: How much non-cropped area is bare soil?	Acres	11	21	4%	7%	269	569	58%	39%
Q12a: How many feet of ditches exist?	Feet	14,840	18,040	N/A	N/A	4,628	51,168	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	4,540	14,840	31%	82%	4,250	28,940	92%	57%
Q13a: Are grassed waterways present?	Acres	44	44	18%	12%	70	117	15%	10%
Q13b: How many acres drain to grassed waterways?	Acres	5	5	2%	1%	-	5	-	0.4%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	-	-	-	5	-	0.4%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	254	360	100%	100%	351	1,069	76%	89%
Q16: Is an IPM Plan being implemented?	Acres	254	321	100%	89%	351	1,030	76%	85%
Q17a: How many acres are organically farmed?	Acres	-	-	-	-	-	79	-	7%
Q17b: How many acres are conventionally farmed?	Acres	254	360	100%	100%	460	1,129	100%	93%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	-	5	-	1%	14	67	3%	6%
Q19: Runoff from how many acres is treated or detained?	Acres	-	-	-	-	9	9	2%	1%

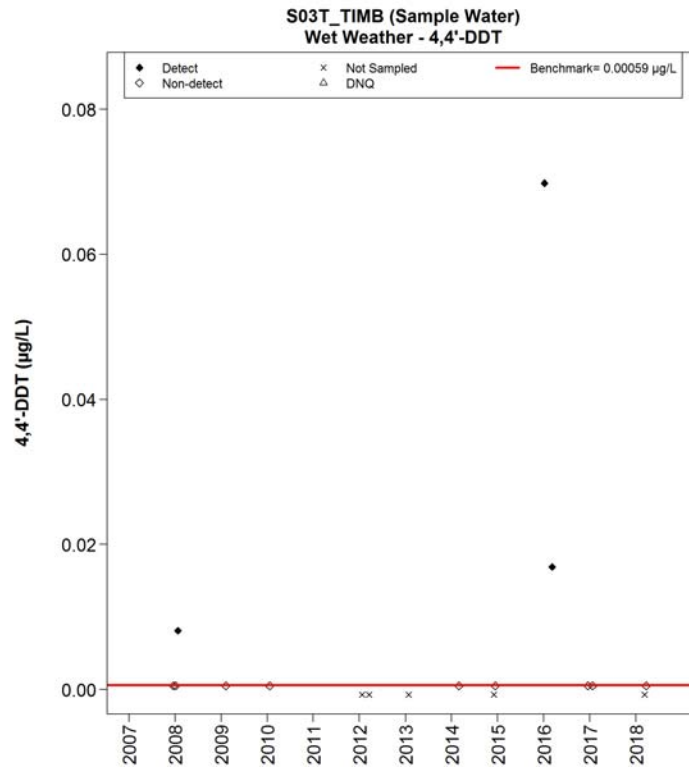


Figure 198. Wet Weather DDT Concentrations at Waiver Benchmark Site S03T_TIMB

Table 105. Summary of Benchmark Exceedance Evaluation for Santa Paula Creek Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
<i>OC Pesticides (Legacy)</i>						
DDT				•		<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is S03T_TIMB.

Table 106. BMPs for Additional Implementation in the Santa Paula Creek Responsibility Area

Exceedance Condition	Legacy Pesticides	Survey Question #	BMP	% of Total Applicable Surveyed Units		Additional Implementation Needed?
				S03T_TIMB Site Drainage Only	Santa Paula Creek Responsibility Area	
x		Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	71%	56%	Yes
x		9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	41%	96%	Yes
x		11	How much non-cropped area is bare soil	7%	39%	Yes
x		12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	82%	57%	Yes
x		13	Grassed waterways are used	12%	10%	Yes
x		14	Vegetated filter strips are used	0%	0.4%	Yes
x		19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	0%	1%	Yes

Table 107. Proposed Best Management Practices for the Santa Paula Creek Responsibility Area

Water Quality Issues	
Legacy Pesticides	
Wet Weather	BMPs
<i>Source Control BMPs</i>	
x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
<i>Structural Non-Treatment BMPs</i>	
x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	Use grassed waterways
x	Use vegetated filter strips
<i>Optional Treatment BMPs</i>	
x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Todd Barranca Responsibility Area



Figure 199. Todd Barranca Responsibility Area Map

The Todd Barranca responsibility area is illustrated in Figure 199. Compliance with TMDL LAs applicable to this responsibility area are evaluated at the following monitoring sites in the manner described:

- S02T_TODD is an SCR Nitrogen TMDL Assessment Site
- Site S02T_ELLS is an SCR Estuary Toxaphene TMDL Suspended Sediment Assessment Site for Reach 2
- Site S01D_MONAR is an SCR Estuary Toxaphene TMDL Suspended Sediment Assessment Site for Reach 1
- The yellow circle marks the SCR Estuary Toxaphene TMDL Fish Tissue Assessment Area

Table 108. Todd Barranca Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site S02T_TODD
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	16,868	352
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	378	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	15,525	253
Assessed Acres from Agricultural Parcel List belonging to Non Members	965	99
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	10,215	154
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.66	0.61
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	635	60
Total Estimated Irrigated Acres (Member plus Non Member)	10,850	214
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	94%	72%
Survey Response Information		
Sum Surveyed Irrigated Acres	8,084	154
Percent of Total Estimated Irrigated Acres that were Surveyed	75%	72%
Percent of VCAILG Member Irrigated Acres that were Surveyed	79%	100%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 109. Todd Barranca Responsibility Area Crop Types and General Production Practices

Crop or Practice	S02T_TODD Site Drainage Only				S02T_TODD Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	1,285	1,693	20%	21%
Blueberries	41*	-	10%*	-	-*	19	-*	0.2%
Raspberries	-	41	-	27%	-	42	-	1%
Row Crop	20	-	5%	-	964	1,321	15%	16%
Orchard	374	112	86%	73%	4,023	4,790	62%	59%
Nursery	-	-	-	-	60	103	0.9%	1%
Flower	-	-	-	-	96	100	1%	1%
Sod	-	-	-	-	-	-	-	-
Other	-	-	-	-	19	17	0.3%	0.2%
Overhead Cover in Production Areas								
Hoop House	-	41	-	27%	79	106	1%	1%
No Cover	-	-	-	-	507	3,109	8%	38%
Greenhouse	-	-	-	-	4	39	0.1%	0.5%
Shade	-	-	-	-	1	16	-	0.2%
Other	-	-	-	-	-	24	-	0.3%
Surface Treatments in Production Areas								
Bare Soil	61	96	14%	62%	2,271	3,198	35%	40%
Cover Crop	-	-	-	-	130	392	2%	5%
Plastic	-	-	-	-	1,400	1,805	22%	22%
Weed Cloth	-	-	-	-	39	85	0.6%	1%
Mulch	374	58	86%	38%	2,381	2,552	37%	32%
Gravel	-	-	-	-	5	9	0.1%	0.1%
Other	-	-	-	-	239	374	4%	5%
Irrigation Systems in Production Areas								
Drip Only	86	41	20%	27%	1,039	1,377	16%	17%
Microsprinkler/Drip	-	-	-	-	782	936	12%	12%
Microsprinkler	349	112	80%	73%	3,486	4,048	54%	50%
Overhead Sprinkler	-	-	-	-	201	74	3%	1%
Overhead/Drip	-	-	-	-	881	1,542	14%	19%
Furrow Flood	-	-	-	-	94	74	1%	1%
Hand Watering	-	-	-	-	8	17	0.1%	0.2%
Other	-	-	-	-	-	-	-	-

* Value for 2017 is for Raspberries & Blueberries combined

Table 110. Todd Barranca Responsibility Area Grower BMPs

Survey Question	Units	S02T_TODD Site Drainage Only				S02T_TODD Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	436	96	100%	62%	5,450	4,574	85%	62%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	27	112	6%	73%	2,901	5,847	45%	79%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	41	41	10%	42%	1,439	1,755	23%	25%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	351	96	81%	62%	3,846	3,354	60%	45%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	-	96	-	62%	1,341	2,125	21%	29%
Q5a: Are soil residual nitrate tests done?	Acres	84	154	19%	100%	3,830	5,691	59%	77%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	84	154	19%	100%	3,830	5,691	59%	77%
Q6: Are leaf/petiole tests conducted?	Acres	436	112	100%	100%	6,029	6,625	94%	93%
Q7a: Is nitrate measured in fertigation water?	Acres	436	154	100%	100%	4,654	5,191	72%	70%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	436	154	100%	100%	4,576	5,177	71%	70%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	41	41	100%	100%	1,886	2,157	67%	68%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2% ^d ?	Acres	27	27	6%	18%	1,397	1,734	22%	23%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	27	27	100%	100%	1,439	1,778	103%	103%
Q11: How much non-cropped area is bare soil?	Acres	57	55	13%	55%	811	1,608	13%	39%
Q12a: How many feet of ditches exist?	Feet	6,000	700	N/A	N/A	152,730	213,729	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	2,400	700	40%	100%	67,514	85,816	44%	40%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	448	385	7%	5%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	375	324	6%	4%
Q14: How many acres are treated by vegetated filter strips?	Acres	2	-	0.5%	-	267	227	4%	3%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	436	154	100%	100%	6,301	7,133	98%	97%
Q16: Is an IPM Plan being implemented?	Acres	436	99	100%	65%	6,097	6,673	95%	90%
Q17a: How many acres are organically farmed?	Acres	41	41	10%	27%	266	214	4%	3%
Q17b: How many acres are conventionally farmed?	Acres	394	112	90%	73%	6,180	7,187	96%	97%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	-	-	-	-	545	1,056	8%	14%
Q19: Runoff from how many acres is treated or detained?	Acres	-	-	-	-	821	1,158	13%	16%

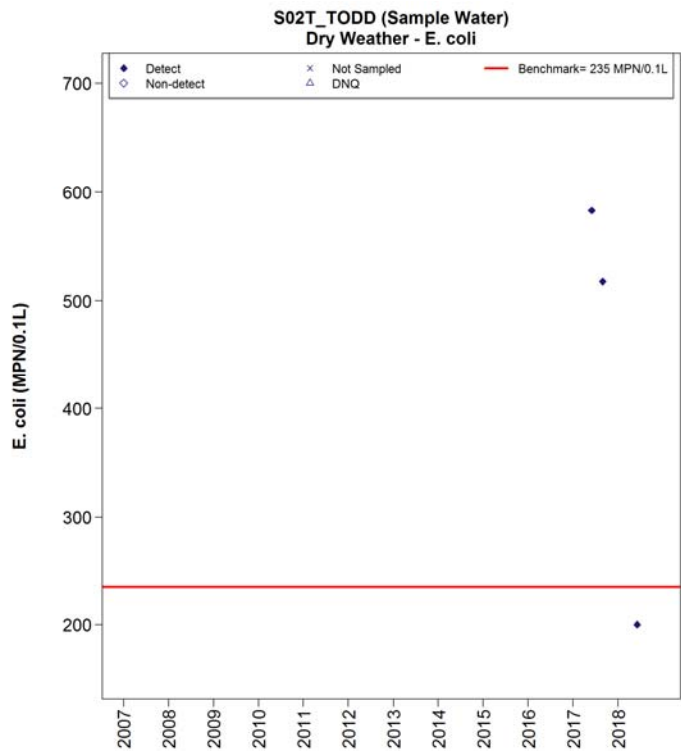


Figure 200. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site S02T_TODD

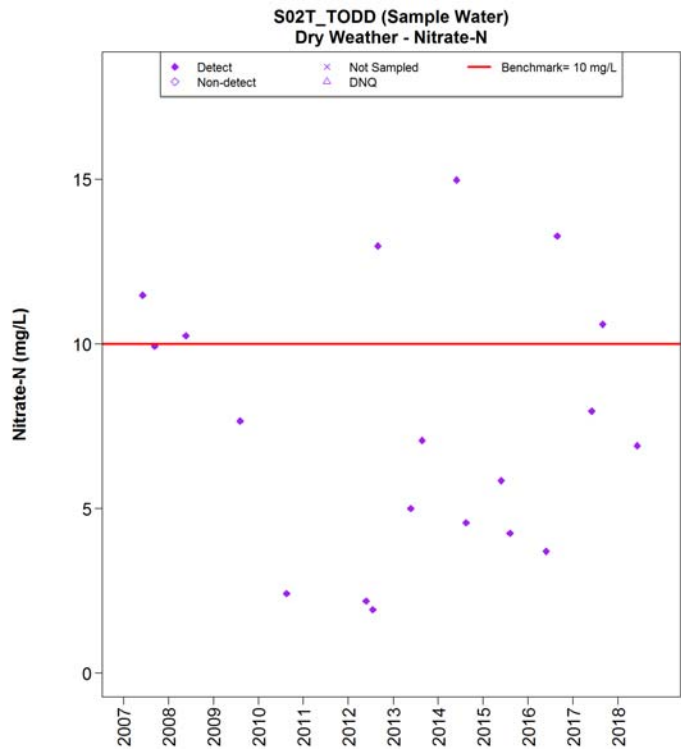


Figure 201. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site S02T_TODD

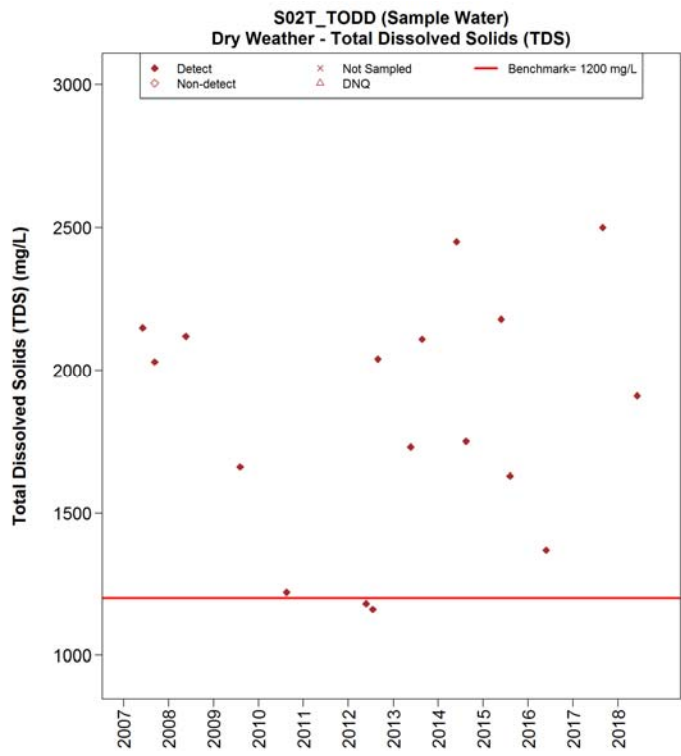


Figure 202. Dry Weather Total Dissolved Solids Concentrations at Waiver Benchmark Site S02T_TODD

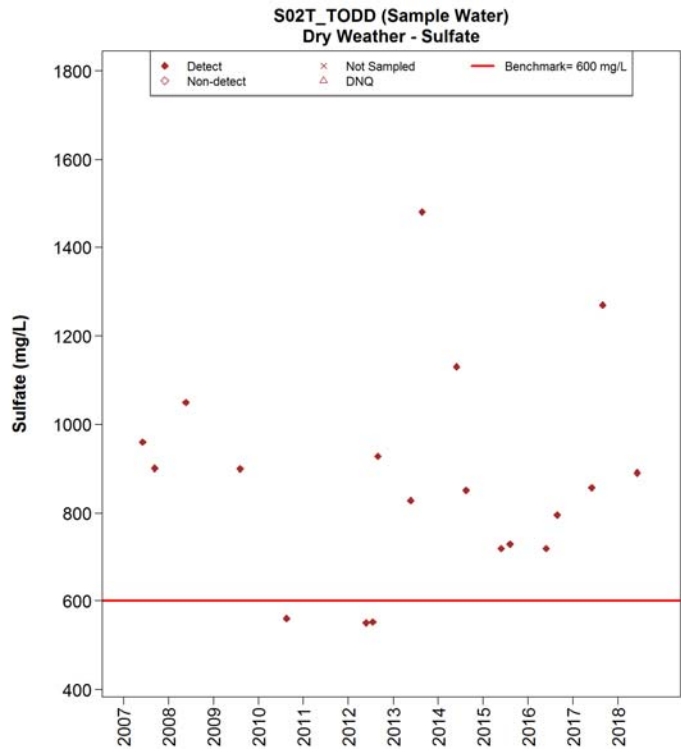


Figure 203. Dry Weather Sulfate Concentrations at Waiver Benchmark Site S02T_TODD

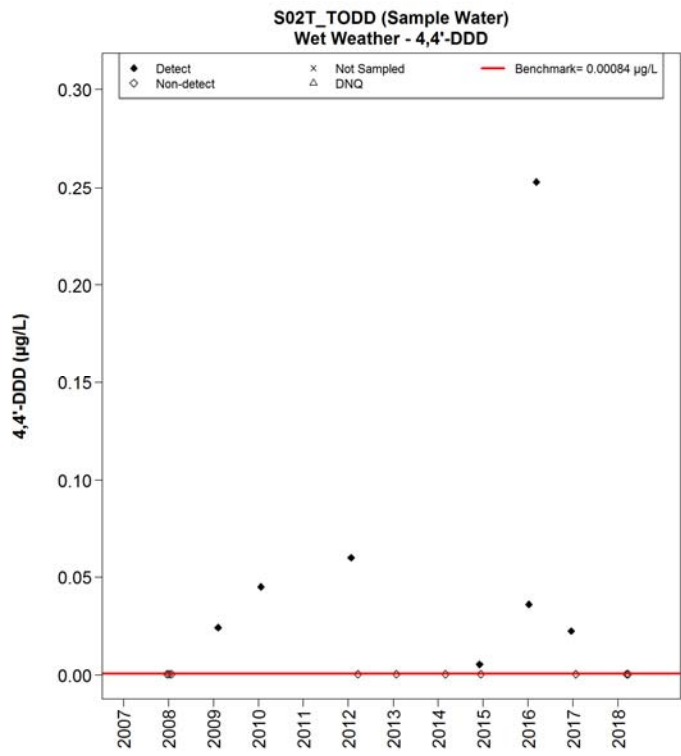


Figure 204. Wet Weather DDD Concentrations at Waiver Benchmark Site S02T_TODD

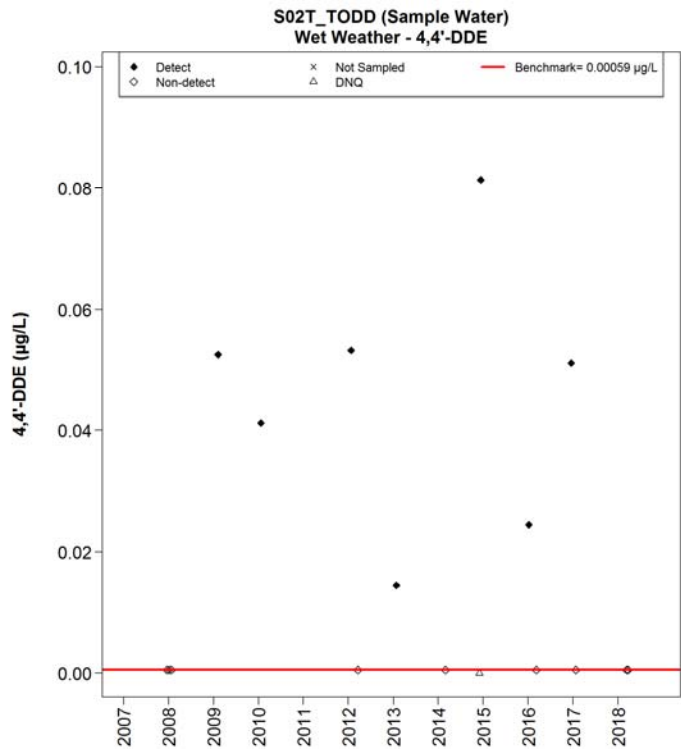


Figure 205. Wet Weather DDE Concentrations at Waiver Benchmark Site S02T_TODD

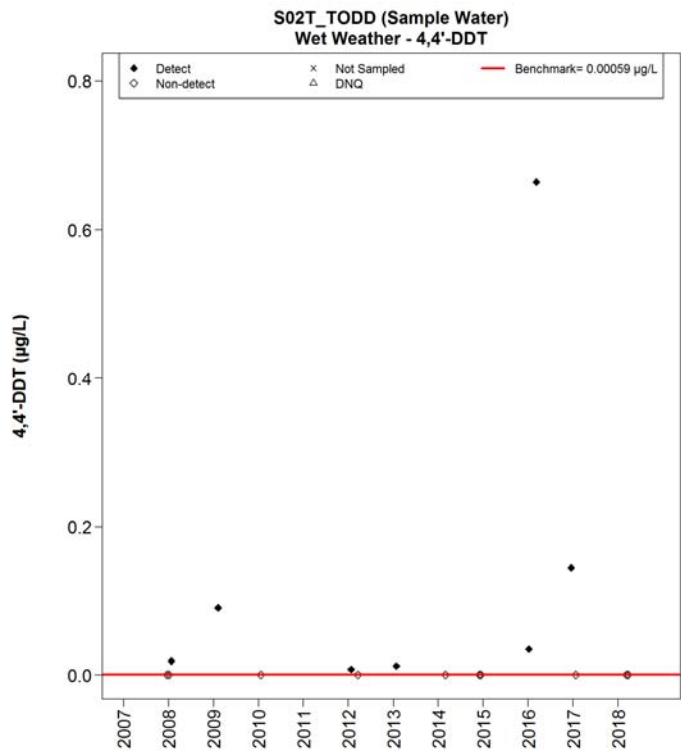


Figure 206. Wet Weather DDT Concentrations at Waiver Benchmark Site S02T_TODD

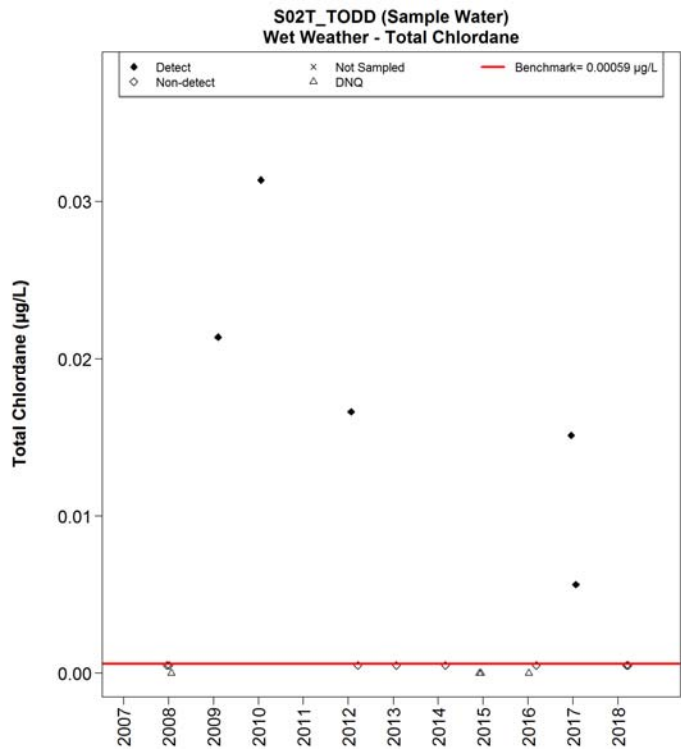


Figure 207. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site S02T_TODD

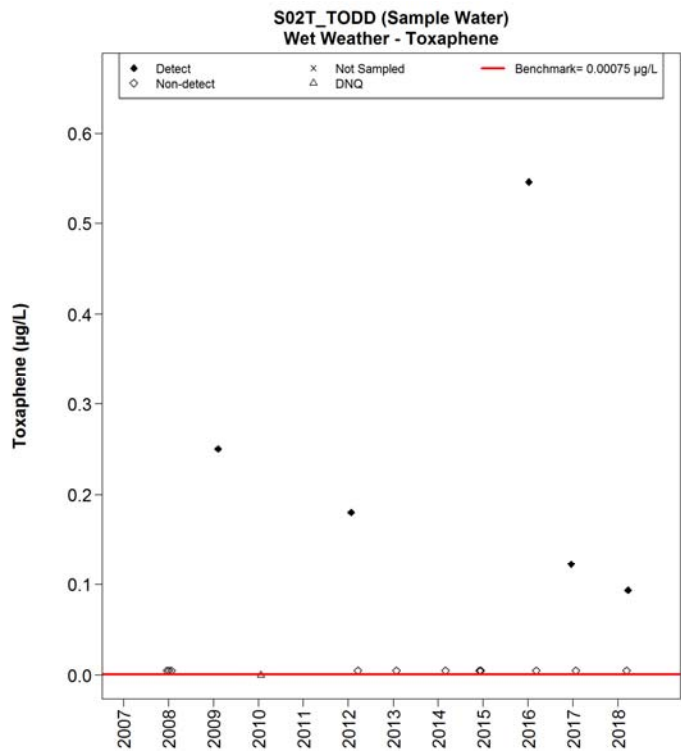


Figure 208. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site S02T_TODD

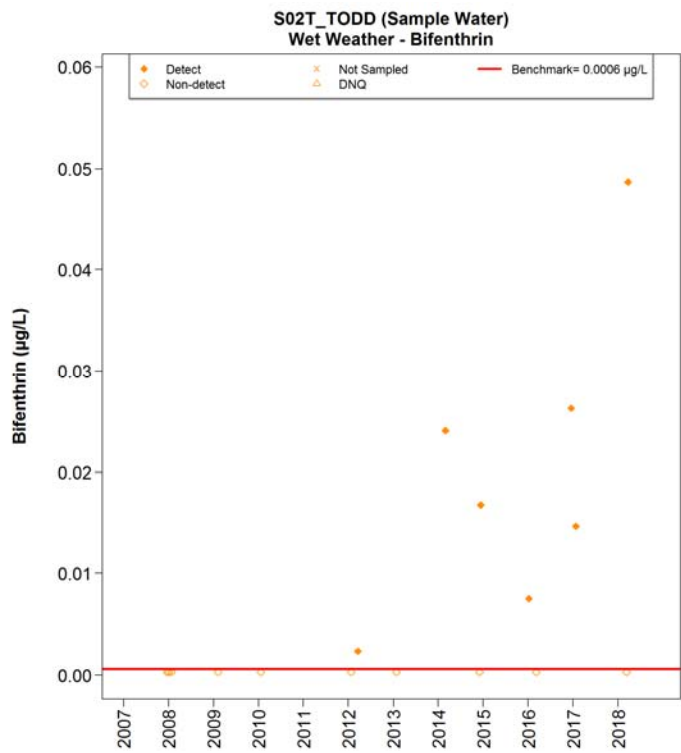


Figure 209. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site S02T_TODD

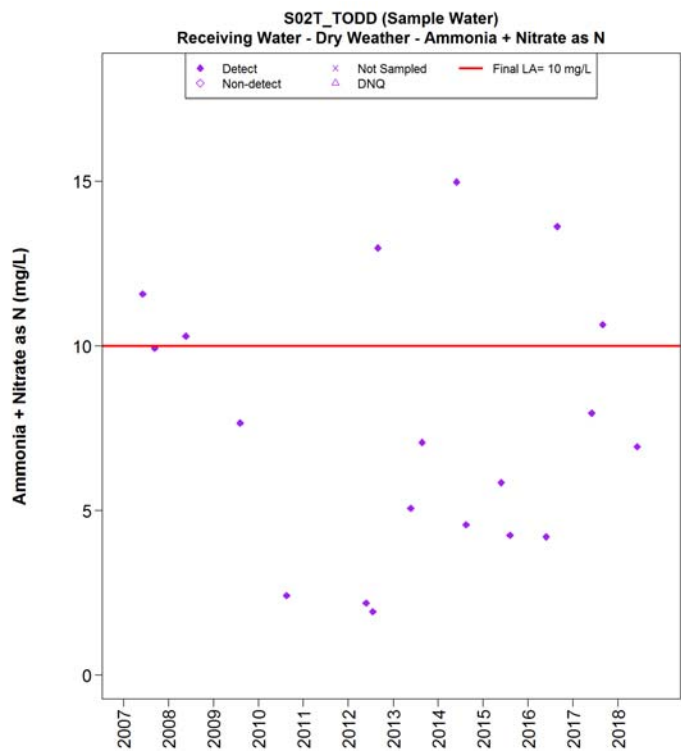


Figure 210. Wet Weather Nitrogen Compounds Concentrations at TMDL LA Site S02T_TODD

Table 111. Summary of Benchmark Exceedance Evaluation for Todd Barranca Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
Bacteria						
<i>E. coli</i>	•		☑			
Nutrients						
Nitrate-N	•		☑			
Ammonia-N + Nitrate-N + Nitrite-N		• ²	☑			
Salts						
TDS	•		☑			
Sulfate	•		☑			
OC Pesticides (Legacy)						
DDD				•		☑
DDE				•		☑
DDT				•		☑
Chlordane				•		☑
Toxaphene				•		☑
OP and Pyrethroid Pesticides (Current)						
Bifenthrin				•		☑

1. VCAILG monitoring site for Waiver benchmarks is S02T_TODD.

2. TMDL LAs for the Santa Clara River Nutrients TMDL were compared to data from S02T_TODD.

Table 112. BMPs for Additional Implementation in the Todd Barranca Responsibility Area

Exceedance Condition					Survey Question #	BMP	% of Total Applicable Surveyed Units		
Bacteria	Nutrients	Salt	Legacy Pesticides	Current Pesticides			S02T_TODD Site Drainage Only	Todd Barranca Responsibility Area	Additional Implementation Needed?
Dry	Dry	Dry	Wet	Wet					
	x		x	x	Crop management ^[a]	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	38%	65%	Yes
x	x	x	x		Irrigation system type ^[a]	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	100%	79%	Yes
	x	x	x		1 ^[a]	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	62%	62%	Yes
	x	x			2 ^[a]	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	73%	79%	Yes
	x	x			3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	42%	25%	Yes
	x				4	Certified nutrient management plan has been prepared for the property	62%	29%	Yes
	x				5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	100%	77%	Yes
	x				6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	100%	93%	Yes
	x				7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	100%	70%	Yes
	x				8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	100%	68%	Yes
	x		x	x	9, 10 ^[a]	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	103%	No
			x	x	11 ^[a]	How much non-cropped area is bare soil	55%	39%	Yes
x	x		x	x	12 ^[a]	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	100%	40%	Yes
x	x	x	x	x	13 ^[a]	Grassed waterways are used	0%	5%	Yes
x	x	x	x	x	14 ^[a]	Vegetated filter strips are used	0%	3%	Yes
				x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	97%	Yes
				x	16	An integrated pest management plan is implemented	65%	90%	Yes
x	x	x	x		18 ^[a]	How many acres produce irrigation runoff	0%	14%	Yes
x	x	x	x	x	19 ^[a]	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	0%	16%	Yes

[a] BMP with potential to reduce sediment runoff or improve irrigation efficiency to achieve LAs for the Santa Clara River Estuary Toxaphene TMDL.

Table 113. Proposed Best Management Practices for the Todd Barranca Responsibility Area

Water Quality Issues					BMPs
Bacteria	Nutrients	Salts	Legacy Pesticides	Current Use Pesticides	
Dry Weather	Dry Weather	Dry Weather	Wet Weather	Wet Weather	
					<i>Source Control BMPs</i>
	X		X	X	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
X	X	X			Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)
	X	X			Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
	X	X			Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration
	X	X			Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
	X				Prepare a certified nutrient management plan for the property
	X				Conduct soil residual nitrate tests and use results to adjust fertilizer application
	X				Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
	X				Analyze irrigation water nitrate and use results to adjust fertilizer application
	X				Adjust fertilizer application to account for nutrients provided by cover crops
	X		X	X	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
			X	X	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel

Water Quality Issues					BMPs
Bacteria	Nutrients	Salts	Legacy Pesticides	Current Use Pesticides	
Dry Weather	Dry Weather	Dry Weather	Wet Weather	Wet Weather	
				x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
				x	Implement an integrated pest management plan
x	x	x			Avoid/prevent irrigation runoff
<i>Structural Non-Treatment BMPs</i>					
x	x		x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	Use grassed waterways
x	x	x	x	x	Use vegetated filter strips
<i>Optional Treatment BMPs</i>					
x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bolded BMPs are required by the Conditional Waiver to the degree appropriate for achieving the Santa Clara River Estuary Toxaphene TMDL.

Ellsworth Barranca Responsibility Area



Figure 211. Ellsworth Barranca Responsibility Area Map

The Ellsworth Barranca responsibility area is illustrated in Figure 211. Compliance with TMDL LAs applicable to this responsibility area are evaluated at the following monitoring sites in the manner described:

- S02T_ELLS is an SCR Nitrogen TMDL Assessment Site and SCR Estuary Toxaphene TMDL Suspended Sediment Assessment Site
- The yellow circle marks the SCR Estuary Toxaphene TMDL Fish Tissue Assessment Area

Table 114. Ellsworth Barranca Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Drainage Area Monitoring Site S02T_ELLS
Assessed Acreage Information	
Total Assessed Acres from Agricultural Parcel List	2,648
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	2,605
Assessed Acres from Agricultural Parcel List belonging to Non Members	43
Irrigated Acreage Information	
VCAILG Member Acreage Reported as Irrigated	802
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.31
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	13
Total Estimated Irrigated Acres (Member plus Non Member)	815
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	98%
Survey Response Information	
Sum Surveyed Irrigated Acres	687
Percent of Total Estimated Irrigated Acres that were Surveyed	84%
Percent of VCAILG Member Irrigated Acres that were Surveyed	86%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 115. Ellsworth Barranca Responsibility Area Crop Types and General Production Practices

Crop or Practice	S02T_ELLS Site Drainage [a]			
	Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018
Crop Type				
Strawberries	-	-	-	-
Blueberries	_*	-	_*	-
Raspberries	-	-	-	-
Row Crop	81	63	15%	9%
Orchard	467	624	85%	91%
Nursery	-	-	-	-
Flower	-	-	-	-
Sod	-	-	-	-
Other	-	-	-	-
Overhead Cover in Production Areas				
Hoop House	-	-	-	-
No Cover	-	63	-	9%
Greenhouse	-	-	-	-
Shade	-	-	-	-
Other	-	-	-	-
Surface Treatments in Production Areas				
Bare Soil	428	413	78%	60%
Cover Crop	23	89	4%	13%
Plastic	-	-	-	-
Weed Cloth	-	-	-	-
Mulch	158	185	29%	27%
Gravel	-	-	-	-
Other	9	-	2%	-
Irrigation Systems in Production Areas				
Drip Only	164	180	30%	26%
Microsprinkler/Drip	-	-	-	-
Microsprinkler	435	507	79%	74%
Overhead Sprinkler	-	-	-	-
Overhead/Drip	9	-	2%	-
Furrow Flood	-	-	-	-
Hand Watering	-	-	-	-
Other	-	-	-	-

[a] Monitoring site drainage area serves as a complete Responsibility Area

* Value for 2017 is for Raspberries & Blueberries combined

Table 116. Ellsworth Barranca Responsibility Area Grower BMPs

Survey Question	Units	S02T_ELLS Site Drainage Only			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018
Irrigation and Salinity Management					
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	536	310	98%	56%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	242	570	44%	102%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	48	44	9%	9%
Nutrient Management					
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	357	90	65%	16%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	36	-	7%	-
Q5a: Are soil residual nitrate tests done?	Acres	202	470	37%	84%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	202	403	37%	72%
Q6: Are leaf/petiole tests conducted?	Acres	520	550	95%	99%
Q7a: Is nitrate measured in fertigation water?	Acres	440	384	80%	69%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	440	332	80%	60%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	14	126	100%	83%
Sediment Management					
Q9: How many cropped acres have a slope greater than 2%?	Acres	244	319	44%	57%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	244	319	100%	100%
Q11: How much non-cropped area is bare soil?	Acres	422	438	77%	25%
Q12a: How many feet of ditches exist?	Feet	4,920	7,120	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	1,920	4,920	39%	69%
Q13a: Are grassed waterways present?	Acres	80	134	14%	24%
Q13b: How many acres drain to grassed waterways?	Acres	45	95	8%	17%
Q14: How many acres are treated by vegetated filter strips?	Acres	32	32	6%	6%
Pest Management					
Q15: Are PCAs used for pesticide management decisions?	Acres	489	498	89%	89%
Q16: Is an IPM Plan being implemented?	Acres	489	493	89%	88%
Q17a: How many acres are organically farmed?	Acres	9	-	2%	-
Q17b: How many acres are conventionally farmed?	Acres	539	558	98%	100%
Runoff Management/Treatment					
Q18: How many acres produce irrigation runoff?	Acres	19	17	3%	3%
Q19: Runoff from how many acres is treated or detained?	Acres	56	33	10%	6%

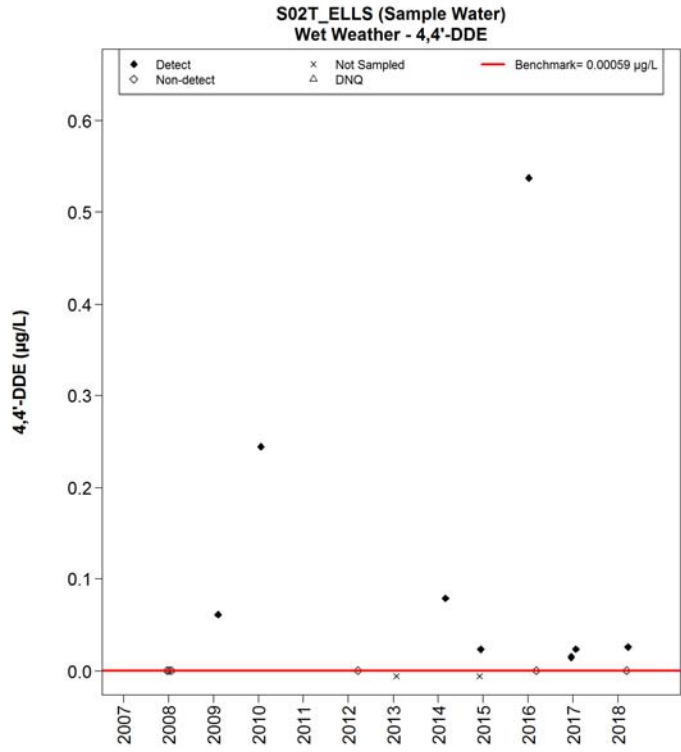


Figure 212. Wet Weather DDE Concentrations at Waiver Benchmark Site S02T_ELLS

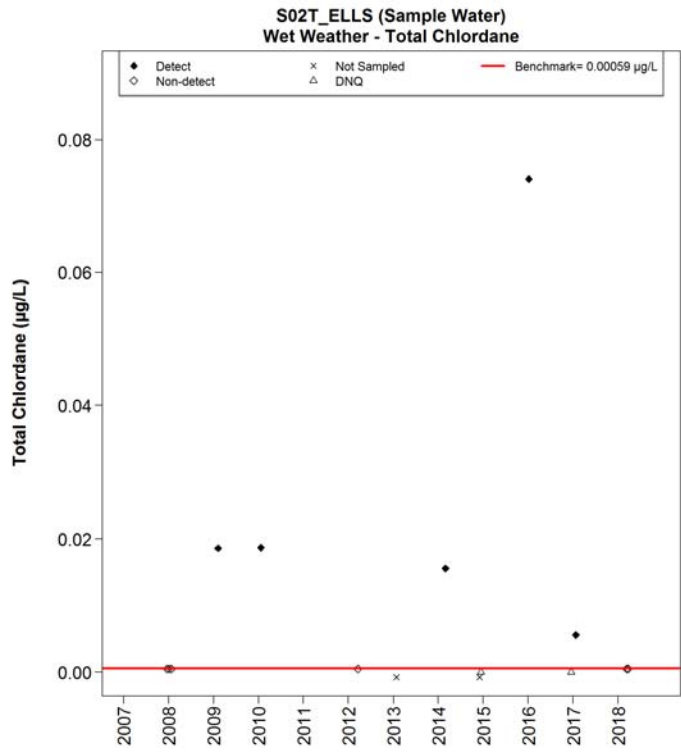


Figure 213. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site S02T_ELLS

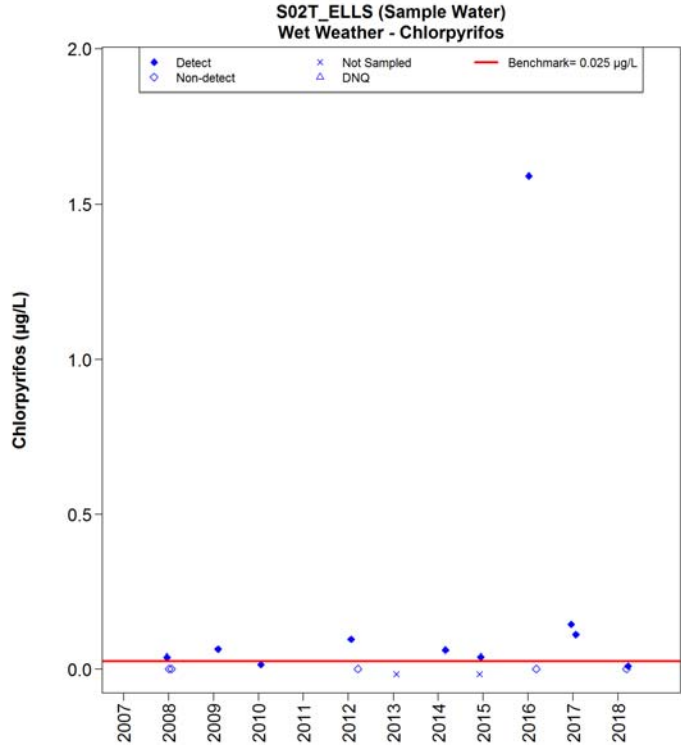


Figure 214. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site S02T_ELLS

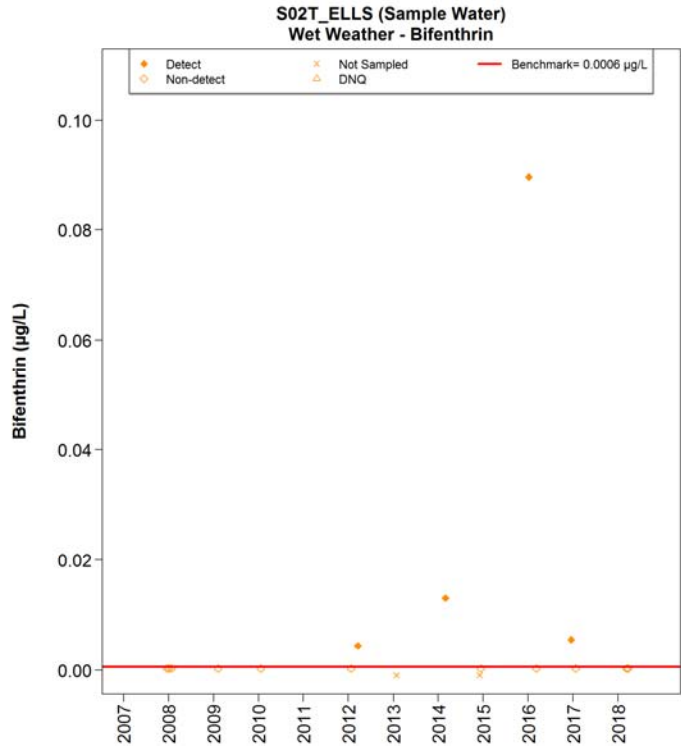


Figure 215. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site S02T_ELLS

Table 117. Summary of Benchmark Exceedance Evaluation for Ellsworth Barranca Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
<i>OC Pesticides (Legacy)</i>						
DDE				•		<input checked="" type="checkbox"/>
Chlordane				•		<input checked="" type="checkbox"/>
<i>OP and Pyrethroid Pesticides (Current)</i>						
Chlorpyrifos				•		<input checked="" type="checkbox"/>
Bifenthrin				•		<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is S02T_ELLS.

Table 118. BMPs for Additional Implementation in the Ellsworth Barranca Responsibility Area

Exceedance Condition		Survey Question #	BMP	% of Total Applicable Surveyed Units	Additional Implementation Needed?
Legacy Pesticides	Current Pesticides				
Wet	Wet			S02T_ELLS Site Drainage	
x	x	Crop management ^[a]	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	40%	Yes
x		Irrigation system type ^[a]	Efficient irrigation system (sum of drip only, microsprinkler then drip, and micro-sprinkler)	100%	No
x		1 ^[a]	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	56%	Yes
x	x	9, 10 ^[a]	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	100%	No
x	x	11 ^[a]	How much non-cropped area is bare soil	25%	Yes
x	x	12 ^[a]	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	69%	Yes
x		13 ^[a]	Grassed waterways are used	17%	Yes
x	x	14 ^[a]	Vegetated filter strips are used	6%	Yes
	x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	89%	Yes
	x	16	An integrated pest management plan is implemented	88%	Yes
x		18 ^[a]	How many acres produce irrigation runoff	3%	Yes
x	x	19 ^[a]	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	6%	Yes

^[a] BMP with potential to reduce sediment runoff or improve irrigation efficiency to achieve LAs for the Santa Clara River Estuary Toxaphene TMDL.

Table 119. Proposed Best Management Practices for the Ellsworth Barranca Responsibility Area

Water Quality Issues		
Legacy Pesticides	Current Use Pesticides	
Wet Weather	Wet Weather	BMPs
<i>Source Control BMPs</i>		
x	x	<p>Reduce bare soil in production area with cover crops, gravel, mulch, etc.</p> <p>Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler) Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.</p>
x	x	<p>Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)</p>
x	x	<p>Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel</p>
	x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
	x	Implement an integrated pest management plan
Avoid/prevent irrigation runoff		
<i>Structural Non-Treatment BMPs</i>		
x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	Use grassed waterways
x	x	Use vegetated filter strips
<i>Optional Treatment BMPs</i>		
x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bolded BMPs are required by the Conditional Waiver to the degree appropriate for achieving the Santa Clara River Estuary Toxaphene TMDL.

Ventura River Inland Responsibility Area

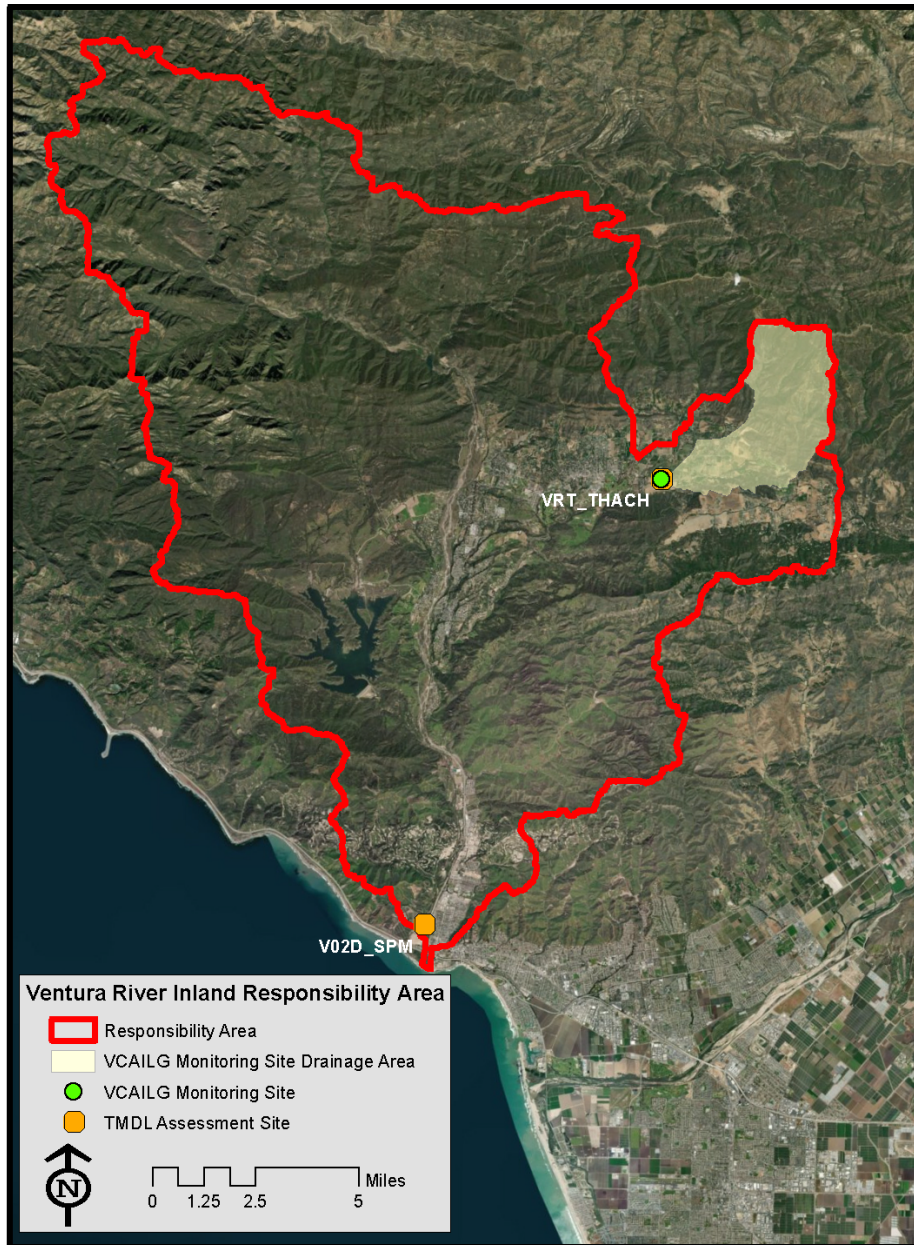


Figure 216. Ventura River Inland Responsibility Area Map

The Ventura River Inland responsibility area is illustrated in Figure 216. The VCAILG monitoring site is also used as a TMDL assessment site for the VR Algae TMDL. Site V02D_SPM is a VR Algae TMDL assessment site.

Table 120. Ventura River Inland Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site VRT_THACH
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	16,720	1,419
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	8,311	151
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	7,560	1,254
Assessed Acres from Agricultural Parcel List belonging to Non Members	700	14
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	2,978	709
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.39	0.57
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	276	8
Total Estimated Irrigated Acres (Member plus Non Member)	3,253	717
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	92%	99%
Survey Response Information		
Sum Surveyed Irrigated Acres	2,423	549
Percent of Total Estimated Irrigated Acres that were Surveyed	74%	77%
Percent of VCAILG Member Irrigated Acres that were Surveyed	81%	77%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 121. VRT-THACH-Inland Responsibility Area Crop Types and General Production Practices

Crop or Practice	VRT_THACH Site Drainage Only				VRT_THACH-Inland Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	3	70	0.2%	3%
Blueberries	_*	-	_*	-	_*	-	_*	-
Raspberries	-	-	-	-	-	-	-	-
Row Crop	-	-	-	-	18	34	1%	1%
Orchard	245	549	99%	100%	1,570	2,225	94%	92%
Nursery	-	-	-	-	-	2	-	0.1%
Flower	-	-	-	-	3	4	0.2%	0.1%
Sod	-	-	-	-	-	2	-	0.1%
Other	2	-	0.8%	-	84	86	5%	4%
Overhead Cover in Production Areas								
Hoop House	342	-	138%	-	677	55	40%	2%
No Cover	135	-	54%	-	634	140	38%	6%
Greenhouse	5	-	2%	-	1	-	-	-
Shade	-	-	-	-	1	1	-	0.04%
Other	10	-	4%	-	29	-	2%	-
Surface Treatments in Production Areas								
Bare Soil	118	165	48%	30%	988	1,035	59%	43%
Cover Crop	19	25	8%	5%	37	81	2%	3%
Plastic	-	-	-	-	8	48	0.5%	2%
Weed Cloth	-	-	-	-	1	3	-	0.1%
Mulch	129	359	52%	65%	576	1,133	34%	47%
Gravel	-	-	-	-	-	-	-	-
Other	11	54	5%	10%	148	213	9%	9%
Irrigation Systems in Production Areas								
Drip Only	12	22	5%	4%	276	281	16%	12%
Microsprinkler/Drip	-	424	-	77%	3	494	0.2%	20%
Microsprinkler	234	287	95%	52%	1,441	1,797	86%	74%
Overhead Sprinkler	2	-	0.8%	-	13	15	0.8%	1%
Overhead/Drip	-	-	-	-	-	-	-	-
Furrow Flood	-	-	-	-	-	18	-	1%
Hand Watering	-	-	-	-	-	1	-	0.04%
Other	-	-	-	-	-	-	-	-

Table 122. Ventura River Inland Responsibility Area Grower BMPs

Survey Question	Units	VRT_THACH Site Drainage Only				VRT_THACH-Inland Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	138	408	56%	74%	1,173	1,778	71%	80%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	163	445	66%	81%	1,367	2,009	81%	89%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	29	52	15%	10%	569	704	40%	35%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	152	153	61%	28%	830	1,112	49%	49%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	111	112	45%	20%	266	505	16%	22%
Q5a: Are soil residual nitrate tests done?	Acres	160	358	65%	65%	967	1,521	58%	67%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	160	358	65%	65%	967	1,505	58%	67%
Q6: Are leaf/petiole tests conducted?	Acres	214	473	97%	88%	1,508	1,931	92%	87%
Q7a: Is nitrate measured in fertigation water?	Acres	142	125	57%	23%	1,171	1,343	70%	59%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	105	125	42%	23%	1,171	1,343	70%	59%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	107	352	63%	80%	322	702	40%	50%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	67	188	27%	34%	866	1,209	52%	53%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	19	244	29%	130%	791	1,230	91%	102%
Q11: How much non-cropped area is bare soil?	Acres	32	96	13%	21%	336	579	20%	14%
Q12a: How many feet of ditches exist?	Feet	5,120	11,115	N/A	N/A	142,271	182,330	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	4,170	8,590	81%	77%	38,010	62,598	27%	34%
Q13a: Are grassed waterways present?	Acres	-	246	-	45%	586	843	35%	37%
Q13b: How many acres drain to grassed waterways?	Acres	-	21	-	4%	323	360	19%	16%
Q14: How many acres are treated by vegetated filter strips?	Acres	25	33	10%	6%	170	237	10%	10%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	218	501	88%	91%	1,558	2,102	93%	93%
Q16: Is an IPM Plan being implemented?	Acres	214	516	87%	94%	1,522	2,079	91%	92%
Q17a: How many acres are organically farmed?	Acres	73	101	30%	18%	101	225	6%	10%
Q17b: How many acres are conventionally farmed?	Acres	174	448	70%	82%	1,576	2,082	94%	92%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	-	-	1	0.1%	0.1%	33	123	2%	5%
Q19: Runoff from how many acres is treated or detained?	Acres	1	249	0.4%	45%	389	739	23%	33%

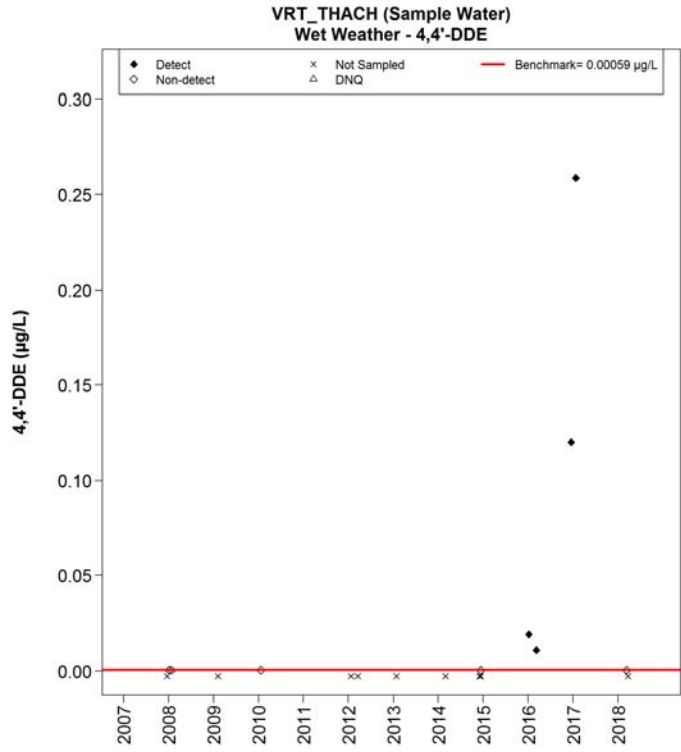


Figure 217. Wet Weather DDE Concentrations at Waiver Benchmark Site VRT_THACH

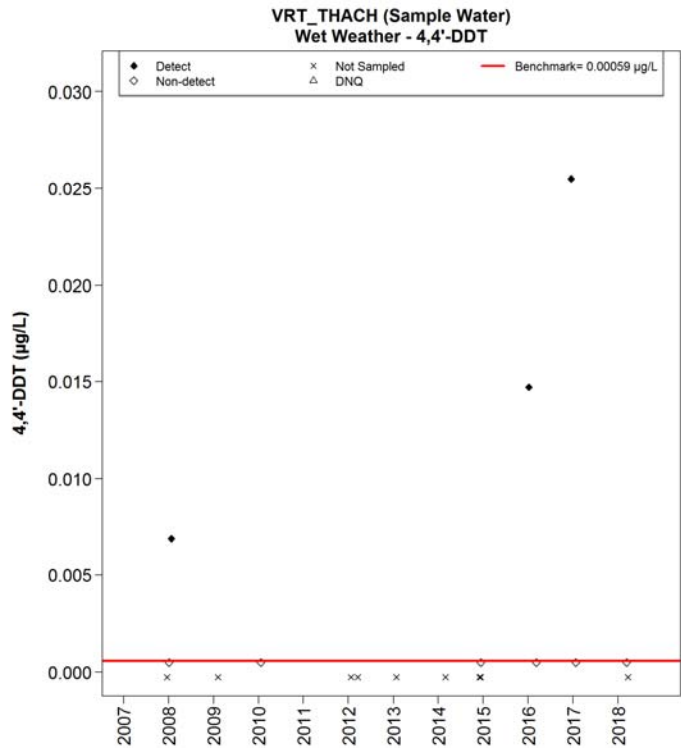


Figure 218. Wet Weather DDT Concentrations at Waiver Benchmark Site VRT_THACH

Table 123. Summary of Benchmark Exceedance Evaluation for Ventura River Inland Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
<i>OC Pesticides (Legacy)</i>						
DDE				•		<input checked="" type="checkbox"/>
DDT				•		<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is VRT_THACH.

Table 124. BMPs for Additional Implementation in the Ventura River Inland Responsibility Area

Exceedance Condition		% of Total Applicable Surveyed Units				
Legacy Pesticides	TMDL-Specific Management Practice	Survey Question #	BMP	VRT_THACH Site Drainage Only	Ventura River Inland Responsibility Area	Additional Implementation Needed?
x		Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	80%	61%	Yes
x		9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	130%	102%	No
x		11	How much non-cropped area is bare soil	21%	14%	Yes
x		12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	77%	34%	Yes
x		13	Grassed waterways are used	45%	37%	Yes
x		14	Vegetated filter strips are used	6%	10%	Yes
x		19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	45%	33%	Yes
	x	4 [a]	Certified nutrient management plan has been prepared for the property	20%	22%	Yes

[a] TMDL-specific management practice for the Ventura River Algae TMDL.

Table 125. Proposed Best Management Practices for the Ventura River Inland Responsibility Area

Water Quality Issues		
Legacy Pesticides		
Wet Weather	TMDL-Specific Management Practice	BMPs
<i>Source Control BMPs</i>		
x		Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x		Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
x		Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
	x	Prepare a certified nutrient management plan for the property by January 2019
<i>Structural Non-Treatment BMPs</i>		
x		Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x		Use grassed waterways
x		Use vegetated filter strips
<i>Optional Treatment BMPs</i>		
x		Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bolded BMPs are required for achieving Ventura River Algae TMDL.

Ventura River Coastal Responsibility Area



Figure 219. Ventura River Coastal Responsibility Area Map

The Ventura River Coastal responsibility area is illustrated in Figure 219. VRT_THACH serves as the Conditional Waiver benchmark beacon site for the responsibility area. No TMDLs apply.

Table 126. Ventura River Coastal Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Responsibility Area [a]	Drainage Area Monitoring Site VRT_THACH [a]
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	3,853	1,419
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [b]	402	151
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	2,517	1,254
Assessed Acres from Agricultural Parcel List belonging to Non Members	811	14
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	751	709
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.30	0.57
Estimated Irrigated Acres in Non Member Agricultural Parcels [c]	242	8
Total Estimated Irrigated Acres (Member plus Non Member)	993	717
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	76%	99%
Survey Response Information		
Sum Surveyed Irrigated Acres	424	549
Percent of Total Estimated Irrigated Acres that were Surveyed	43%	77%
Percent of VCAILG Member Irrigated Acres that were Surveyed	56%	77%

[a] Responsibility area does not include the beacon monitoring site drainage area.

[b] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[c] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 127. Ventura River Coastal Responsibility Area Crop Types and General Production Practices

Crop or Practice	VRT_THACH Site Drainage Only				Ventura River Coastal Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	139	139	41%	33%
Blueberries	_*	-	_*	-	_*	-	_*	-
Raspberries	-	-	-	-	-	-	-	-
Row Crop	-	-	-	-	-	-	-	-
Orchard	245	549	99%	100%	171	253	50%	60%
Nursery	-	-	-	-	16	17	5%	4%
Flower	-	-	-	-	3	3	0.7%	1%
Sod	-	-	-	-	13	13	4%	3%
Other	2	-	0.8%	-	-	-	-	-
Overhead Cover in Production Areas								
Hoop House	342	-	138%	-	-	-	-	-
No Cover	135	-	54%	-	39	157	11%	37%
Greenhouse	5	-	2%	-	-	1	-	0.2%
Shade	-	-	-	-	-	-	-	-
Other	10	-	4%	-	-	-	-	-
Surface Treatments in Production Areas								
Bare Soil	118	165	48%	30%	112	148	33%	35%
Cover Crop	19	25	8%	5%	36	-	11%	-
Plastic	-	-	-	-	139	139	41%	33%
Weed Cloth	-	-	-	-	1	1	0.1%	0.2%
Mulch	129	359	52%	65%	47	112	14%	26%
Gravel	-	-	-	-	-	-	-	-
Other	11	54	5%	10%	7	24	2%	6%
Irrigation Systems in Production Areas								
Drip Only	12	22	5%	4%	24	96	7%	23%
Microsprinkler/Drip	-	424	-	77%	139	139	41%	33%
Microsprinkler	234	287	95%	52%	164	176	48%	41%
Overhead Sprinkler	2	-	0.8%	-	15	15	4%	3%
Overhead/Drip	-	-	-	-	-	-	-	-
Furrow Flood	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-

[a] Responsibility area does not include the beacon monitoring site drainage area.

Table 128. Ventura River Coastal Responsibility Area Grower BMPs

Survey Question	Units	VRT_THACH Site Drainage Only				Ventura River Coastal Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	138	408	56%	74%	179	327	52%	90%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	163	445	66%	81%	207	249	61%	68%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	29	52	15%	10%	-	10	0%	5%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	152	153	61%	28%	294	339	86%	92%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	111	112	45%	20%	100	182	29%	50%
Q5a: Are soil residual nitrate tests done?	Acres	160	358	65%	65%	117	314	34%	85%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	160	358	65%	65%	117	314	34%	85%
Q6: Are leaf/petiole tests conducted?	Acres	214	473	97%	88%	330	354	97%	98%
Q7a: Is nitrate measured in fertigation water?	Acres	142	125	57%	23%	278	277	82%	75%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	105	125	42%	23%	278	277	82%	75%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	107	352	63%	80%	76	39	32%	20%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	67	188	27%	34%	152	256	45%	70%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	19	244	29%	130%	152	254	100%	99%
Q11: How much non-cropped area is bare soil?	Acres	32	96	13%	21%	48	72	14%	6%
Q12a: How many feet of ditches exist?	Feet	5,120	11,115	N/A	N/A	11,100	11,650	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	4,170	8,590	81%	77%	8,550	9,350	77%	80%
Q13a: Are grassed waterways present?	Acres	-	246	-	45%	236	150	69%	41%
Q13b: How many acres drain to grassed waterways?	Acres	-	21	-	4%	56	48	16%	13%
Q14: How many acres are treated by vegetated filter strips?	Acres	25	33	10%	6%	45	44	13%	12%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	218	501	88%	91%	327	277	96%	75%
Q16: Is an IPM Plan being implemented?	Acres	214	516	87%	94%	327	275	96%	75%
Q17a: How many acres are organically farmed?	Acres	73	101	30%	18%	7	26	2%	7%
Q17b: How many acres are conventionally farmed?	Acres	174	448	70%	82%	334	341	98%	93%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	-	1	0.1%	0.1%	7	7	2%	2%
Q19: Runoff from how many acres is treated or detained?	Acres	1	249	0.4%	45%	210	206	62%	56%

[a] Responsibility area does not include the beacon monitoring site drainage area.

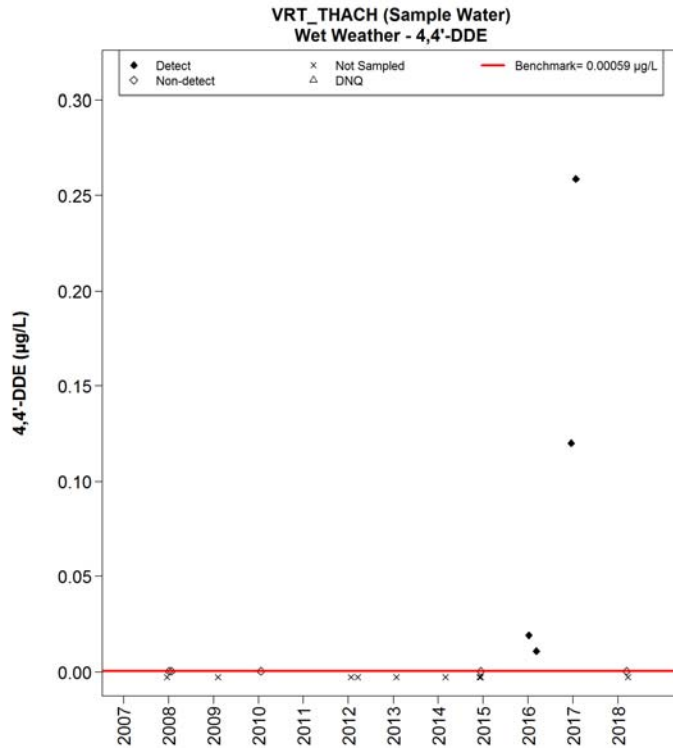


Figure 220. Wet Weather DDE Concentrations at Waiver Benchmark Site VRT_THACH

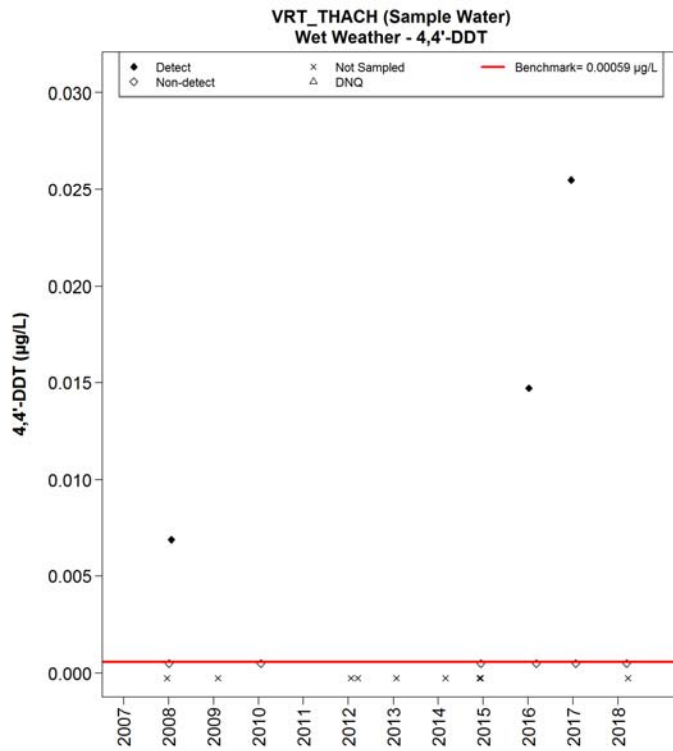


Figure 221. Wet Weather DDT Concentrations at Waiver Benchmark Site VRT_THACH

Table 129. Summary of Benchmark Exceedance Evaluation for Ventura River Coastal Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
OC Pesticides (Legacy)						
DDE				•		<input checked="" type="checkbox"/>
DDT				•		<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is VRT_THACH.

Table 130. BMPs for Additional Implementation in the Ventura River Coastal Responsibility Area

Exceedance Condition		BMP	% of Total Applicable Surveyed Units		Additional Implementation Needed? [b]
Legacy Pesticides			VRT_THACH Site Drainage [a]	Ventura River Coastal Responsibility Area [a]	
Wet	Survey Question #				
x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	80%	65%	Yes
x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	130%	99%	No [a]
x	11	How much non-cropped area is bare soil	21%	6%	Yes
x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	77%	80%	Yes
x	13	Grassed waterways are used	45%	41%	Yes
x	14	Vegetated filter strips are used	6%	12%	Yes
x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	45%	56%	Yes

[a] Responsibility area does not include the beacon monitoring site drainage area.

[b] Only BMP implementation in the responsibility area is considered because the beacon site drainage is not included in the responsibility area.

Table 131. Proposed Best Management Practices for the Ventura River Coastal Responsibility Area

Water Quality Issues	
Legacy Pesticides	
Wet Weather	BMPs
<i>Source Control BMPs</i>	
x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
x	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
x	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
<i>Structural Non-Treatment BMPs</i>	
x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	Use grassed waterways
x	Use vegetated filter strips
<i>Optional Treatment BMPs</i>	
x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

San Antonio Creek Responsibility Area

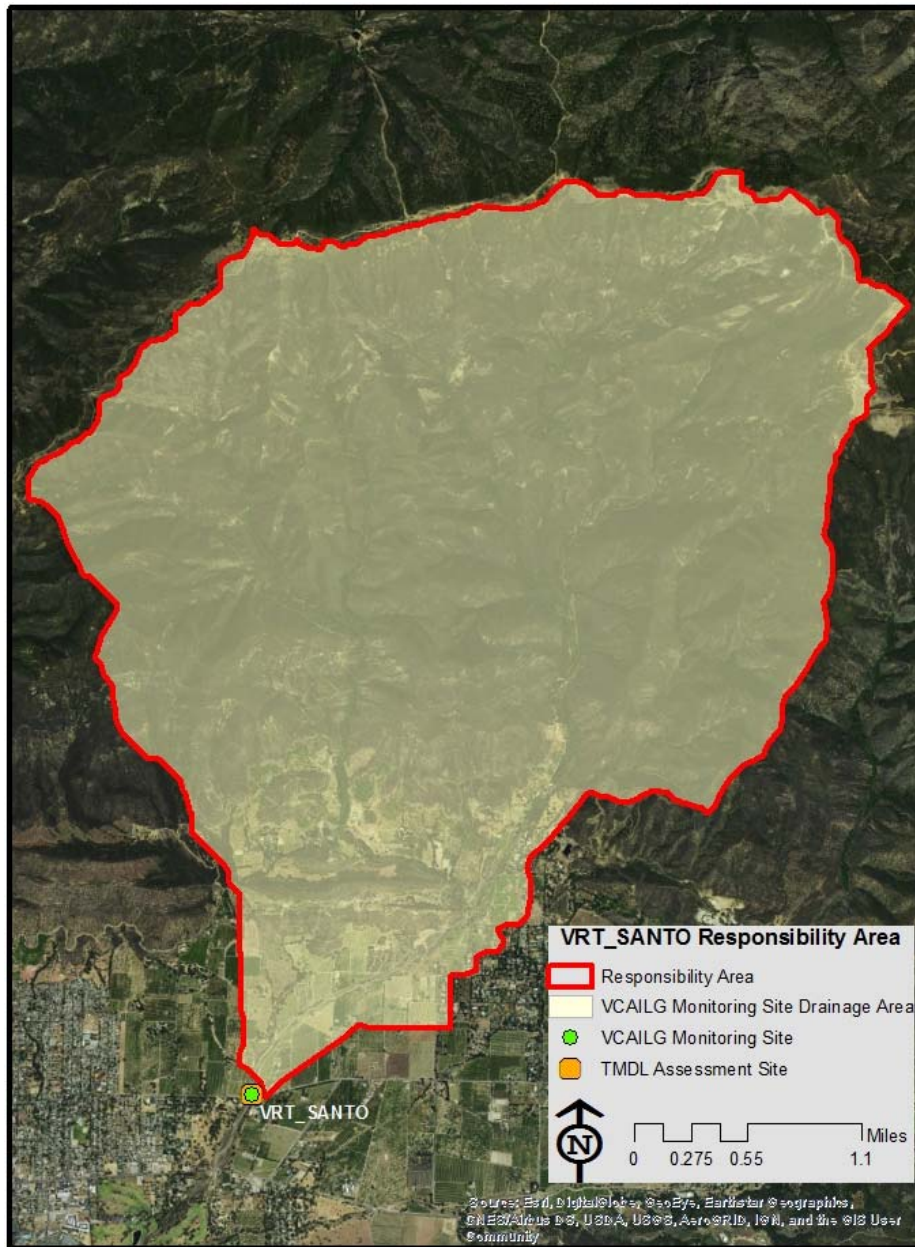


Figure 222. San Antonio Creek Responsibility Area Map

The San Antonio Creek responsibility area is illustrated in Figure 222. The VCAILG monitoring site is also used as a TMDL assessment site for the VR Algae TMDL.

Table 132. San Antonio Creek Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Drainage Area Monitoring Site VRT_SANTO
Assessed Acreage Information	
Total Assessed Acres from Agricultural Parcel List	1,061
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	10
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	929
Assessed Acres from Agricultural Parcel List belonging to Non Members	121
Irrigated Acreage Information	
VCAILG Member Acreage Reported as Irrigated	510
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.55
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	67
Total Estimated Irrigated Acres (Member plus Non Member)	576
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	88%
Survey Response Information	
Sum Surveyed Irrigated Acres	336
Percent of Total Estimated Irrigated Acres that were Surveyed	58%
Percent of VCAILG Member Irrigated Acres that were Surveyed	66%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 133. VRT_SANTO Drainage Area Crop Types and General Production Practices

Crop or Practice	VRT_SANTO Site Drainage [a]			
	Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018
Crop Type				
Strawberries	-	-	-	-
Blueberries	_*	-	_*	-
Raspberries	-	-	-	-
Row Crop	-	-	-	-
Orchard	327	336	100%	100%
Nursery	-	-	-	-
Flower	-	-	-	-
Sod	-	-	-	-
Other	-	-	-	-
Overhead Cover in Production Areas				
Hoop House	1	-	0.2%	-
No Cover	206	-	63%	-
Greenhouse	1	-	0.2%	-
Shade	2	-	0.5%	-
Other	-	-	-	-
Surface Treatments in Production Areas				
Bare Soil	206	212	63%	63%
Cover Crop	6	5	2%	1%
Plastic	-	-	-	-
Weed Cloth	-	-	-	-
Mulch	91	113	28%	34%
Gravel	-	-	-	-
Other	35	14	11%	4%
Irrigation Systems in Production Areas				
Drip Only	17	11	5%	3%
Microsprinkler/Drip	-	-	-	-
Microsprinkler	310	324	95%	97%
Overhead Sprinkler	-	-	-	-
Overhead/Drip	-	-	-	-
Furrow Flood	-	-	-	-
Hand Watering	-	-	-	-
Other	-	-	-	-

[a] Monitoring site drainage area serves as a complete Responsibility Area.

* Value for 2017 is for Blueberries & Raspberries combined

Table 134. VRT_SANTO Drainage Area Grower BMPs

Survey Question	Units	VRT_SANTO Site Drainage [a]			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018
Irrigation and Salinity Management					
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	203	211	62%	63%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	308	317	94%	94%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	6	9	3%	4%
Nutrient Management					
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	106	115	32%	34%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	6	15	2%	4%
Q5a: Are soil residual nitrate tests done?	Acres	162	191	49%	57%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	162	191	49%	57%
Q6: Are leaf/petiole tests conducted?	Acres	324	333	99%	99%
Q7a: Is nitrate measured in fertigation water?	Acres	267	276	82%	82%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	267	276	82%	82%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	137	135	67%	73%
Sediment Management					
Q9: How many cropped acres have a slope greater than 2%?	Acres	175	180	53%	54%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	32	42	18%	23%
Q11: How much non-cropped area is bare soil?	Acres	24	19	7%	8%
Q12a: How many feet of ditches exist?	Feet	10,776	16,731	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	7,885	14,135	73%	84%
Q13a: Are grassed waterways present?	Acres	22	22	7%	7%
Q13b: How many acres drain to grassed waterways?	Acres	5	17	2%	5%
Q14: How many acres are treated by vegetated filter strips?	Acres	2	2	0.6%	1%
Pest Management					
Q15: Are PCAs used for pesticide management decisions?	Acres	310	319	95%	95%
Q16: Is an IPM Plan being implemented?	Acres	327	336	100%	100%
Q17a: How many acres are organically farmed?	Acres	2	-	1%	-
Q17b: How many acres are conventionally farmed?	Acres	325	336	99%	100%
Runoff Management/Treatment					
Q18: How many acres produce irrigation runoff?	Acres	-	-	-	-
Q19: Runoff from how many acres is treated or detained?	Acres	34	36	10%	11%

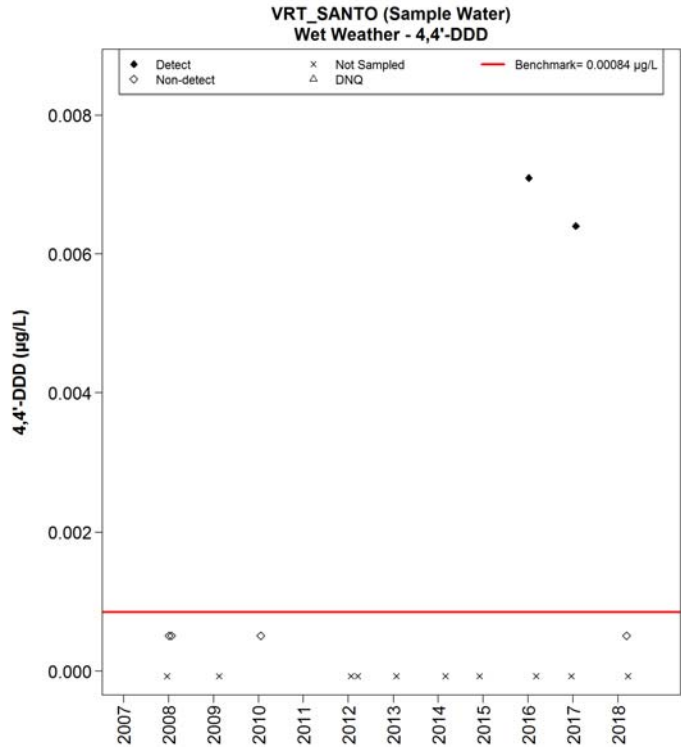


Figure 223. Wet Weather DDD Concentrations at Waiver Benchmark Site VRT_SANTO

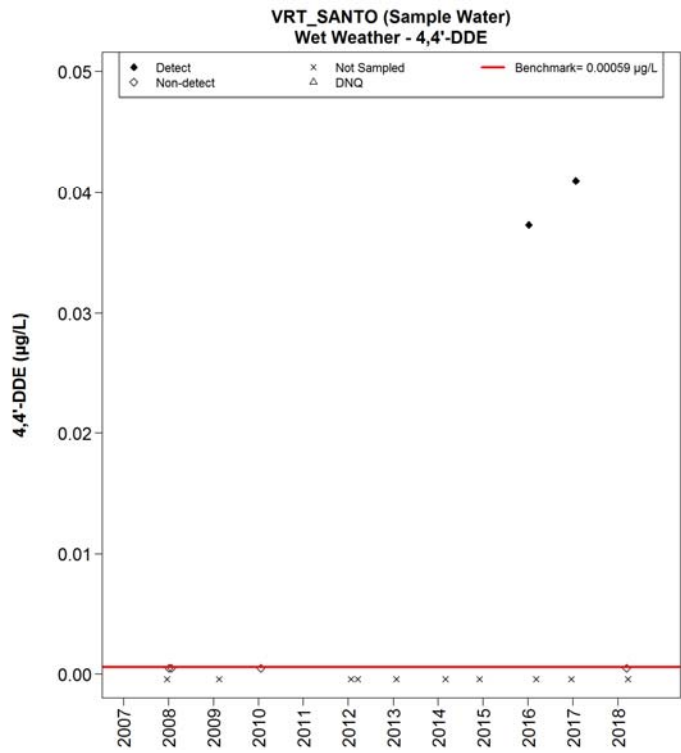


Figure 224. Wet Weather DDE Concentrations at Waiver Benchmark Site VRT_SANTO

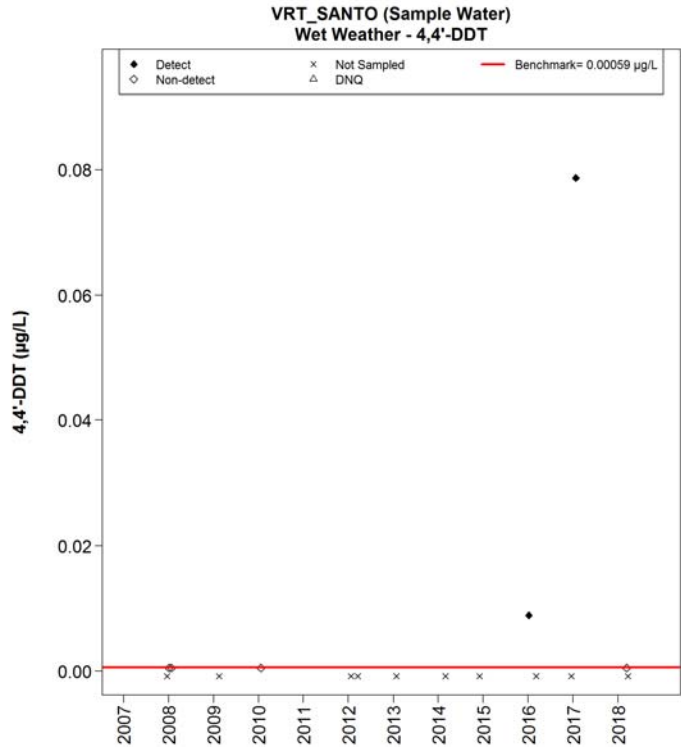


Figure 225. Wet Weather DDT Concentrations at Waiver Benchmark Site VRT_SANTO

Table 135. Summary of Benchmark Exceedance Evaluation for San Antonio Creek Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances	TMDL LA Site Exceedances	Review Implementation and Plan BMPs
OC Pesticides (Legacy)						
DDD				•		<input checked="" type="checkbox"/>
DDE				•		<input checked="" type="checkbox"/>
DDT				•		<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is VRT_SANTO.

Table 136. BMPs for Additional Implementation in the San Antonio Creek Responsibility Area

Exceedance Condition						% of Total Applicable Surveyed Units	
Legacy Pesticides		TMDL-Specific Management Practice	Survey Question #	BMP	VRT_SANTO Site Drainage	Additional Implementation Needed?	
Wet							
x			Crop Management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	39%	Yes	
x	x		4 [a]	Certified nutrient management plan has been prepared for the property	2%	Yes	
x			9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	23%	Yes	
x			11	How much non-cropped area is bare soil	8%	Yes	
x			12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	84%	Yes	
x			13	Grassed waterways are used	7%	Yes	
x			14	Vegetated filter strips are used	1%	Yes	
x			19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	11%	Yes	

1. [a] TMDL-specific management practice for the Ventura River Algae TMDL.

Table 137. Proposed Best Management Practices for the San Antonio Creek Responsibility Area

Water Quality Issues		TMDL-Specific Management Practice	BMPs
Legacy Pesticides			
Wet Weather			
<i>Source Control BMPs</i>			
x			Reduce bare soil in production area with cover crops, gravel, mulch, etc.
		x	Prepare a certified nutrient management plan for the property
x			Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
x			Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
<i>Structural Non-Treatment BMPs</i>			
x			Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x			Use grassed waterways
x			Use vegetated filter strips
<i>Optional Treatment BMPs</i>			
x			Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bolded BMPs are required for achieving Ventura River Algae TMDL.

McGrath Lake Coastal Responsibility Area

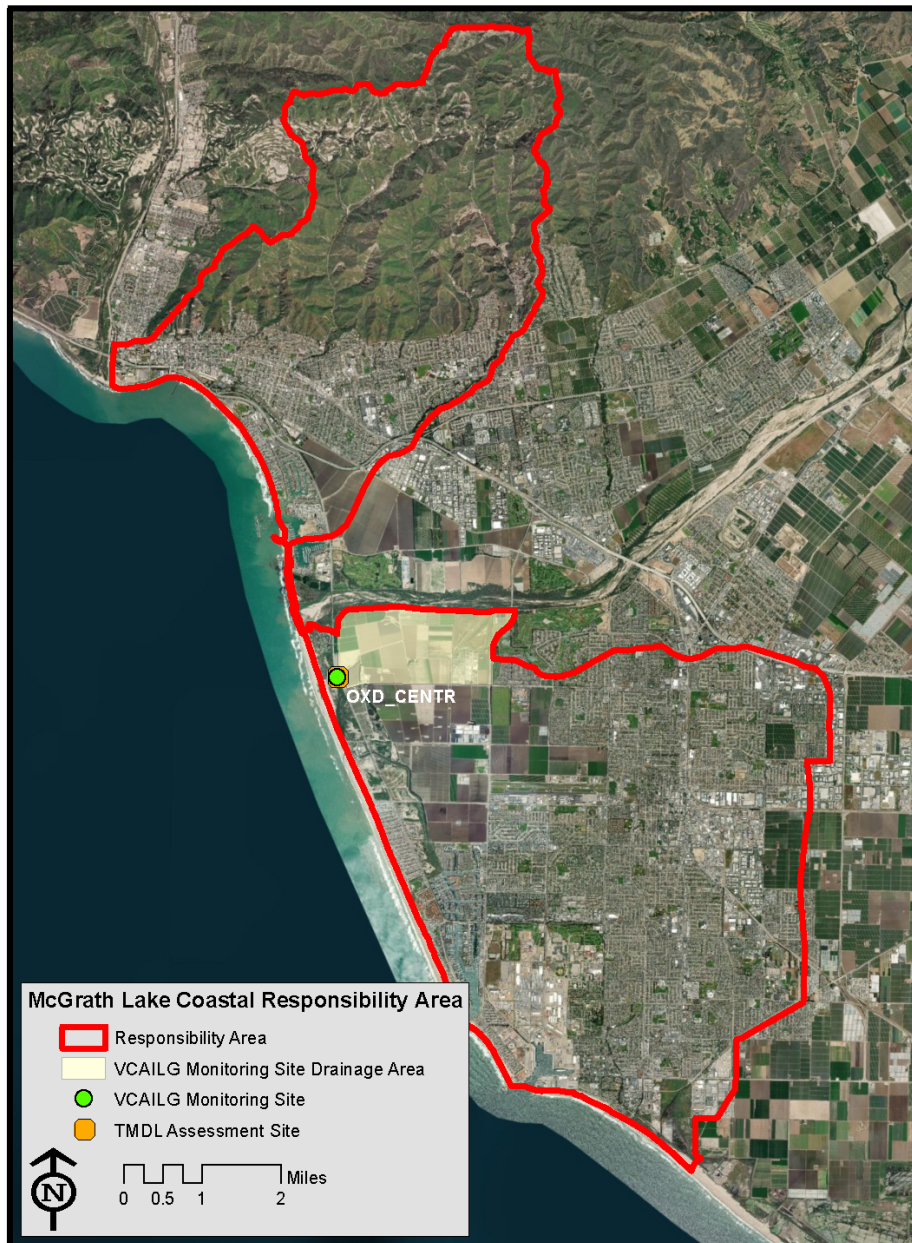


Figure 226. McGrath Lake Coastal Responsibility Area Map

The McGrath Lake Coastal responsibility area is illustrated in Figure 226. The VCAILG monitoring site also serves as a TMDL assessment site for the McGrath Lake Pesticides, PCBs, and Sediment Toxicity TMDL.

Table 138. McGrath Lake Coastal Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Entire Responsibility Area	Drainage Area Monitoring Site OXD_CENTR
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	5,766	1,075
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [a]	94	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	5,019	1,074
Assessed Acres from Agricultural Parcel List belonging to Non Members	653	0
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	3,539	855
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.71	0.80
Estimated Irrigated Acres in Non Member Agricultural Parcels [b]	460	0
Total Estimated Irrigated Acres (Member plus Non Member)	3,999	855
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	88%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	3,163	855
Percent of Total Estimated Irrigated Acres that were Surveyed	79%	100%
Percent of VCAILG Member Irrigated Acres that were Surveyed	89%	100%

[a] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[b] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 139. McGrath Lake Coastal Responsibility Area Crop Types and General Production Practices

Crop or Practice	OXD_CENTR Site Drainage Only				OXD_CENTR Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	5	285	10%	33%	1,568	1,879	76%	59%
Blueberries	_*	-	_*	-	_*	-	_*	-
Raspberries	-	-	-	-	-	-	-	-
Row Crop	40	473	90%	55%	297	1,020	14%	32%
Orchard	-	-	-	-	141	127	7%	4%
Nursery	-	19	-	2%	15	27	0.7%	1%
Flower	-	79	-	9%	31	109	1%	3%
Sod	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Overhead Cover in Production Areas								
Hoop House	-	29	-	3%	125	151	6%	5%
No Cover	-	788	-	92%	142	2,832	7%	90%
Greenhouse	-	37	-	4%	2	52	0.1%	2%
Shade	-	1	-	0.1%	2	1	0.1%	0.03%
Other	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas								
Bare Soil	44	549	100%	64%	678	1,265	33%	40%
Cover Crop	-	-	-	-	686	686	33%	22%
Plastic	-	285	-	33%	803	1,039	39%	33%
Weed Cloth	-	21	-	2%	4	25	0.2%	1%
Mulch	-	-	-	-	1	188	0.1%	6%
Gravel	-	-	-	-	15	-	0.7%	-
Other	-	1	-	0.1%	62	1	3%	0.03%
Irrigation Systems in Production Areas								
Drip Only	3	436	7%	51%	432	895	21%	28%
Microsprinkler/Drip	2	285	3%	33%	851	1,270	42%	40%
Microsprinkler	2	20	3%	2%	148	42	7%	1.3%
Overhead Sprinkler	3	15	7%	2%	39	28	2%	0.9%
Overhead/Drip	35	98	80%	11%	733	926	36%	29%
Furrow Flood	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	5	-	0.2%	-
Other	-	-	-	-	-	-	-	-

Table 140. McGrath Lake Coastal Responsibility Area Grower BMPs

Survey Question	Units	OXD_CENTR Site Drainage Only				OXD_CENTR Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	44	113	100%	14%	1,799	2,005	88%	69%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	40	433	90%	55%	1,364	2,132	67%	73%
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	35	478	80%	61%	1,446	2,216	76%	78%
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	-	-	-	-	515	800	25%	27%
Q4b: Is it a Certified Nutrient Management Plan?	Acres	-	-	-	-	386	528	19%	18%
Q5a: Are soil residual nitrate tests done?	Acres	35	752	80%	95%	1,682	2,619	82%	90%
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	35	752	80%	95%	1,682	2,619	82%	90%
Q6: Are leaf/petiole tests conducted?	Acres	-	691	-	88%	1,569	2,212	77%	83%
Q7a: Is nitrate measured in fertigation water?	Acres	35	108	80%	14%	1,246	1,490	61%	51%
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	35	108	80%	14%	1,246	1,490	61%	51%
Q8: Is fertilizer adjusted based on nutrients provided by cover crops	Acres	9	19	100%	5%	1,165	1,472	98%	79%
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	-	19	-	2%	233	252	11%	9%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	-	-	-	-	231	231	99%	92%
Q11: How much non-cropped area is bare soil?	Acres	6	11	14%	5%	99	135	5%	9%
Q12a: How many feet of ditches exist?	Feet	5,300	20,375	N/A	N/A	105,765	149,362	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	5,000	5,000	94%	25%	23,925	45,225	23%	30%
Q13a: Are grassed waterways present?	Acres	-	-	-	-	277	293	14%	10%
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	193	199	9%	7%
Q14: How many acres are treated by vegetated filter strips?	Acres	-	-	-	-	179	200	9%	7%
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	44	788	100%	100%	2,040	2,905	99%	100%
Q16: Is an IPM Plan being implemented?	Acres	35	478	80%	61%	2,031	2,604	99%	89%
Q17a: How many acres are organically farmed?	Acres	-	-	-	-	115	123	6%	4%
Q17b: How many acres are conventionally farmed?	Acres	44	788	100%	100%	1,936	2,795	94%	96%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	9	163	20%	21%	739	829	36%	28%
Q19: Runoff from how many acres is treated or detained?	Acres	35	108	80%	14%	753	846	37%	29%

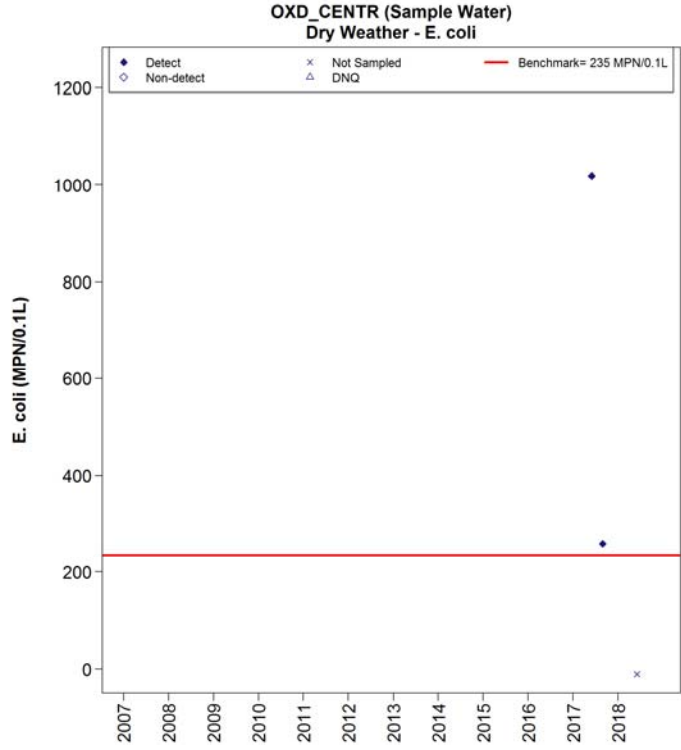


Figure 227. Dry Weather *E. coli* Concentrations at Waiver Benchmark Site OXD_CENTR

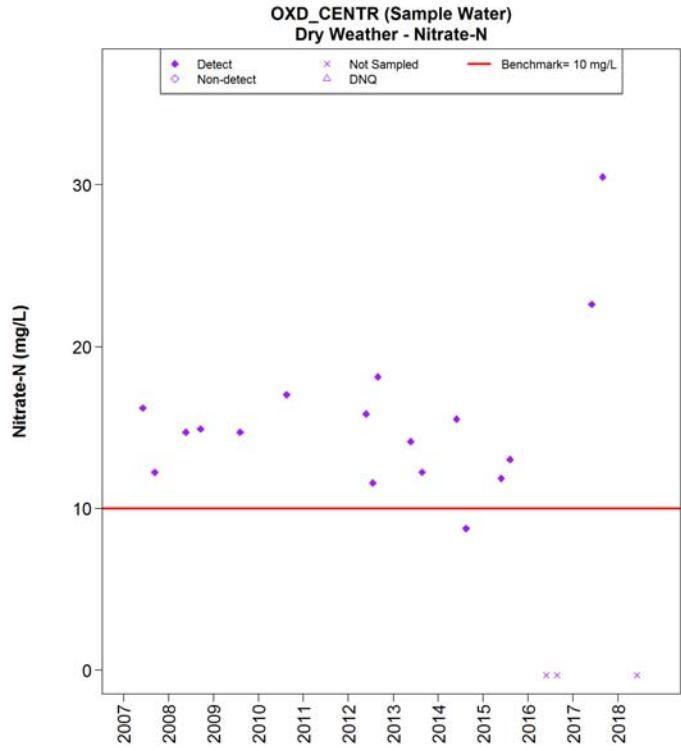


Figure 228. Dry Weather Nitrate-N Concentrations at Waiver Benchmark Site OXD_CENTR

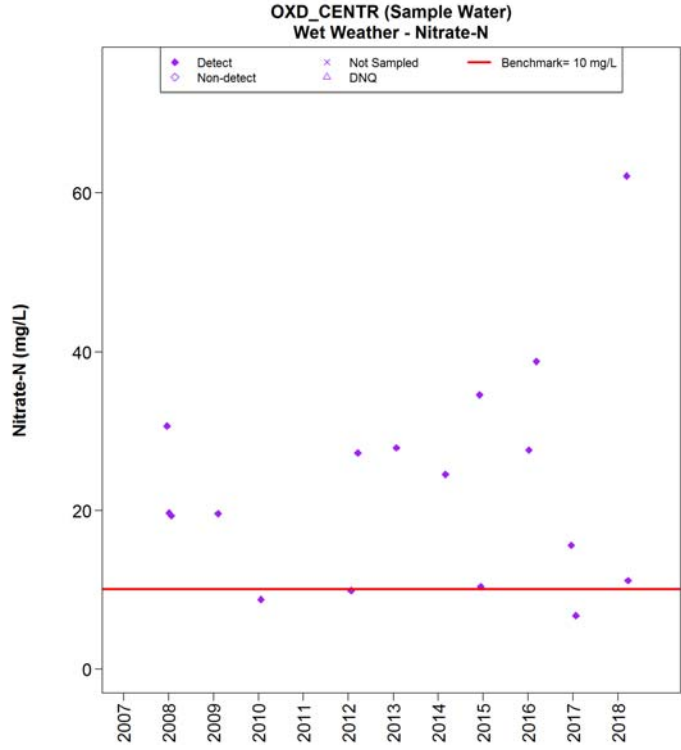


Figure 229. Wet Weather Nitrate-N Concentrations at Waiver Benchmark Site OXD_CENTR

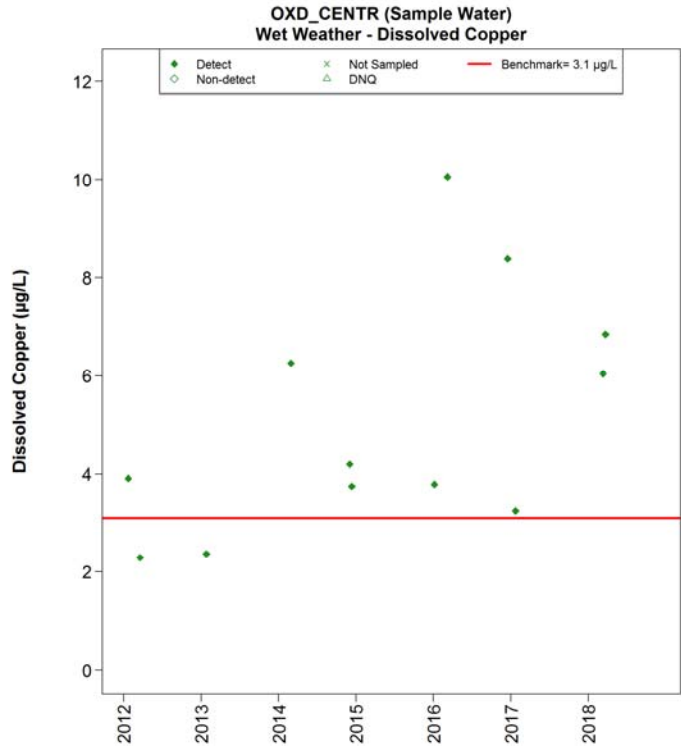


Figure 230. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site OXD_CENTR

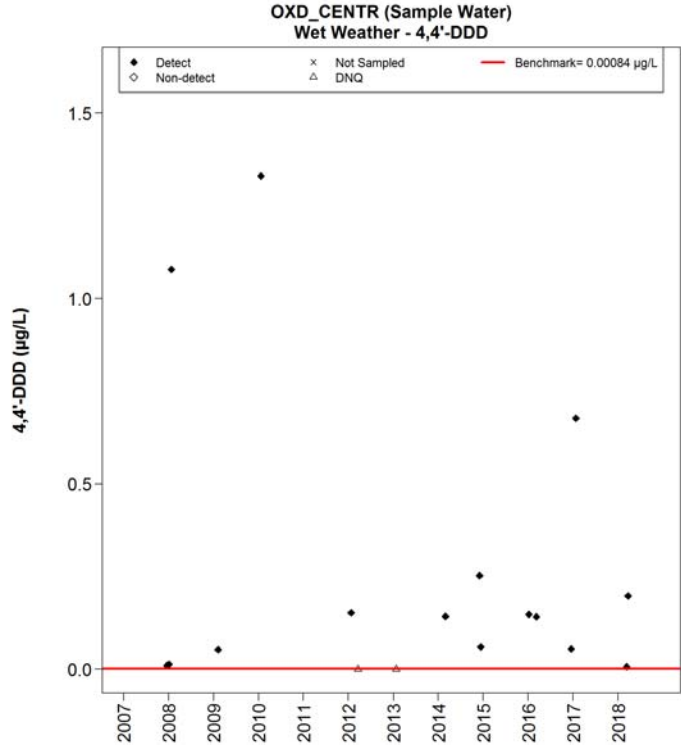


Figure 231. Wet Weather DDD Concentrations at Waiver Benchmark Site and TMDL LA Site OXD_CENTR

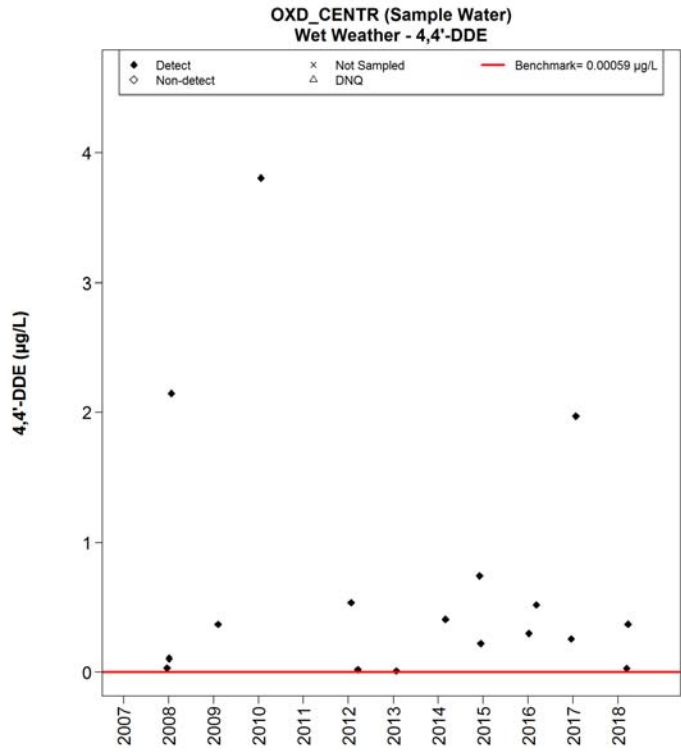


Figure 232. Wet Weather DDE Concentrations at Waiver Benchmark Site and TMDL LA Site OXD_CENTR

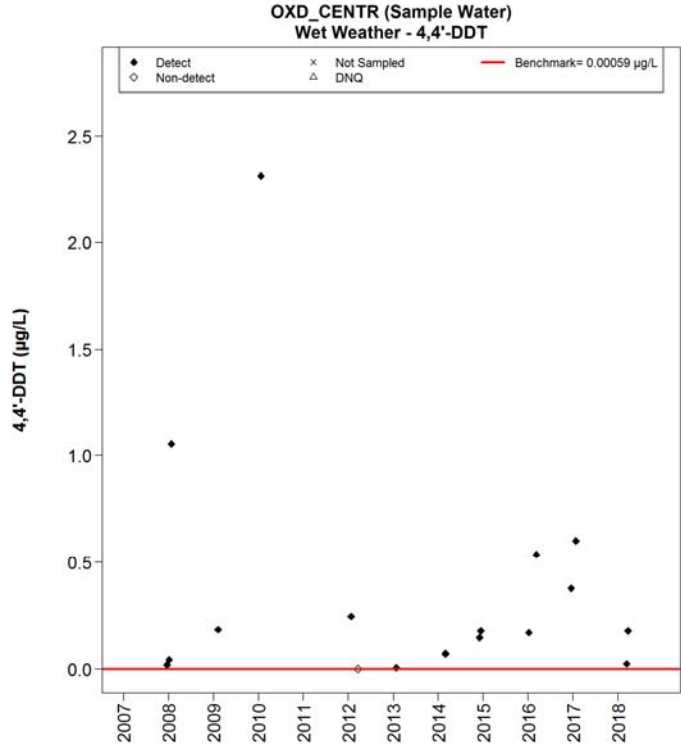


Figure 233. Wet Weather DDT Concentrations at Waiver Benchmark Site and TMDL LA Site OXD_CENTR

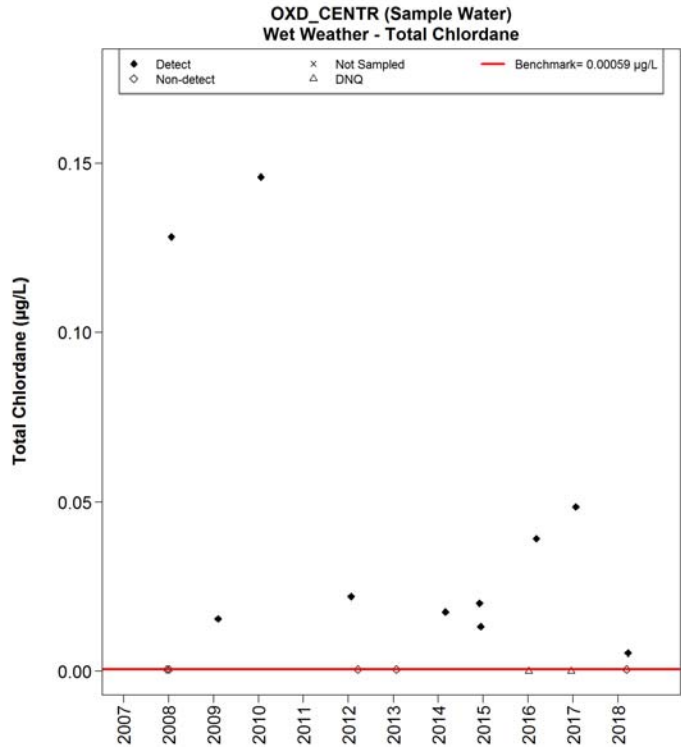


Figure 234. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site OXD_CENTR

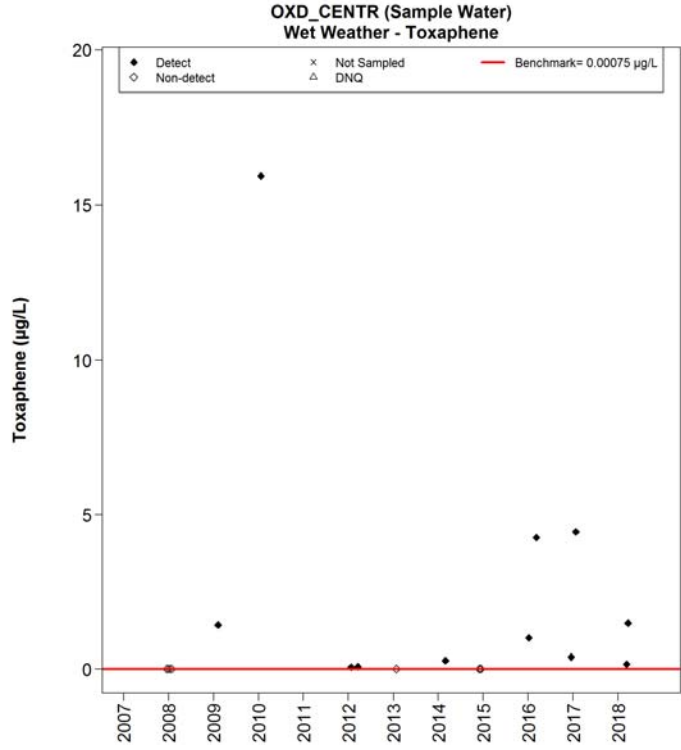


Figure 235. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site OXD_CENTR

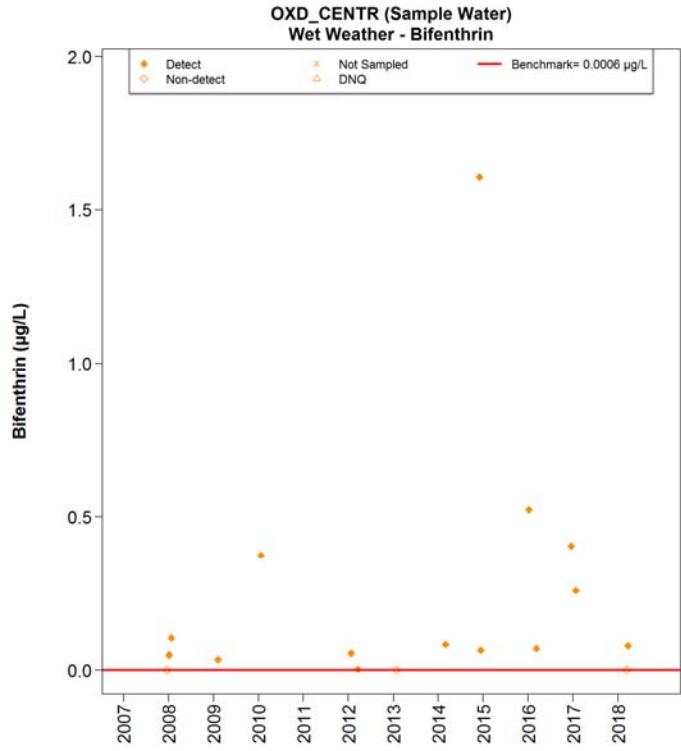


Figure 236. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site OXD_CENTR

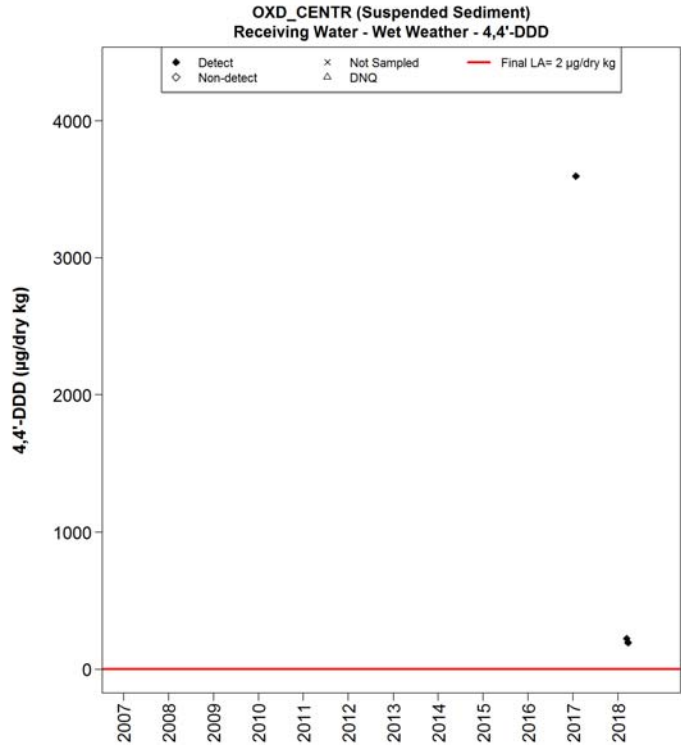


Figure 237. Wet Weather DDD Concentrations at TMDL LA Site OXD_CENTR

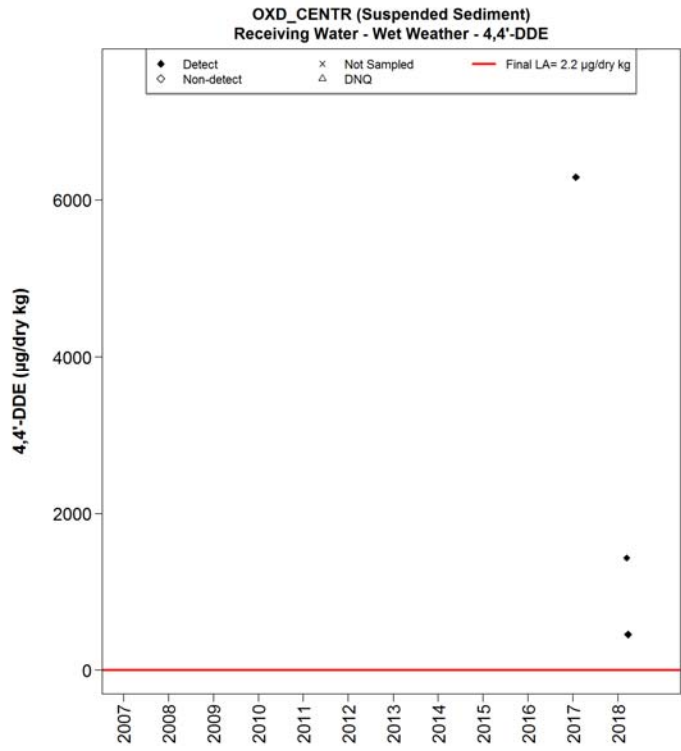


Figure 238. Wet Weather DDE Concentrations at TMDL LA Site OXD_CENTR

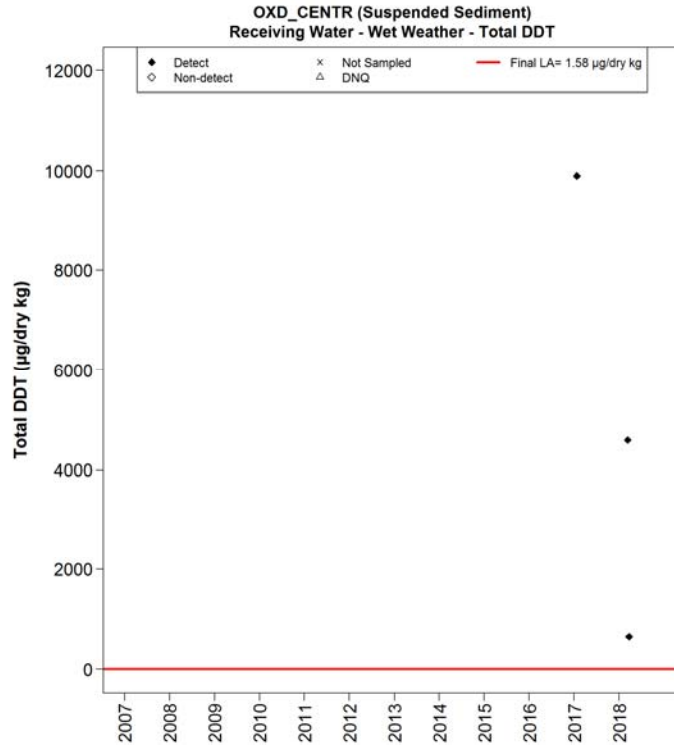


Figure 239. Wet Weather Total DDT Concentrations at TMDL LA Site OXD_CENTR

Table 141. Summary of Benchmark Exceedance Evaluation for McGrath Lake Coastal Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances ¹	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances ^{1,3}	Review Implementation and Plan BMPs ⁴
Bacteria						
<i>E. coli</i>	•		<input checked="" type="checkbox"/>			
Nutrients						
Nitrate-N	•		<input checked="" type="checkbox"/>	•		<input checked="" type="checkbox"/>
Metals and Selenium						
Dissolved Copper				•		<input checked="" type="checkbox"/>
OC Pesticides (Legacy)						
DDD				•	• 2,5	<input checked="" type="checkbox"/>
DDE				•	• 2,5	<input checked="" type="checkbox"/>
DDT				•	• 2,6	<input checked="" type="checkbox"/>
Chlordane				•		<input checked="" type="checkbox"/>
Toxaphene				•		<input checked="" type="checkbox"/>
OP and Pyrethroid Pesticides (Current)						
Bifenthrin				•		<input checked="" type="checkbox"/>

1. The monitoring site for Waiver benchmarks and TMDL LAs is site OXD_CENTR.
2. TMDL water column load allocations for this constituent are the same as the Conditional Waiver benchmarks.
3. The McGrath Lake PCBs, Pesticides and Sediment Toxicity TMDL includes LAs for suspended sediment as well as the water column.
4. TMDL LA exceedances coincide with Waiver benchmark exceedances, therefore recommendations for BMPs will apply to the entire responsibility area and separate considerations for the McGrath Lake TMDL responsibility area are not necessary.
5. Exceedance in both water column and suspended sediment.
6. Exceedance of 4,4'-DDT in water column, and Total DDT in suspended sediment.

Table 142. BMPs for Additional Implementation in the McGrath Lake Coastal Responsibility Area

Exceedance Condition						Survey Question #	BMP	% of Total Applicable Surveyed Units		Additional Implementation Needed?
Bacteria	Nutrients		Metals	Legacy Pesticides	Current Pesticides			OXD_CENTR Site Drainage Only	McGrath Lake Coastal Responsibility Area	
Dry	Dry	Wet	Wet	Wet	Wet					
	x	x	x	x	x	Crop management ^[b]	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	35%	62%	Yes
x	x	x				Irrigation system type ^[b]	Efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler)	86%	69%	Yes
	x	x				1 ^[b]	Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.	14%	69%	Yes
	x	x				2 ^[b]	Irrigation practices are based on soil moisture measurements and/or crop evapotranspiration	55%	73%	Yes
	x	x				3	Soil solution electrical conductivity measurements are used to determine when salt leaching is necessary	61%	78%	Yes
	x	x				4	Certified nutrient management plan has been prepared for the property	0%	18%	Yes
	x	x				5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	95%	90%	Yes
	x	x				6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	88%	83%	Yes
	x	x				7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	14%	51%	Yes
	x	x				8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	5%	79%	Yes
	x	x	x	x	x	9, 10 ^[b]	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	NA ^[a]	92%	Yes
		x	x	x	x	11 ^[b]	How much non-cropped area is bare soil	5%	9%	Yes
x	x	x	x	x	x	12 ^[b]	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	25%	30%	Yes
x	x	x	x	x	x	13 ^[b]	Grassed waterways are used	0%	10%	Yes
x	x	x	x	x	x	14 ^[b]	Vegetated filter strips are used	0%	7%	Yes
					x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	100%	100%	No
					x	16	An integrated pest management plan is implemented	61%	89%	Yes
x	x	x				18 ^[b]	How many acres produce irrigation runoff	21%	28%	Yes
x	x	x	x	x	x	19 ^[b]	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	14%	29%	Yes

[a] Zero acres reported as sloped within the surveyed OXD_CENTR site drainage.

[b] BMP with potential to reduce sediment runoff and improve irrigation efficiency for the McGrath Lake OC Pesticides and PCBs TMDL.

Table 143. Proposed Best Management Practices for the McGrath Lake Coastal Responsibility Area

Water Quality Issues						BMPs
Bacteria	Nutrients		Metals	Legacy Pesticides	Current Use Pesticides	
Dry Weather	Dry Weather	Wet Weather	Wet Weather	Wet Weather	Wet Weather	
						<i>Source Control BMPs</i>
	X	X	X	X	X	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
X	X					Use efficient irrigation system (sum of drip only, micro-sprinkler then drip, and micro-sprinkler) Test irrigation system for distribution uniformity by monitoring water delivery or pressure differences by block at least every 3 years.
	X					Implement irrigation practices that are based on soil moisture measurements and/or crop evapotranspiration Use soil solution electrical conductivity measurements to determine when salt leaching is necessary
	X	X				Prepare a certified nutrient management plan for the property
	X	X				Conduct soil residual nitrate tests and use results to adjust fertilizer application
	X	X				Conduct leaf/petiole tests and use results to apply the minimum necessary amount of fertilizer
	X	X				Analyze irrigation water nitrate and use results to adjust fertilizer application
	X	X				Adjust fertilizer application to account for nutrients provided by cover crops
	X	X	X	X	X	Minimize erosion on sloped areas with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)
		X	X	X	X	Minimize bare soil in non-cropped areas by using vegetation, mulch, or gravel
					X	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
			X		X	Implement an integrated pest management plan

Water Quality Issues						BMPs
Bacteria	Nutrients		Metals	Legacy Pesticides	Current Use Pesticides	
Dry Weather	Dry Weather	Wet Weather	Wet Weather	Wet Weather	Wet Weather	
x	x					Avoid/prevent irrigation runoff
						<i>Structural Non-Treatment BMPs</i>
x	x	x	x	x	x	Protect ditches from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals
x	x	x	x	x	x	Use grassed waterways
x	x	x	x	x	x	Use vegetated filter strips
						<i>Optional Treatment BMPs</i>
x	x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

Bolded BMPs are required by the Conditional Waiver to the degree appropriate for achieving compliance with the McGrath Lake OC Pesticides and PCBs TMDL.

Malibu Responsibility Area



Figure 240. Malibu Responsibility Area Map

The Malibu responsibility area is illustrated in Figure 240. The VCAILG monitoring site 05T_HONDO also serves as a proxy TMDL assessment site for the Malibu Creek Watershed Sedimentation and Nutrients TMDLs.

Table 144. Malibu Responsibility Area Enrollment and Survey Acreage Summary

Enrollment and Survey Information	Responsibility Area [a]	Drainage Area 05T_HONDO Monitoring Site [a]
Assessed Acreage Information		
Total Assessed Acres from Agricultural Parcel List	310	2,660
Assessed Acres from Agricultural Parcel List Identified as Exempt from Waiver [b]	27	0
Total Assessed Acres from Agricultural Parcel List belonging to VCAILG Members	27	2,657
Assessed Acres from Agricultural Parcel List belonging to Non Members	256	3
Irrigated Acreage Information		
VCAILG Member Acreage Reported as Irrigated	14	1,665
Ratio (VCAILG Member Irrigated Acres/VCAILG Member Assessed Acres)	0.52	0.63
Estimated Irrigated Acres in Non Member Agricultural Parcels [c]	132	2
Total Estimated Irrigated Acres (Member plus Non Member)	146	1,667
Percent of Total Estimated Irrigated Acres Enrolled in VCAILG	10%	100%
Survey Response Information		
Sum Surveyed Irrigated Acres	14	1,637
Percent of Total Estimated Irrigated Acres that were Surveyed	10%	98%
Percent of VCAILG Member Irrigated Acres that were Surveyed	100%	98%

[a] Responsibility area does not include the beacon monitoring site drainage area.

[b] Exempt from *Conditional Waiver* because owner has reported that no crops are irrigated.

[c] Derived using ratio of Irrigated Acres/Assessed Acres for Member Acreage.

Table 145. Malibu Responsibility Area Crop Types and General Production Practices

Crop or Practice	05T_HONDO Site Drainage Only				05T_HONDO-Malibu Responsibility Area			
	Acres with Crop or Practice		% of Surveyed Acres		Acres with Crop or Practice		% of Surveyed Acres	
	2017	2018	2017	2018	2017	2018	2017	2018
Crop Type								
Strawberries	-	-	-	-	-	-	-	-
Blueberries	-*	-	-*	-	-*	-	-*	-
Raspberries		19		1%		-		-
Row Crop	10	57	1%	3%	-	-	-	-
Orchard	1,447	1,551	99%	95%	14	14	100%	100%
Nursery	-	-	-	-	-	-	-	-
Flower	10	10	1%	1%	-	-	-	-
Sod	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Overhead Cover in Production Areas								
Hoop House	96	23	7%	1%	-	-	-	-
No Cover	85	63	6%	4%	-	-	-	-
Greenhouse	-	-	-	-	-	-	-	-
Shade	20	-	1%	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Surface Treatments in Production Areas								
Bare Soil	80	231	5%	14%	14	14	100%	100%
Cover Crop	103	103	7%	6%	-	-	-	-
Plastic	-	-	-	-	-	-	-	-
Weed Cloth	-	-	-	-	-	-	-	-
Mulch	1,288	1,307	88%	80%	-	-	-	-
Gravel	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Irrigation Systems in Production Areas								
Drip Only	881	941	60%	57%	14	14	100%	100%
Microsprinkler/Drip	-	-	-	-	-	-	-	-
Microsprinkler	586	649	40%	40%	-	-	-	-
Overhead Sprinkler	-	-	-	-	-	-	-	-
Overhead/Drip	-	47	-	3%	-	-	-	-
Furrow Flood	-	-	-	-	-	-	-	-
Hand Watering	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-

[a] Responsibility area does not include the beacon monitoring site drainage area.

* Value for 2017 is for Raspberries & Blueberries combined

Table 146. Malibu Responsibility Area Grower BMPs

Survey Question	Units	05T_HONDO Site Drainage Only				05T_HONDO-Malibu Responsibility Area			
		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units		Surveyed Units Meeting Criterion		% of Total Applicable Surveyed Units	
		2017	2018	2017	2018	2017	2018	2017	2018
Irrigation and Salinity Management									
Q1: Is the irrigation system tested for distribution uniformity at least once every 3 years?	Acres	1,382	1,499	94%	97%	14	14	100%	100%
Q2: Is soil moisture used as determinant of irrigation practices?	Acres	1,344	1,513	92%	98%	-	-	-	-
Q3: Is soil EC used to determine when salt leaching is necessary?	Acres	43	166	3%	11%	-	N/A	-	N/A
Nutrient Management									
Q4a: Is there a Nutrient Management Plan for the parcel?	Acres	1,389	1,522	95%	98%	-	-	-	-
Q4b: Is it a Certified Nutrient Management Plan?	Acres	1,215	1,304	83%	84%	-	-	-	-
Q5a: Are soil residual nitrate tests done?	Acres	1,279	1,411	87%	91%	-	-	-	-
Q5b: Is fertilizer adjusted using residual soil nitrate?	Acres	1,279	1,411	87%	91%	-	-	-	-
Q6: Are leaf/petiole tests conducted?	Acres	1,394	1,458	95%	95%	14	14	100%	100%
Q7a: Is nitrate measured in fertigation water?	Acres	1,380	1,497	94%	96%	-	-	-	-
Q7b: Is fertilizer adjusted using fertigation water nitrate levels?	Acres	1,360	1,477	93%	95%	-	-	-	-
Q8: Is fertilizer adjusted based on nutrients provided by cover crops?	Acres	108	120	29%	32%	-	N/A	-	N/A
Sediment Management									
Q9: How many cropped acres have a slope greater than 2%?	Acres	368	368	25%	24%	14	14	100%	100%
Q10: Erosion control is used on how many of the sloped cropped acres?	Acres	519	519	141%	141%	14	14	100%	100%
Q11: How much non-cropped area is bare soil?	Acres	277	227	19%	25%	13	13	94%	100%
Q12a: How many feet of ditches exist?	Feet	42,143	42,143	N/A	N/A	50	50	N/A	N/A
Q12b: How many feet of ditches are protected from erosion?	Feet	29,110	29,110	69%	69%	50	50	100%	100%
Q13a: Are grassed waterways present?	Acres	93	93	6%	6%	-	-	-	-
Q13b: How many acres drain to grassed waterways?	Acres	-	-	-	-	-	-	-	-
Q14: How many acres are treated by vegetated filter strips?	Acres	99	99	7%	6%	-	-	-	-
Pest Management									
Q15: Are PCAs used for pesticide management decisions?	Acres	1,447	1,532	99%	99%	-	-	-	-
Q16: Is an IPM Plan being implemented?	Acres	1,447	1,532	99%	99%	-	-	-	-
Q17a: How many acres are organically farmed?	Acres	-	21	-	1%	-	-	-	-
Q17b: How many acres are conventionally farmed?	Acres	1,467	1,531	100%	99%	14	14	100%	100%
Runoff Management/Treatment									
Q18: How many acres produce irrigation runoff?	Acres	-	-	-	-	-	-	-	-
Q19: Runoff from how many acres is treated or detained?	Acres	156	156	11%	10%	-	-	-	-

[a] Responsibility area does not include the beacon monitoring site drainage area.

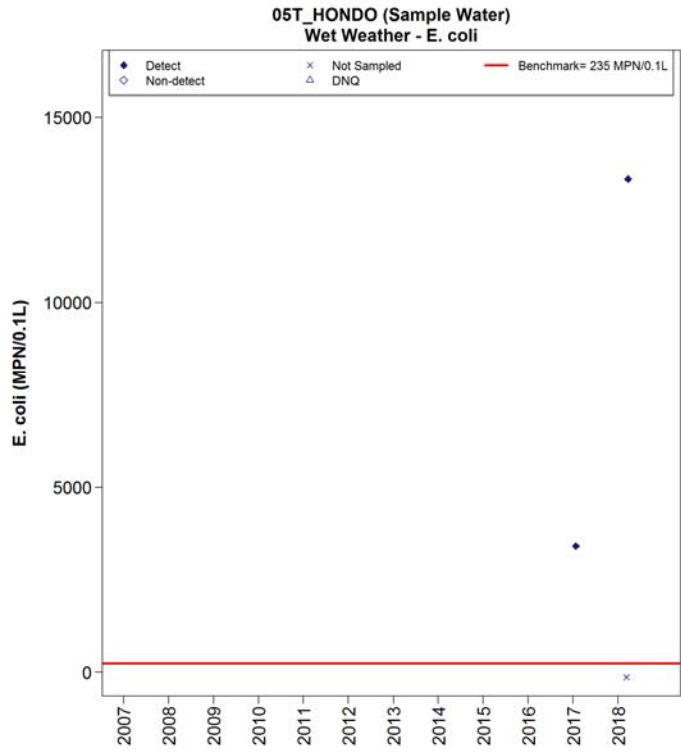


Figure 241. Wet Weather *E. coli* Concentrations at Waiver Benchmark Site 05T_HONDO

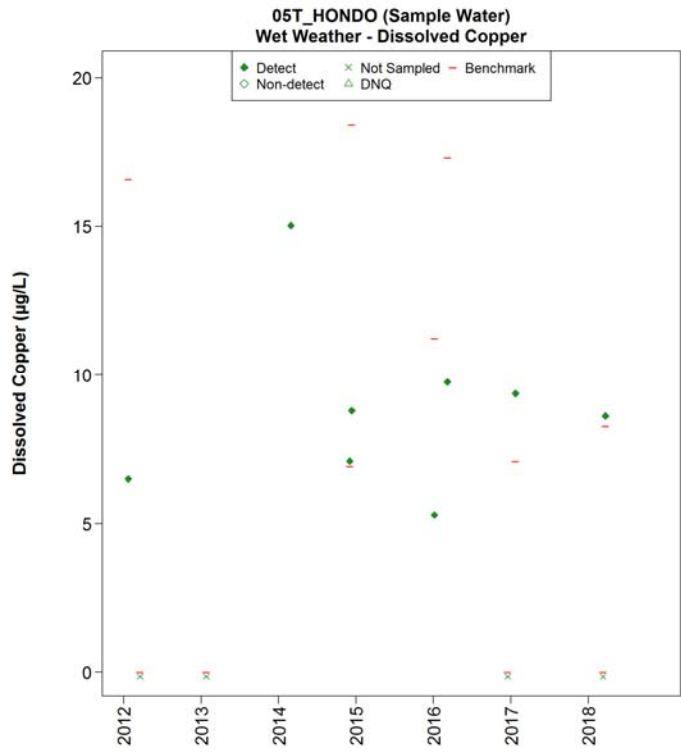


Figure 242. Wet Weather Dissolved Copper Concentrations at Waiver Benchmark Site 05T_HONDO

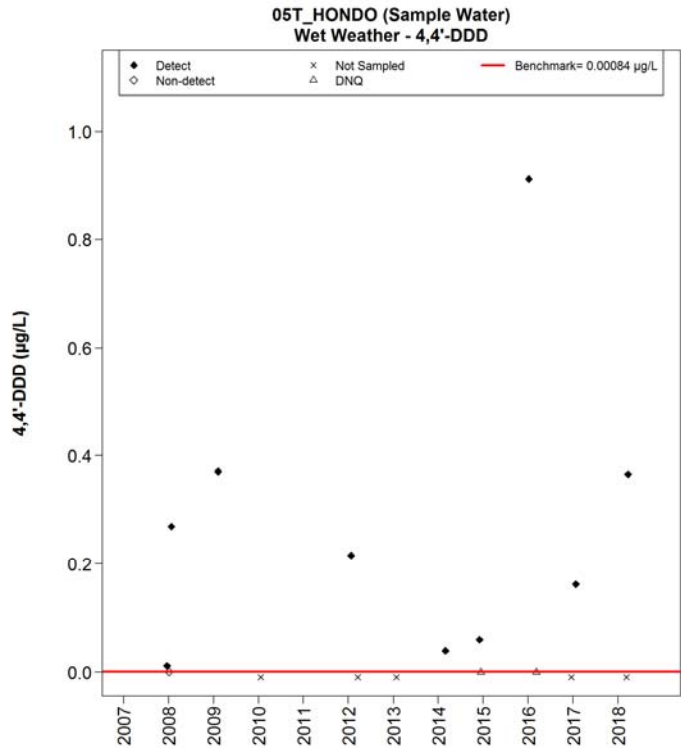


Figure 243. Wet Weather DDD Concentrations at Waiver Benchmark Site 05T_HONDO

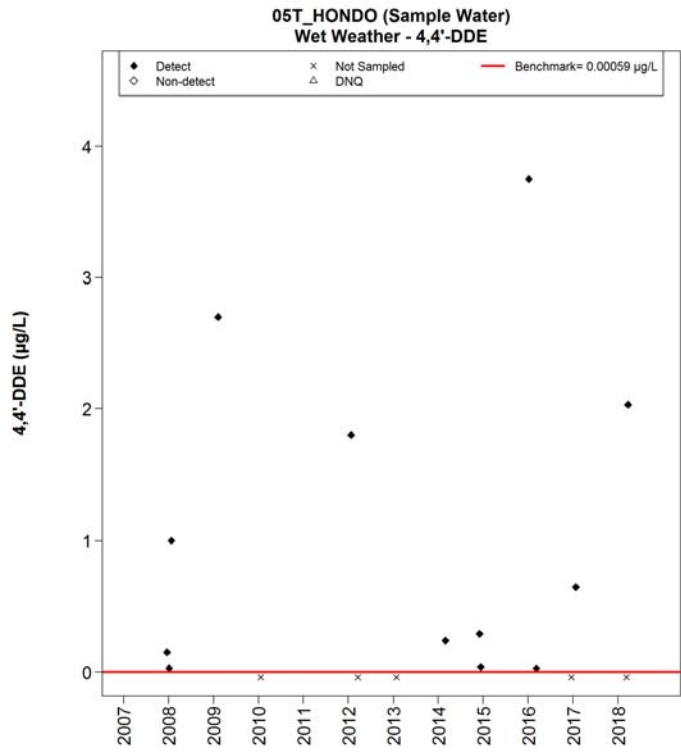


Figure 244. Wet Weather DDE Concentrations at Waiver Benchmark Site 05T_HONDO

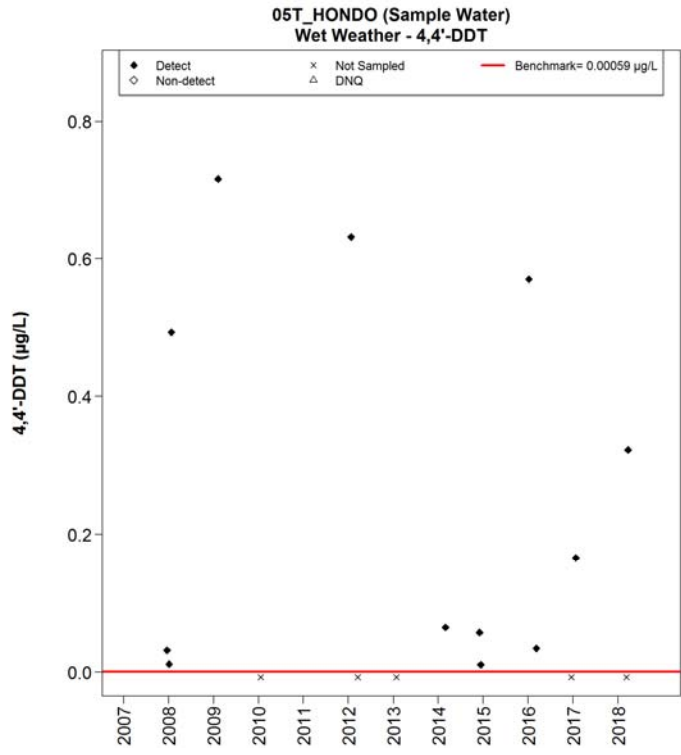


Figure 245. Wet Weather DDT Concentrations at Waiver Benchmark Site 05T_HONDO

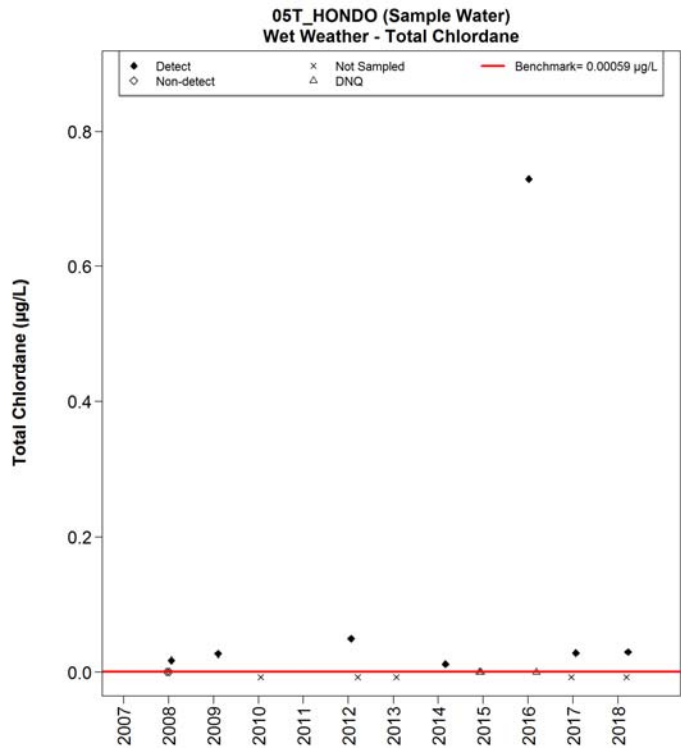


Figure 246. Wet Weather Total Chlordane Concentrations at Waiver Benchmark Site 05T_HONDO

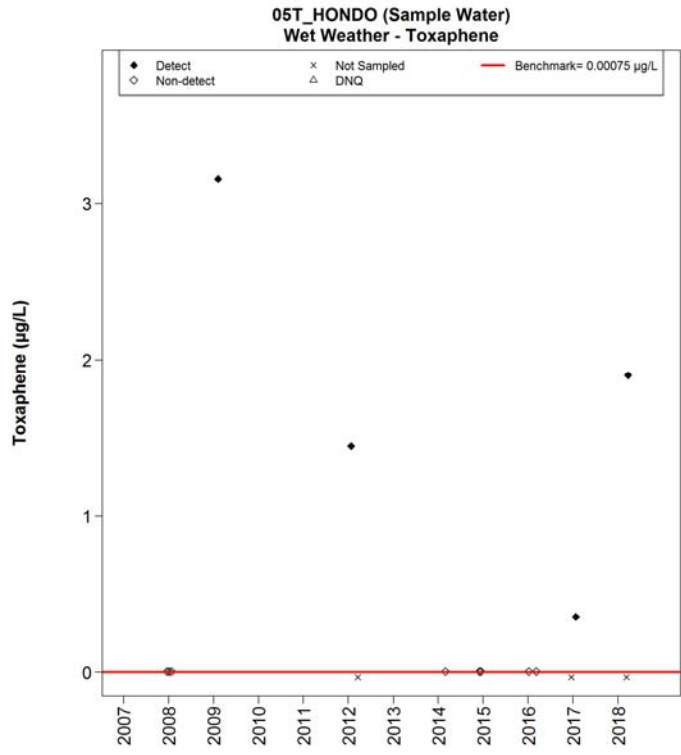


Figure 247. Wet Weather Toxaphene Concentrations at Waiver Benchmark Site 05T_HONDO

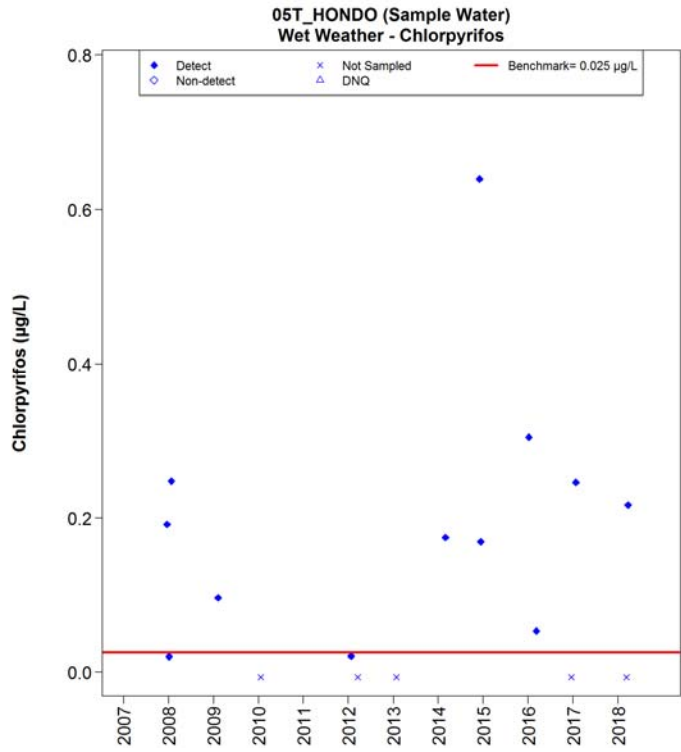


Figure 248. Wet Weather Chlorpyrifos Concentrations at Waiver Benchmark Site 05T_HONDO

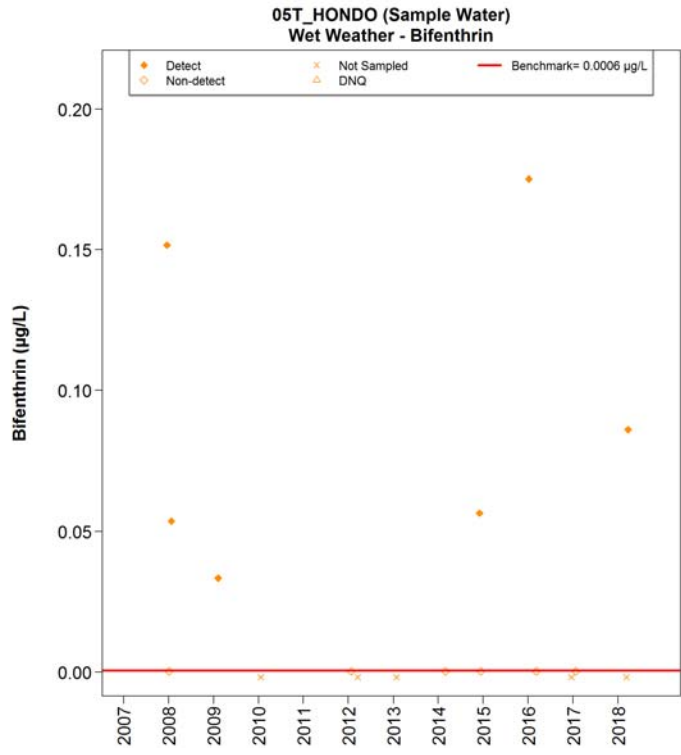


Figure 249. Wet Weather Bifenthrin Concentrations at Waiver Benchmark Site 05T_HONDO

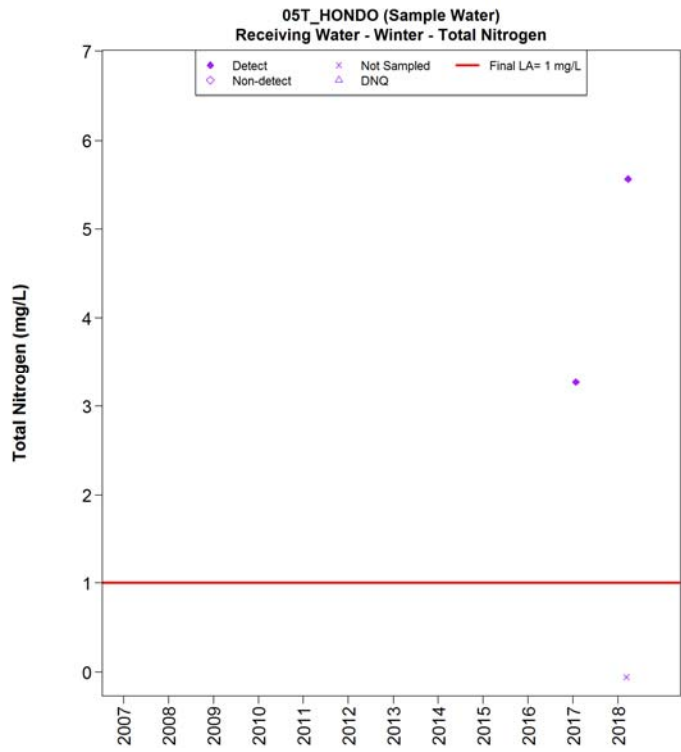


Figure 250. Wet Weather Total Nitrogen Concentrations at TMDL Proxy Site 05T_HONDO

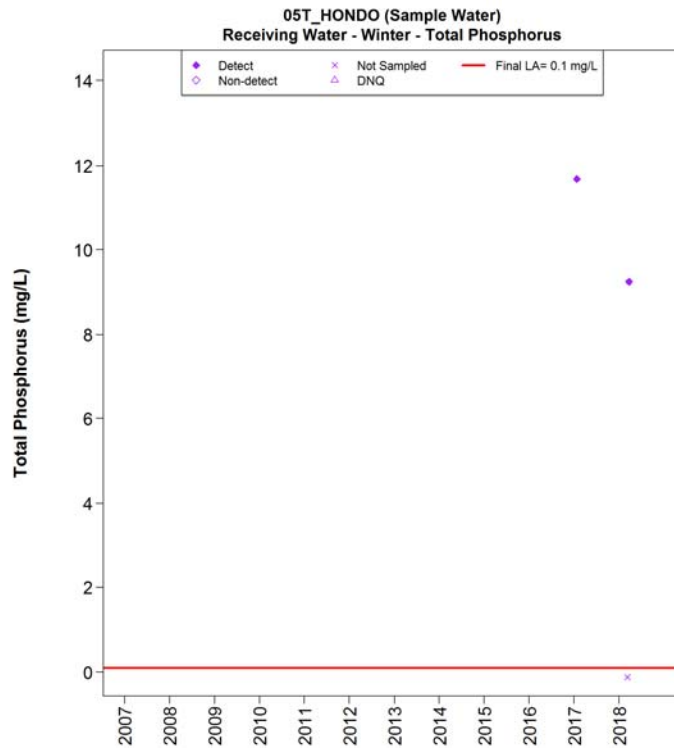


Figure 251. Wet Weather Total Phosphorus Concentrations at TMDL Proxy Site 05T_HONDO

Table 147. Summary of Benchmark Exceedance Evaluation for Malibu Responsibility Area

Constituents for Considering Additional Management Practices Based on Monitoring Data	Dry Weather			Wet Weather		
	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances	Review Implementation and Plan BMPs	Waiver Benchmark Site Exceedances ¹	TMDL LA Site Exceedances ²	Review Implementation and Plan BMPs
<i>Bacteria</i>						
<i>E. coli</i>				•		<input checked="" type="checkbox"/>
<i>Nutrients</i>						
Total Nitrogen					•	<input checked="" type="checkbox"/>
Total Phosphorus					•	<input checked="" type="checkbox"/>
<i>Metals and Selenium</i>						
Dissolved Copper				•		<input checked="" type="checkbox"/>
<i>OC Pesticides (Legacy)</i>						
DDD				•		<input checked="" type="checkbox"/>
DDE				•		<input checked="" type="checkbox"/>
DDT				•		<input checked="" type="checkbox"/>
Chlordane				•		<input checked="" type="checkbox"/>
Toxaphene				•		<input checked="" type="checkbox"/>
<i>OP and Pyrethroid Pesticides (Current)</i>						
Chlorpyrifos				•		<input checked="" type="checkbox"/>
Bifenthrin				•		<input checked="" type="checkbox"/>

1. VCAILG monitoring site for Waiver benchmarks is 05T_HONDO.
2. TMDL proxy monitoring site for the Malibu Creek and Lagoon TMDLs for Sedimentation and Nutrients to Address Benthic Community Impairments and Malibu Creek Watershed Nutrients TMDL is 05T_HONDO. Exceedances are for winter season.

Table 148. BMPs for Additional Implementation in the Malibu Responsibility Area

Exceedance Condition					Survey Question #	BMP	% of Total Applicable Surveyed Units		Additional Implementation Needed? [b]
Bacteria	Nutrients	Metals	Legacy Pesticides	Current Pesticides			05T_HONDO Site Drainage [a]	Malibu Responsibility Area [a]	
Wet	Wet	Wet	Wet	Wet					
	x	x	x	x	Crop management	Reduce bare soil in production areas with cover crops, gravel, mulch, etc. (sum of all cover types, except bare soil)	86%	0%	Yes
	x				4	Certified nutrient management plan has been prepared for the property	84%	0%	Yes
	x				5	Soil residual nitrate tests are conducted and used to adjust fertilizer applications	91%	0%	Yes
	x				6	Leaf/petiole tests are conducted and used to apply the minimum necessary amount of fertilizer	95%	100%	No
	x				7	Irrigation water nitrate is analyzed and the results are used to adjust fertilizer applications.	95%	0%	Yes
	x				8	Fertilizer applications are adjusted to account for nutrients provided by cover crops	32%	N/A	Yes
	x	x	x	x	9, 10	Erosion on sloped areas are minimized with contour farming, contoured buffer strips, or terracing (sloped acres with erosion control/total sloped acres)	141%	100%	No
	x	x	x	x	11	How much non-cropped area is bare soil	25%	100%	No
x	x	x	x	x	12	Ditches are protected from erosion using vegetation, rock placement or geotextiles, or wattles placed at intervals	69%	100%	No
x	x	x	x	x	13	Grassed waterways are used	6%	0%	Yes
x	x	x	x	x	14	Vegetated filter strips are used	6%	0%	Yes
				x	15	Pesticide management decisions are made by a pest control advisor (PCA) or certified qualified applicator	99%	0%	Yes
				x	16	An integrated pest management plan is implemented	99%	0%	Yes
x	x	x	x	x	19	Property is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands	10%	0%	Yes

[a] Responsibility area does not include the beacon monitoring site drainage area.

[b] Only BMP implementation in the responsibility area is considered because the beacon site drainage is not included in the responsibility area.

Table 149. Proposed Best Management Practices for the Malibu Responsibility Area

Water Quality Issues					BMPs
Bacteria	Nutrients	Metals	Legacy Pesticides	Current Use Pesticides	
Wet Weather	Wet Weather	Wet Weather	Wet Weather	Wet Weather	
					<i>Source Control BMPs</i>
	x	x	x	x	Reduce bare soil in production area with cover crops, gravel, mulch, etc.
	x				Prepare a certified nutrient management plan for the property
	x				Conduct soil residual nitrate tests and use results to adjust fertilizer application
	x				Analyze irrigation water nitrate and use results to adjust fertilizer application
	x				Adjust fertilizer application to account for nutrients provided by cover crops
				x	Use a pest control advisor (PCA) or certified qualified applicator for pesticide management decisions
				x	Implement an integrated pest management plan
					<i>Structural Non-Treatment BMPs</i>
x	x	x	x	x	Use grassed waterways
x	x	x	x	x	Use vegetated filter strips
					<i>Optional Treatment BMPs</i>
x	x	x	x	x	Runoff is treated with sediment traps, detention/retention basins, bioreactor, or constructed wetlands

PESTICIDE USE EVALUATION

In 1990, California became the first state to require full reporting of agricultural pesticide use in response to demands for more realistic and comprehensive pesticide use data. Under the program, all agricultural pesticide use must be reported monthly to county agricultural commissioners, who in turn, report the data to the Department of Pesticide Regulation (DPR). California has a broad legal definition of "agricultural use" so the reporting requirements include pesticide applications to parks, golf courses, cemeteries, rangeland, pastures, and along roadside and railroad rights-of-way. In addition, all post harvest pesticide treatments of agricultural commodities must be reported along with all pesticide treatments in poultry and fish production as well as some livestock applications. Only agricultural applications, as noted by specific commodity treated, are summarized in this document.

Section 2)a)iv. of Appendix 3 of the Conditional Waiver requires "a pesticide use evaluation assessment, including the timing of pesticide applications, the application rates, the amounts of pesticides applied, and the points of application". In addition, Section 2)a)iv. requires a comparison of changes in pesticide concentrations at specific monitoring sites to pesticide use patterns for land areas draining to the monitoring site (i.e., a monitoring site's drainage area). To accomplish this, pesticide use records obtained from the Ventura County Agricultural Commissioner's office⁶ were compared to VCAILG monitoring data. The timeframe for the analysis is July 1, 2016 – June 4, 2018, which begins where the first WQMP pesticide use evaluation ended.

The evaluation included diazinon, chlorpyrifos, and bifenthrin since those are the three presently permitted pesticides with water quality benchmarks under the Conditional Waiver. To conduct the comparison between the pesticide use records and the VCAILG monitoring data, pesticide application locations had to be linked to the appropriate monitoring site drainage, as not all pesticide applications within Ventura County occurred within a VCAILG monitoring site drainage area.

Additional manipulation of the pesticide use data included multiplying the percent concentration of the active ingredient (i.e., the percent of diazinon, chlorpyrifos, or bifenthrin within the specific product used) by the total volume or weight of the specific product applied. Depending on the product formulation, the calculated amount of pesticide used was either in gallons or pounds of active ingredient. The dates and amounts of pesticides applied were then compared to the VCAILG monitoring data and benchmark exceedances. Table 150 to Table 152 include July 1, 2016 to June 4, 2018 chlorpyrifos, diazinon, and bifenthrin application information by crop type as well as a comparison to water quality data from associated VCAILG monitoring sites.

Chlorpyrifos

For agricultural application, chlorpyrifos is the active ingredient in several products including Lorsban, Dursban, Nufos, and Warhawk. Use of chlorpyrifos is common on lemons, oranges, and onions in Ventura County. Chlorpyrifos was applied within the drainage areas of 10 of 15 VCAILG monitoring sites during the analysis timeframe. Chlorpyrifos was applied within

⁶ All effort was made to obtain the most up-to-day pesticide use information from the Ventura County Agricultural Commissioner's office. However, if paper pesticide use reports had been submitted within a few months of the data request, those reports may not have been reflected in the data obtained due to the information required to be entered manually, which delays the addition of the data to the database.

drainage areas 27 times. There were 17 instances of exceedances at the 10 monitoring sites where chlorpyrifos was applied within the drainage area; all during wet weather with the exception of one dry weather exceedance. There was one additional exceedance at a monitoring site that did not have agricultural applications of chlorpyrifos within the drainage area. The following factors may contribute to the likelihood that chlorpyrifos is transported off-site: pesticide formulation and application method, date of application in relation to subsequent rain events, and proximity to a drainage channel, stream, or tributary.

Diazinon

Diazinon usage was much less widespread than chlorpyrifos during the time period. Applications of diazinon occurred at one VCAILG monitoring site drainage area; however, there were no exceedances of the water quality benchmark at the monitoring site where diazinon was applied within the associated drainage area or any of the other monitoring locations.

Bifenthrin

Bifenthrin was applied within the drainage areas of 6 of 15 VCAILG monitoring sites during the analysis timeframe. Bifenthrin was applied within those six site drainage areas 13 times. There were 12 instances of exceedances at the 6 monitoring sites where bifenthrin was applied within the drainage area; all during wet weather with the exception of one dry weather exceedance. In one drainage area, bifenthrin was applied, and no exceedances occurred. There were an additional 14 exceedances at monitoring sites that did not have agricultural applications of bifenthrin within the drainage area.

Summary

Based on the results of the analysis that compared water quality data from the VCAILG sites and the agricultural pesticide use within the associated site drainage areas, it is difficult to discern any patterns between water quality benchmark exceedances and agricultural pesticide use. While the VCAILG monitoring sites' drainage areas aim to include predominantly agricultural land use, none of the drainage areas are completely comprised of agricultural land use. Applications of pesticides often occur outside the agricultural land use areas and are not reflected in the pesticide use records used for the analysis. In addition, pesticide use is variable and performed in response to a variety of factors such as pest pressures, sudden outbreaks of latent diseases and/or pathogens, cropping patterns, variation in neighboring crops that may have incompatible maximum residue limits, etc. Also, the use of a specific pesticide on a particular crop varies from year to year. To mitigate this variability and the changing landscape of pesticide use, all pesticide use decisions are based on farmer and pest control advisor (PCA) expertise, and applied under the authority of the local Agricultural Commissioner's office and the DPR. Additionally, all pesticide-applicable BMPs are included in the suite of BMPs identified in the WQMP when triggered by exceedances of the pesticide benchmarks. In this WQMP, structural non-treatment BMPs are prioritized in the farmer outreach handouts for implementation to address these wet weather current use pesticides exceedances.

Table 150. Chlorpyrifos¹ Applications and Benchmark Exceedances by Monitoring Site, July 1, 2016 – June 4, 2018

Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
04D_ETTG	10/26/16	Cabbage	1.3	--	1/22/17	Wet	0.025	0.055	3,309
04D_ETTG	7/12/17	Brussel Sprout	4.3	--	N/A	N/A	0.025	N/A	3,309
04D_ETTG	7/21/17	Cabbage	--	6.2	N/A	N/A	0.025	N/A	3,309
04D_ETTG	8/2/17	Cabbage	2.0	--	N/A	N/A	0.025	N/A	3,309
04D_LAS	7/10/17	Radish	--	6.0	3/22/18	Wet	0.025	0.040	1,339
05D_LAVD	10/16/16	Lemon	4.9	--	12/16/16	Wet	0.025	0.589	877
05D_LAVD	N/A	N/A	N/A	N/A	1/22/17	Wet	0.025	0.340	877
05D_LAVD	N/A	N/A	N/A	N/A	3/22/18	Wet	0.025	0.286	877
05T_HONDO	7/15/16	Lemon	14.1	--	1/22/17	Wet	0.025	0.247	3,928
05T_HONDO	8/8/16	Lemon	13.3	--	3/22/18	Wet	0.025	0.217	3,928
05T_HONDO	10/7/16	Lemon	15.0	--	N/A	N/A	0.025	N/A	3,928
05T_HONDO	10/24/16	Lemon	11.4	--	N/A	N/A	0.025	N/A	3,928
05T_HONDO	9/30/17	Lemon	15.2	--	N/A	N/A	0.025	N/A	3,928
06T_LONG2	8/18/16	Lemon	7.0	--	1/22/17	Wet	0.025	0.197	2,813
06T_LONG2	8/29/16	Lemon	3.7	--	3/22/18	Wet	0.025	0.033	2,813
06T_LONG2	9/1/16	Lemon	8.6	--	N/A	N/A	0.025	N/A	2,813
06T_LONG2	9/6/16	Lemon	3.6	--	N/A	N/A	0.025	N/A	2,813
06T_LONG2	10/8/16	Lemon	5.3	--	N/A	N/A	0.025	N/A	2,813
06T_LONG2	10/27/16	Lemon	2.9	--	N/A	N/A	0.025	N/A	2,813
06T_LONG2	11/16/17	Lemon	3.2	--	N/A	N/A	0.025	N/A	2,813
OXD_CENTR	8/11/16	Strawberry	4.0	--	1/22/17	Wet	0.025	0.040	1,243
S02T_ELLS	10/24/16	Lemon	8.2	--	12/16/16	Wet	0.025	0.143	9,015
S02T_ELLS	11/2/16	Lemon	22.9	--	1/22/17	Wet	0.025	0.110	9,015
S02T_ELLS	7/20/17	Lemon	1.6	--	N/A	N/A	0.025	N/A	9,015
S02T_TODD	10/13/17	Lemon	3.2	--	8/24/16	Dry	0.025	0.058	5,748
S02T_TODD	N/A	N/A	N/A	N/A	12/16/16	Wet	0.025	0.052	5,748
S03D_BARDS	10/4/17	Orange	4.8	--	1/22/17	Wet	0.025	0.049	2,214
S03D_BARDS	N/A	N/A	N/A	N/A	3/22/18	Wet	0.025	0.127	2,214

Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
S03T_BOULD	9/17/16	Lemon	12.5	--	1/22/17	Wet	0.025	0.035	3,764
S03T_BOULD	9/20/16	Lemon	8.8	--	N/A	N/A	0.025	N/A	3,764
S03T_BOULD	9/23/16	Tangerine	0.8	--	N/A	N/A	0.025	N/A	3,764
S03T_TIMB	N/A	N/A	N/A	N/A	1/22/17	Wet	0.025	0.114	2,183

1. There were exceedances at monitoring sites where chlorpyrifos was applied within the associated drainage area and exceedances at monitoring sites without chlorpyrifos applications within the associated drainage area.

Table 151. Diazinon¹ Applications and Benchmark Exceedances by Monitoring Site, July 1, 2016 – June 4, 2018

Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
OXD_CENTR	4/8/17	Bean	0.2	--	N/A	N/A	0.1	N/A	1,243

1. There were no exceedances at monitoring sites where diazinon was applied within the associated drainage area.

Table 152. Bifenthrin¹ Applications and Benchmark Exceedances by Monitoring Site, July 1, 2016 – June 4, 2018

Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
01T_ODD3_EDI	10/30/17	Brussel Sprout	0.3	--	1/22/17	Wet	0.0006	0.0089	643
01T_ODD3_EDI	2/20/18	Celery	0.1	--	3/22/18	Wet	0.0006	0.0280	643
04D_ETTG	7/2/16	Cabbage	--	0.4	12/16/16	Wet	0.0006	0.0082	3,778
04D_ETTG	9/13/16	Celery/Cabbage	0.2	--	1/22/17	Wet	0.0006	0.1999	3,778
04D_ETTG	9/1/17	Artichoke	--	2.7	3/11/18	Wet	0.0006	0.0128	3,778
04D_ETTG	10/19/17	Artichoke	--	5.2	3/22/18	Wet	0.0006	0.0504	3,778
04D_LAS	9/21/17	Artichoke	--	1.8	12/16/16	Wet	0.0006	0.0074	1,339
04D_LAS	10/26/17	Peas	0.1	--	3/22/18	Wet	0.0006	0.0180	1,339
04D_LAS	5/27/18	Cabbage	0.1	--	N/A	N/A	0.0006	N/A	1,339
05T_HONDO	9/22/17	Lemon	6.6	--	3/22/18	Wet	0.0006	0.0860	3,928
OXD_CENTR	9/29/16	Strawberry	--	3.2	12/16/16	Wet	0.0006	0.4044	1,243
OXD_CENTR	9/30/16	Strawberry	--	5.5	1/22/17	Wet	0.0006	0.2574	1,243
OXD_CENTR	N/A	N/A	N/A	N/A	3/22/18	Wet	0.0006	0.0779	1,243

Site	Date	Crop	Active Ingredient (gal)	Active Ingredient (lbs)	Date Benchmark Exceeded	Event Type	Benchmark (µg/L)	Exceedance Conc. (µg/L)	Drainage Area (acres)
S03T_TIMB	3/24/17	Artichoke	--	2.8	N/A	N/A	0.0006	N/A	2,183
05D_LAVD	N/A	N/A	N/A	N/A	1/22/17	Wet	0.0006	0.0868	877
05D_LAVD	N/A	N/A	N/A	N/A	3/22/18	Wet	0.0006	0.0500	877
S02T_ELLS	N/A	N/A	N/A	N/A	12/16/16	Wet	0.0006	0.0054	9,015
S02T_TODD	N/A	N/A	N/A	N/A	8/24/16	Dry	0.0006	0.0192	5,748
S02T_TODD	N/A	N/A	N/A	N/A	12/16/16	Wet	0.0006	0.0263	5,748
S02T_TODD	N/A	N/A	N/A	N/A	1/22/17	Wet	0.0006	0.0147	5,748
S02T_TODD	N/A	N/A	N/A	N/A	3/22/18	Wet	0.0006	0.0487	5,748
S03T_BOULD	N/A	N/A	N/A	N/A	1/22/17	Wet	0.0006	0.0205	3,764
S03T_BOULD	N/A	N/A	N/A	N/A	3/11/18	Wet	0.0006	0.0056	3,764
S03T_BOULD	N/A	N/A	N/A	N/A	3/22/18	Wet	0.0006	0.0538	3,764
S03D_BARDS	N/A	N/A	N/A	N/A	1/22/17	Wet	0.0006	0.0293	2,214
S03D_BARDS	N/A	N/A	N/A	N/A	3/22/18	Wet	0.0006	0.1360	2,214
S04T_TAPO	N/A	N/A	N/A	N/A	1/22/17	Wet	0.0006	0.0103	3,686
S04T_TAPO	N/A	N/A	N/A	N/A	3/22/18	Wet	0.0006	0.0143	3,686

1. There were exceedances at monitoring sites where bifenthrin was applied within the associated drainage area and exceedances at monitoring sites without bifenthrin applications within the associated drainage area.

Schedule

In the previous section, an analysis of exceedances, associated BMPs and current adoption rates were used to assess whether additional implementation of specific BMPs is needed. TMDL-specific BMPs listed in the Conditional Waiver were also added, where appropriate. The following table provides target adoption rates for BMPs to be achieved by the end of the current Conditional Waiver in 2021. In the scheduling table, BMPs are referred to by three general categories:

- Source control and non-structural BMPs (captures all survey BMPs except question #'s 12, 13, 14, and 19 that can be considered applicable to the constituent category with benchmark exceedances identified in the previous section)
- Structural non- treatment BMPs (survey questions 12, 13, and 14, which can be summarized as ditch management and filter strips)
- Optional treatment BMPs (survey question 19, treatment or detention of runoff using any of the following: sediment traps, detention/retention basins, bioreactor, or constructed wetlands)

At this time all source control and other non-structural BMPs have not been fully implemented (using a 98% adoption rate for the drainage area and responsibility area, and taking into consideration that the survey responses cover 83.5% of the irrigated acres currently enrolled in VCAILG) for any of the responsibility areas. Therefore, structural/treatment management practices are not yet required per Appendix 3, Section 2.b.i. However, VCAILG is taking a proactive approach with increased target adoption rates of structural non-treatment BMPs and by prioritizing these types of BMPs in the outreach handouts provided to VCAILG members. This category of structural BMPs includes ditch erosion protection, grassed waterways, and vegetated filter strips are being recommended for greater implementation due to the multiple categories of pollutants they can address and to promote a proactive approach to addressing the water quality issues that have been identified. Treatment and capture BMPS, as specified by survey question 19 will be implemented by the growers on a voluntary basis. These BMPs are listed as optional in the outreach handouts (Appendix F).

While the management practice implementation goals are defined for this current Waiver period, modifications may be made based on the results and analysis in future WQMPs as well as the Source Investigation Report due September 1, 2019. If needed, treatment BMPs will be planned later in the ten-year implementation period as needed to meet the benchmarks and to allow more time for planning; or sooner, if necessary, to achieve TMDL load allocations by the compliance deadline.

The first table below summarizes the exceedance categories requiring BMPs for each responsibility area along with the compliance date and adoption rates for source control and non-structural BMPs, followed by structural non-treatment BMPs. These are updated goals for implementation at the conclusion of the current Conditional Waiver term. The second table is specific for where nutrient management plans are required and similarly, includes the compliance date and target adoption rate.

Table 153. BMP Implementation Schedule for Each Responsibility Area

Responsibility Area	Constituent Category for Benchmark Exceedance(s)	Compliance Date	Target Adoption Rate for Source Control and Non-Structural BMPs in 2021	Target Adoption Rate for Structural Non-Treatment BMPs in 2021
Mugu Lagoon (within Oxnard Drain #3 TMDL area)	Nutrients	October 2025	90%	30%
	Metals	March 2022	90%	30%
	Legacy Pesticides	April 2026	90%	30%
	Current Pesticides	April 2026	90%	30%
	Bacteria	April 2027	NA	30%
Mugu Lagoon (outside Oxnard Drain #3 TMDL area)	Nutrients	October 2025	85%	40%
	Metals	March 2022	85%	40%
	Legacy Pesticides	March 2026	85%	40%
	Current Pesticides	March 2022	85%	40%
	Bacteria	April 2027	NA	40%
Etting-Wood	Nutrients	October 2025	80%	65%
	Metals	March 2022	80%	65%
	Legacy Pesticides	March 2026	80%	65%
	Current Pesticides	March 2022	98%	65%
	Toxicity	April 2027	85%	65%
	Bacteria	April 2027	25%	65%
Lower Calleguas Creek	Nutrients	October 2025	80%	35%
	Metals	March 2022	98%	35%
	Legacy Pesticides	March 2026	80%	35%
	Current Pesticides	March 2022	98%	35%
	Toxicity	April 2027	80%	35%
	Bacteria	April 2027	25%	35%
South Revolon	Nutrients	October 2025	80%	30%
	Metals	March 2022	90%	30%
	Legacy Pesticides	March 2026	80%	30%
	Current Pesticides	March 2022	98%	30%
	Bacteria	April 2027	70%	30%

Responsibility Area	Constituent Category for Benchmark Exceedance(s)	Compliance Date	Target Adoption Rate for Source Control and Non-Structural BMPs in 2021	Target Adoption Rate for Structural Non-Treatment BMPs in 2021
LaVista Drain	Salts	April 2027	NA	30%
	Nutrients	October 2025	80%	30%
	Metals and Selenium	March 2022	98%	30%
	Legacy Pesticides	March 2026	80%	30%
	Current Pesticides	March 2022	98%	30%
Beardsley Wash	Nutrients	October 2025	85%	30%
	Metals and Selenium	April 2027/ March 2022	98%	30%
	Legacy Pesticides	March 2026	85%	30%
	Current Pesticides	March 2022	98%	30%
	Bacteria	April 2027	NA	30%
Arroyo Conejo	Legacy Pesticides	March 2026	80%	25%
	Current Pesticides	March 2022	98%	25%
	Bacteria	April 2027	NA	25%
Arroyo Simi	Legacy Pesticides	March 2026	80%	40%
	Current Pesticides	March 2022	98%	40%
	Bacteria	April 2027	NA	40%
Las Posas	Legacy Pesticides	March 2026	80%	35%
	Current Pesticides	March 2022	98%	35%
	Bacteria	April 2027	NA	35%
Tapo Canyon	Salts	October 2020/ April 2027	98%	45%
	Nutrients	October 2022	98%	45%
	Legacy Pesticides	April 2027	80%	45%
	Current Pesticides	April 2027	85%	45%
	Bacteria	April 2027	NA	45%
Boulder Creek	Legacy Pesticides	April 2027	90%	40%
	Current Pesticides	April 2027	90%	40%
Bardsdale	Legacy Pesticides	April 2027	75%	40%
	Current Pesticides	April 2027	90%	40%
	Bacteria	April 2027	NA	40%
Santa Paula Creek	Legacy Pesticides	April 2027	80%	50%

Responsibility Area	Constituent Category for Benchmark Exceedance(s)	Compliance Date	Target Adoption Rate for Source Control and Non-Structural BMPs in 2021	Target Adoption Rate for Structural Non-Treatment BMPs in 2021
Todd Barranca	Nutrients	October 2022	90%	40%
	Salts	April 2027	90%	40%
	Legacy Pesticides	October 2025	90%	40%
	Current Pesticides	April 2027	90%	40%
	Bacteria	April 2027	95%	40%
Ellsworth Barranca	Legacy Pesticides	October 2025	90%	50%
	Current Pesticides	April 2027	90%	50%
Ventura River Inland	Legacy Pesticides	April 2027	75%	50%
Ventura River Coastal	Legacy Pesticides	April 2027	90%	50%
San Antonio Creek	Legacy Pesticides	April 2027	70%	50%
Malibu	Nutrients	July 2021	40%	50%
	Metals	April 2027	100%	50%
	Legacy Pesticides	April 2027	90%	50%
	Current Pesticides	April 2027	60%	50%
	Bacteria	April 2027	NA	50%
McGrath Lake Coastal	Nutrients	April 2027	95%	50%
	Metals	April 2027	95%	50%
	Legacy Pesticides	June 2021	95%	50%
	Current Pesticides	April 2027	95%	50%
	Bacteria	April 2027	90%	50%

Table 154. Implementation Schedule for Certified Nutrient Management Plans for Responsibility Areas Where Currently Needed

Responsibility Area	Nutrient TMDL Compliance Date	Nutrient Management Plan Completion Date Goal	Target Adoption Rate by Plan Completion Date Goal
Etting-Wood	October 14, 2025	September 2019	75%
Lower Calleguas Creek	October 14, 2025	September 2019	75%
South Revolon	October 14, 2025	September 2019	75%
LaVista Drain	October 14, 2025	January 2020	75%
Mugu Lagoon	October 14, 2025	September 2019	75%
Beardsley Wash	October 14, 2025	January 2020	75%
Tapo Canyon	October 14, 2022	April 2020	75%
Todd Barranca	October 14, 2022	April 2020	75%
Ventura River Inland	June 28, 2019	January 2019	100%
San Antonio Creek	June 28, 2019	January 2019	100%
Malibu	July 2, 2021	September 2019	100%

Outreach Plan

A comprehensive outreach strategy for VCAILG members is key to greater implementation and adoption of best management practices (BMPs) throughout Ventura County. The Conditional Waiver states that the “WQMP shall include a strategy for communicating to growers the need to implement additional or upgraded management practices. For each monitoring site:

- Provide regular communication (a minimum of twice per year) to members alerting them of additional and upgraded management practice requirements specific to their responsibility area.
- Provide education classes, referrals to technical assistance providers, and notices of available funding to members, targeting the constituents specific to their responsibility area.”

COMMUNICATIONS

A variety of communications will be utilized to educate members about the water quality testing results in their specific area and the targeted BMPs needed to meet benchmarks by their compliance dates. Outreach materials, where possible, will be crop-specific in nature and prepared in electronic, paper and Spanish versions to reach the widest range of members.

- VCAILG e-Mail News and Announcements: Electronic communications is the most efficient method to keep members well informed. With a distribution list of over 1,200 emails, the VCAILG e-Mail News and Announcements will be sent bi-monthly, at a minimum, and cover current topics important to the program including upcoming educational sessions and BMPs technical and funding resources.
- Traditional Avenues: Flyers, magazine, mailers and quarterly newsletters will also be published to engage membership without access to electronic media.
- Website: VCAILG will continue to update, link and expand information, reports and resources on the Farm Bureau of Ventura County website, which was enhanced last year to include a mobile-friendly version. The Water Quality section of the Farm Bureau website is located here: <http://www.farmbureauvc.com/issues/water-issues/water-quality/> and includes information related to VCAILG and TMDLs.

All three of the approaches to reach VCAILG members will be used as part of the outreach program, however emphasis will be placed on the WQMP webpage as all forms of communication will direct farmers to this location for more detailed information. The WQMP webpage can be found here: <http://www.farmbureauvc.com/issues/water-issues/water-quality/wq-mgmt> and contains the following:

- Link to this WQMP document, upon approval
- Responsibility Areas description and explanation
- Responsibility Area specific compliance summaries detailing what VCAILG members need to know and do in order to meet Conditional Waiver requirements (each compliance summary handout can be accessed directly from the WQMP website linked above)
- Look-up table to determine the responsibility area assignment for each parcel.
- Responsibility Area maps
- Resources and templates for developing Nitrogen Management Plans

EDUCATION

- Workshop and other educational opportunities will be conducted to provide sufficient opportunities for all members to fulfill their requirements and gain greater understanding of water quality goals in their specific areas. Educational opportunities with focus on the following areas:
- BMP Implementation – The focus of these workshops will include a summary of waiver requirements, a review of water quality impairments specific to each watershed or responsibility area, an overview of the responsibility area handouts and other resources available to VCAILG members, a review of responsibility area-specific BMPs and how best to implement them in the field. The resources available to VCAILG members, as noted earlier, are also available online for future reference. In addition, technical resources and funding opportunities will be covered. The workshops will be held at various locations throughout the County and publicized through all appropriate avenues. Although members may attend any of the sessions since the information will be consistently presented, a crop and watershed specific focus will be given to the areas nearest the workshop location. It is also proposed that the areas experiencing the greatest water quality impairments will be scheduled first to allow the most time for BMP implementation. The responsibility area specific compliance summaries will be provided at each meeting with maps displayed for VCAILG members to locate their farm(s). VCAILG staff will also be available to answer questions and provide one-on-one assistance to workshop attendees.
- Nutrient Management – This second category of education will emphasize nutrient management, including both introductory nutrient management classes as well as self-certification workshops to assist members in developing nutrient management plans for the areas who are required to prepare them. These self-certification workshops will follow the CDFA FREP program guidelines already developed for farmers in other parts of the state and will have a crop-specific focus as the most efficient way to deliver this important information to targeted interests. Again, workshops will be open to all members, but priority registration and proximity locations will be focused on those members and areas with the most need.
- Ongoing Education Partnerships - VCAILG will continue to partner with the Ventura County Resource Conservation District, the USDA Natural Resources Conservation Service, the University of California Cooperative Extension, the Strawberry Commission, and other related organizations to provide ongoing and more specialized opportunities to educate members about a wide range of relevant topics.

Explanation of Compliance List Appendices

The Conditional Waiver requires that dischargers obtain a minimum of two hours of educational training every year. Appendix D lists VCAILG members' education credits received during the second year (December 1, 2017 through November 30, 2018).

Eleven education classes were offered during the second year of Conditional Waiver implementation. Table 155 lists the approved classes and the hours of credit for each class.

Table 155. Courses Approved for Education Credit – December 1, 2017 through November 30, 2018

Date	Course Title	Education Hours
4/18/2018	Old and New Smart Agriculture	2
5/10/2018	Vegetable Production Meeting	2
5/15/2018	Introduction to Nutrient Management	2
5/18/2018	Fumigants and Non-Fumigant Alternatives: regulatory and Research Updates	2
6/6/2018	Irrigation Technology and Reading Water Reports	2
6/6/2018	CropManage Hands-On Workshop	3
6/13/2018	Stormwater and Sediment Management in Plasticulture Tunnels	2
9/11/2018	Integrated Pest Management in Avocados	2
9/18/2018	Agricultural Technology Fair	3
10/2/2018	Nitrogen Management Plan Workshop	4
11/27/2018 ¹	Introduction to Nutrient Management	2

1. Meeting rescheduled from November 15th due to location being used for fire crew staging.

As part of the WQMP, VCAILG is also required to submit information regarding the responses of its members including completion of the BMP survey or response to any other information requests, participation in group monitoring, if applicable, and payment of required fees. Appendix E is a complete parcel list with notations for VCAILG membership status and BMP survey completion. Fee payment status is not included at this time due to invoices being mailed in late October and the deadline for payment has not passed. An updated Appendix E, including fee payment status will be available in early 2019, if requested. Appendix E is current as of November 20, 2018.