CITY OF STOCKTON

MUNICIPAL UTILITIES • 2500 Navy Drive • Stockton, CA 95206 • 209-937-8700
www.stocktongov.com

November 27, 2019

Ms. Elizabeth Lee, Unit Chief
Municipal Storm Water Permitting Unit
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

CITY OF STOCKTON AND COUNTY OF SAN JOAQUIN STORM WATER MANAGEMENT PROGRAMS 2016-2019 MID-TERM REPORT (ORDER NO. R5-2016-0040, NPDES PERMIT NO. CAS0085324)

Dear Ms. Lee:

For your review and consideration, the City of Stockton (City) and County of San Joaquin (County) are jointly submitting this 2016-2019 Mid-Term Report, in accordance with the National Pollutant Discharge Elimination System Permit (NPDES) and Waste Discharge Requirements (WDR) General Permit for Discharges from Municipal Separate Storm Sewer Systems (MS4) (General Permit), Part V.F.5. The report reflects all programmatic storm water activities conducted during Fiscal Years 2016-2017 through 2018-2019, as well as all monitoring activities conducted during Fiscal Year 2018-2019.

A copy has been submitted to centralvalleysacramento@waterboards.ca.gov.

If you have any questions, please contact Jason Farnsworth of City of Stockton at (209) 937-8155 or Jason.Farnsworth@stocktonca.gov or Matt Zidar of San Joaquin County at (209) 953-7460 or mzidar@sjgov.org.

Sincerely,

CITY OF STOCKTON
JOHN ABREW
DIRECTOR OF MUNICIPAL UTILITIES

COUNTY OF SAN JOAQUIN
MATT ZIDAR
WATER RESOURCES DIRECTOR

Attachment: 2016-2019 Mid-Term Report

cc: Karen Ashby, Larry Walker Associates
Rachel Warren, Larry Walker Associates

This page intentionally left blank for printing purposes

N O V E M B E R 2 0 1 9

C I T Y O F S T O C K T O N & C O U N T Y O F S A N J O A Q U I N

National Pollutant Discharge Elimination System (Order Nos. R5-2016-0040-002 and R5-2016-0040-003) Municipal Stormwater Program 2016-2019 Mid-Term Report

prepared by

LARRY WALKER ASSOCIATES

This page intentionally left blank for printing purposes

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations. [40 CFR 122.22(d)]

Executed on the 20th day of November 2019, at the City of Stockton.

John Abrew
City of Stockton
Director of Municipal Utilities

This page intentionally left blank for printing purposes

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations. [40 CFR 122.22(d)]

Executed on the 18th day of November 2019, at the County of San Joaquin.

Kris Balaji, PMP, P.E.
County of San Joaquin
Director of Public Works

This page intentionally left blank for printing purposes

Table of Contents

List of Tables

This page intentionally left blank for printing purposes

Table of Figures

List of Appendices

This page intentionally left blank for printing purposes

1 Introduction

The fourth term, National Pollutant Discharge Elimination System (NPDES) and Waste Discharge Requirements (WDR) General Permit for Discharges from Municipal Separate Storm Sewer Systems (MS4) (Region-wide Permit) was adopted June 23, 2016. The City of Stockton (City) and County of San Joaquin (County) submitted a Notice of Intent (NOI) application package in accordance with Part V.B.1 of the Region-wide Permit on November 1, 2016 and received the Notice of Applicability (NOA) from the Central Valley Regional Water Quality Control Board (Regional Water Board) on November 30, 2016.[1] The NOI package included the applicable forms, a preliminary prioritization approach, and a Work Plan outlining how the current Stormwater Management Plan (SWMP) and any modifications will be implemented until a new SWMP is submitted to and approved by the Regional Water Board (anticipated in 2020).

A SWMP was developed for and is being implemented within the jurisdictional limits of the City and the urbanized areas of the County[2] regulated under the Region-wide Permit.[3] The SWMP represents the strategy for controlling the discharge of pollutants from the MS4 to the Maximum Extent Practicable (MEP) and includes a wide range of Best Management Practices (BMPs). This Annual Report focuses on the control measures and BMPs included in the currently approved SWMP.

On May 30, 2017, the City and County submitted their *Assessment and Prioritization of Water Quality Constituents in the Stockton Urbanized Area* (Assessment and Prioritization). This document identified the priority water quality constituents (PWQCs)—indicator bacteria, methylmercury, dissolved oxygen, and trash—that will be the focus of the program and the revised SWMP. The City and County met with Regional Water Board staff in June 2017 and received written comments on July 2, 2018. A revised Assessment and Prioritization was submitted on October 2, 2018.

On July 1, 2019, the City and County submitted a *Reasonable Assurance Analysis* (RAA), which built upon the Assessment and Prioritization and was developed to satisfy the requirements described in Region-wide Permit Parts V.E.3.a (*Identify Milestones, Strategies, and Activities for Storm Water Management Program*) and V.E.3.b (*Reasonable Assurance Analysis*). The revised SWMP will be structured to address the identified PWQCs and include milestones, strategies, and activities that will, over time (as identified through the RAA), ensure that the City's and the County's discharges will not cause or contribute to exceedances of applicable water quality objectives (WQOs) within the relevant receiving waters. The RAA results will assist in guiding the revision of the SWMP and identifying prioritized program elements, strategies, and activities that can be implemented based on available capital and operations and maintenance resources.

The Region-wide Permit requires Annual Reports (Provision V.F.4), Mid-Term Reports, and End-Term Reports (Provision V.F.5). The Mid-Term and End-Term Reports serve as the Annual Report for the years submitted. Effectiveness assessments (Provision V.E.5) are conducted as

---

[1] City of Stockton under Order No. R5-2016-0040-002; County of San Joaquin under Order No. R5-2016-0040-003.

[2] This jurisdictional area is also referred to as the Stockton Urbanized Area (SUA).

[3] The SWMP was approved by the Central Valley Regional Water Quality Control Board on October 9, 2009 (Resolution R5-2009-0105).

part of the Mid-Term and End-Term Reports. A summary of the annual reporting schedule is provided in **Table 1**.

Table 1. Annual Reporting Schedule (Due Oct 1)

Permit/Fiscal Year	Report Type & Reporting Period
Year 1 (2016-2017)	Annual Report (2016-2017) ***Complete***
Year 2 (2017-2018)	Annual Report (2017-2018) ***Complete***
Year 3 (2018-2019)	**Mid-Term Report (2016-2019)**
Year 4 (2019-2020)	Annual Report (2019-2020)
Year 5 (2020-2021)	End-Term Report (2016-2021)

This 2016-2019 Mid-Term Report is being submitted in accordance with Region-wide Permit Provisions V.F.4 and V.F.5 and includes the items listed in **Table 2**.

Table 2. Mid-Term Report Requirements

Report Requirement	Location
Provision V.F.4	
(a.i) A statement certifying that the Storm Water Management Program and Work Plan were implemented as approved.	Section 2
(a.ii) A summary of activities and tasks scheduled to be implemented in the upcoming year. If the Work Plan is still being implemented as described from the previous year, the Permittee may refer to the Work Plan.	Section 2
(a.iii) Any proposed minor modifications to the Storm Water Management Program; or any proposed Work Plan Modification.	Section 7
(a.iv) A completed certification statement, in accordance with the signatory requirements in Attachment H (Standard Permit Provisions and General Provisions).	Certification Statements
(c) Provision of water quality data collected.	Appendix C
(d) Additional requirements described in 40 CFR 122.42(c) (Attachment H, Standard Permit Provisions and General Provisions).	Certification Statements Section 3 Section 4 & Appendix B, D Section 5
Provision V.F.5	
(a) Cumulative summary of the Storm Water Management Activities conducted.	Section 5
(b) Status of progress towards attainment of SWMP milestones and implementation of activities.	Section 2
(c) Cumulative summary of the monitoring data.	Section 4

Report Requirement	Location
(d) A short-term SWMP effectiveness assessment (Part V.E.5) and the results of the monitoring assessment (Part V.E.1).	Section 6 Section 4
(f) The progress in implementing the Work Plan submitted with the SWMP, including the following:	N/A[a]
(1) Progress toward achieving the interim goals for the PWQCs for the Jurisdictional Runoff Area.	N/A
(2) Water quality improvement strategies implemented and/or no longer implemented during the current and past reporting period, and those planned to be implemented in the next reporting period.	N/A
(3) Proposed modifications to the water quality improvement strategies and their rationale.	N/A
(4) Approved modifications or updates incorporated into the SWMP and implemented in the Jurisdictional Runoff Area.	N/A
(5) Any other proposed modifications or updates to the SWMP.	N/A
(g) Fiscal analysis identifying source of funds and expenditures.	Section 3

[a] Not Applicable (N/A) because the Mid-Term Report was developed during the period when the revised SWMP and Work Plan are in progress (**Section 2**).

This page intentionally left blank for printing purposes

2 Implementation Statement

The City and County have developed a comprehensive approach for implementing the stormwater program within the Stockton Urbanized Area (SUA) consistent with the intent of the 2009 SWMP (and modifications thereto) and as described by the Work Plan submitted to (and as approved by) the Regional Water Board as a part of the NOI application package (NOI Work Plan).

During 2016-2019, the City and County implemented the stormwater program within the SUA consistent with the intent of the SWMP and as outlined by the NOI Work Plan submitted with the NOI package in November 2016 and included as **Appendix A**. Not all Control Measures included in the NOI Work Plan are reported on within **Section 5** and **Section 6** because there is no implementation data specifically collected for those activities (e.g., Program Coordination). During 2019-2020, until a revised SWMP and Work Plan are approved, the City and County will continue to implement the stormwater program within the SUA as outlined by the NOI Work Plan.

2.1 STATUS OF SWMP MILESTONES

The Region-wide Permit (Part V.F.5.b) requires that the status of SWMP milestones be documented in the Mid-Term and End-Term Reports:

> *b. Status of progress towards attainment of SWMP milestones and implementation of the strategies, and activities. If any SWMP milestones or final dates for attainment were not met, the Permittee shall provide detailed explanations.*

The Mid-Term Report has been developed during the period when the RAA (submitted July 1, 2019) is under review by the Regional Water Board, and the revised SWMP is in progress. As such, SWMP milestones have not yet been developed, and the Mid-Term Report instead focuses on the implementation of the current SWMP and its associated Control Measures and Performance Standards.

This page intentionally left blank for printing purposes

3 Fiscal Analysis

The City and County assessed the current NPDES expenditures, as well as the projected expenditures for the next fiscal year. The City's fiscal analysis for this year and the previous two years is provided in **Table 3**; the County's fiscal analysis is provided in **Table 4.**

This page intentionally left blank for printing purposes

Table 3. 2016-2019 Fiscal Analysis, City of Stockton

Program Element	Expenditures During Fiscal Year			Estimated Budget for Fiscal Year 2019-2020[a]
	2016-2017	2017-2018	2018-2019	
Program Management: Staff salaries, utility billing, phone charges, computer software/rentals, memberships, permit fees, indirect cost allocations, training, consultant contracts	$1,680,188	$ 1,478,952	$ 2,122,578	$ 1,714,511
Public Outreach: Staff salaries, industrial, commercial, and residential programs, including media and community events	$ 69,315	$ 4,008	$ 9,167	$ 20,464
Municipal Operations: Staff salaries, CIPs, and Storm Drain System Cleaning and Maintenance (includes Illicit Discharges, illegal connections mitigation, and clean-up)[b]	$ 3,010,371	$ 2,948,593	$ 4,221,379[c]	$ 4,082,283
Industrial and Commercial: Staff salaries, inspections, and follow-up inspections[d]	$ 61,170[e]	$ 3,281	$ 40,404	$ 54,683
Construction: Staff salaries, outreach	$ 61,170[e][f]	$ 3,281[g]	$ 3,493	$ 50,142
Planning and Land Development: Staff salaries	$ 93,875	$ 73,639	$ 56,196	$ 62,084
Water Quality Monitoring Programs: Includes Baseline Monitoring Program, Bioassessment Analysis, Smith Canal Bathymetry Study, Detention Basin Monitoring, BMP Effectiveness Study, Sediment Toxicity, Smith Canal/Mosher Slough Low DO13267 Letter Monitoring	$ 288,730	$ 257,441	$ 480,908	$ 309,171
Water Quality Based Programs: Includes Pesticide, Pathogen, Mercury, and DO Work Plans and Implementation	$ 63,299	$ 54,998	$ 87,305	$ 28,990
TOTAL	**$ 5,328,118**	**$ 4,824,191**	**$ 7,021,430**	**$ 6,389,328**

[a] Annually, the City breaks the overall budget down into individual Program Element expenditures. The City has developed and is implementing a consistent methodology for tracking stormwater program expenditures.

[b] Facility Pollution Prevention Plans (FPPPs) are paid for out of Public Works budget and are not a Stormwater Expense.

[c] As the City enhanced the consistency of its operations, CIP costs were incorporated into the Municipal Operations budget.

[d] The Industrial and Commercial Inspection Program is conducted in-house by Stormwater and Environmental Control Staff.

[e] The cost to develop a Websoft Inspection Tracking Database in 2016-2017 are divided evenly between the Industrial/Commercial and Construction program elements.

[f] Business and Construction outreach expenditures in 2016-2017 are included in the Public Outreach budget

[g] During the 2017-2018 reporting year, the City reorganized staffing positions to better align with permit objectives. During this process, the staff position for construction site inspector was vacant; therefore, there was no salary expenditure.

The City's stormwater program is funded primarily by a storm drain maintenance or user fee. The fee is $2.10/month per Equivalent Residential Unit.

Table 4. 2016-2019 Fiscal Analysis, County of San Joaquin

Program Element	Expenditures During Fiscal Year			Estimated Budget for Fiscal Year 2019-2020[c]
	2016-2017	2017-2018[a]	2018-2019[b]	
Program Management	$ 121,995	$ 87,437	$ 386,954	$ 600,000
Illicit Discharges	$ 14,528	$ 10,670	$ 1,506	$ 10,000
Public Outreach	$ 26,210	$ 11,076	$ 32,896	$ 37,000
Municipal Operations	$ 32,718	$ 53,184[d]	$ 19,459	$ 22,000
Industrial and Commercial	$ 28,344	$ 34,213	$ 25,729	$ 30,000
Construction[e]	$ 20,668	$ 7,676	$ 15,480	$ 16,000
Planning and Land Development	$ 10,610	$ 12,344	$ 5,589	$ 10,000
Water Quality Monitoring Program	$ 64,215	$ 22,847	$ 102,099	$ 143,000
Water Quality Based Programs	$ 5,441	$ 1,987	[f]	[f]
Program Implementation, Assessment, and Reporting	$ 137,375	$ 149,549	[g]	[g]
TOTAL	**$ 462,105**	**$ 390,983**	**$ 589,712**	**$ 868,000**

[a] Actual expenditures for fiscal year 2017-2018 do not reflect the County's shared costs of co-permittee expenditures with the City of Stockton; therefore, County expenditures in several program elements are understated.

[b] Actual expenditures for fiscal year 2018-2019 do not reflect the County's shared costs of co-permittee expenditures with the City of Stockton; however, they do include the County's 2015-2016 shared costs of the co-permittee expenditures with the City of Stockton.

[c] Estimated budget for fiscal year 2019-2020 assumes the payment of co-permittee costs to the City for fiscal years 2017-2018 and 2018-2019, and that payment of the 2019-2020 shared costs will be expensed in the subsequent year, due to the arrears billing.

[d] 2017-2018 expenditures for use of a second, new VacCon Truck for storm drain cleaning, a Stormwater expense, have been included in 2017-2018 reporting and are paid from the Road Maintenance budget.

[e] Responsibility for reviewing and implementing Stormwater Pollution Prevention Plan (SWPPP) Inspections for the San Joaquin County Road Projects were transferred to the Field Engineering division, which is responsible for construction activities for the department. Expenditures for reviewing and implementing SWPPPs were absorbed by the Field Engineering Division budget and were not available to report along with Stormwater expenses.

[f] Effective in fiscal year 2018-2019, actual expenditures associated with Water Quality Based Programs are reflected and reported in the Water Quality Monitoring Program expenditures.

[g] Effective in fiscal year 2018-2019, actual expenditures associated with Program Implementation, Assessment, and Reporting are reflected and reported in the Program Management expenditures.

The County's funding sources are summarized in **Table 5.**

Table 5. 2016-2019 Funding Sources, County of San Joaquin

Source	Funding for Fiscal Year 2016-2017, by Percentage	Funding for Fiscal Year 2017-2018, by Percentage	Funding for Fiscal Year 2018-2019, by Percentage	Estimated Funding for Fiscal Year 2019-2020, by Percentage
Assessment Fee/Special District Fund (Fee $35/parcel)	78.63%	76.41%	78.35%	82.29%
Inspection/plan check fees	9.63%	10.34%	13.21%	9.40%
Miscellaneous Revenue – Interest Income	2.04%	3.68%	5.87%	5.59%
Operating Transfers	9.70%	9.56%	2.58%	2.72%

The County's stormwater program is funded primarily by a storm drain maintenance or user fee assessed at $35/year per Equivalent Residential Unit.

This page intentionally left blank for printing purposes

4 Stormwater Quality Monitoring Program and Analysis of Monitoring Results

Provision V.E of the Region-wide Permit requires monitoring of urban runoff and receiving waters. In accordance with the previous permit, the City and County received approval from the Regional Water Board in 2015 for conducting an Alternative Monitoring Program (AMP).[4] The AMP is consistent with the proposed monitoring program from the Report of Waste Discharge (June 2012 ROWD),[5] meets the objectives of the Region-wide Permit, directs resources to the most critical water quality issues, and collects data to support management decisions to address those issues.

The primary objective of the AMP is to focus on Pollutants of Concern (POCs) as identified within the June 2012 ROWD and implement an intensive monitoring approach to determine the source(s) of pollutants in urban discharges. In addition to the AMP, the City and County were approved to participate in the Delta Regional Monitoring Program (Delta RMP) in lieu of conducting some of the local water quality monitoring.[6]

As a result, the revised monitoring program was initiated during the 2015-2016 reporting period and has been implemented since that time. In addition, the AMP will form the basis of the monitoring program that will be submitted as a part of the revised SWMP required by the Region-wide Permit (anticipated to be submitted in 2020). When the SWMP is revised, the monitoring program will shift its focus from the POCs to the PWQCs identified in the Assessment and Prioritization.

The monitoring program is a focused effort conducted within six (6) key water bodies on a rotating basis. The schedule for the staggered waterbody monitoring is shown in **Table 6**. The monitoring conducted since 2015 is summarized below:

- 2015-2016: Monitoring occurred on Mosher Slough, as reported in the *Municipal Stormwater Program 2015-2016 Annual Report;*
- 2016-2017: Monitoring occurred on the Calaveras River, as reported in the *Municipal Stormwater Program 2016-2017 Annual Report;*
- 2017-2018: Monitoring occurred on Duck Creek, as reported in the *Municipal Stormwater Program 2017-2018 Annual Report*; and
- 2018-2019: Monitoring occurred on Smith Canal, as reported in this 2016-2019 Mid-Term Report.

---

[4] *See* City of Stockton and County of San Joaquin. Submittal of Alternative Stormwater Monitoring Program (Order No. R5-2015-0024). June 10, 2015; Central Valley Regional Water Quality Control Board. Approval of City of Stockton and County of San Joaquin's 27 October Alternative Monitoring Program. 4 November 2015.

[5] National Pollutant Discharge Elimination System Municipal Stormwater Program – *Report of Waste Discharge & Proposed Stormwater Management Plan*, June 2012 (Section 2.7; Tables 2-42, 2-43, 2-44, 2-45, 2-46, and 2-47).

[6] Central Valley Regional Water Quality Control Board. Approval to Allow the City of Stockton and County of San Joaquin to Reduce Local Water Quality Monitoring and Participate in the Delta Regional Monitoring Program. 4 November 2015.

Table 6. AMP Staggered Waterbody Monitoring Schedule

Waterbody	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Mosher Slough[a]						
Calaveras River[a]						
Duck Creek[a]						
Smith Canal[a][b]						
Mormon Slough						
Five-Mile Slough						

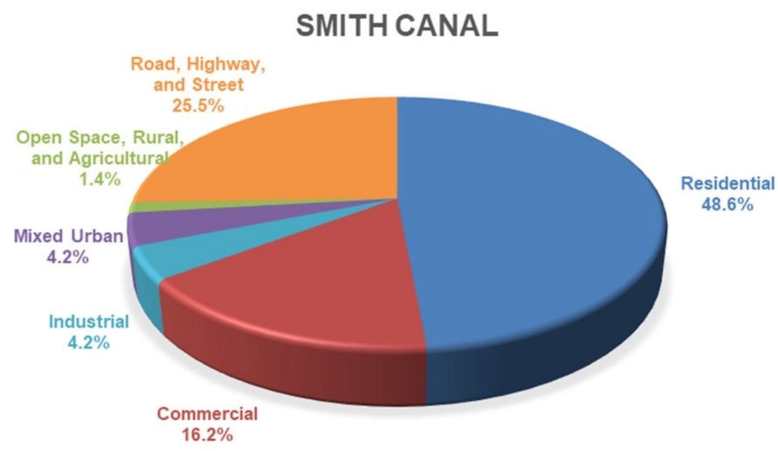
[a] Historical monitoring locations
[b] Blue indicates most recent year's monitoring location

Monitoring results for each previous fiscal year have been summarized in Annual Reports, as noted above. Constituents monitored for each waterbody are summarized in **Table 7**. A comprehensive summary of all waterbody monitoring will be included in the End-Term Report.

Table 7. Summary of Constituents Monitored by Waterbody from 2015-2019

Constituents Monitored	Monitoring Type	Waterbody			
		Mosher Slough	Calaveras River	Duck Creek	Smith Canal
Full suite of constituents (**Table 13**)	Water quality	X	X	X	X
Dissolved oxygen	Water quality	X	X	X	X
Methylmercury and mercury	Water quality	X	X	X	X
E. coli & fecal coliform	Water quality	X	X	X	X
Chlorpyrifos and pyrethroids	Water quality	X	X	X	X
Sediment toxicity & sediment chemistry	Sediment	X	X	X	X
Water column toxicity	Water column	X	X	X	X

4.1 WATERBODY AND DRAINAGESHED MONITORING



The monitoring conducted for 2018-2019 at Smith Canal is summarized below.

Located in the mid-western portion of the SUA, Smith Canal is a tidally influenced, shallow, east-west constructed freshwater slough that extends approximately 2.6 miles east from its confluence with the San Joaquin River to its upstream terminus at Yosemite Lake in central Stockton. The canal has an average depth of four to six feet (with a ten-foot maximum depth at the mouth) and an approximate ebb to flood stage difference of up to four feet.

Land use in the Smith Canal watershed is approximately half residential, with roads, highways, streets and commercial comprising the majority of the remaining land use.

Monitoring sites are shown in **Figure 1**. The constituents monitored at each site are identified in **Table 8**. The full list of constituents (**Table 13**) was monitored at the historical locations, SC-1 and SC-1R. Monitoring at other locations focused on the POCs within the Smith Canal drainageshed, which include:

- Indicator bacteria (E. coli and fecal coliform); and
- Pesticides (chlorpyrifos and pyrethroids).

Constituents identified in the Assessment and Prioritization as PWQCs were also monitored at the other locations:

- Dissolved oxygen (DO); and
- Methylmercury.

This page intentionally left blank for printing purposes

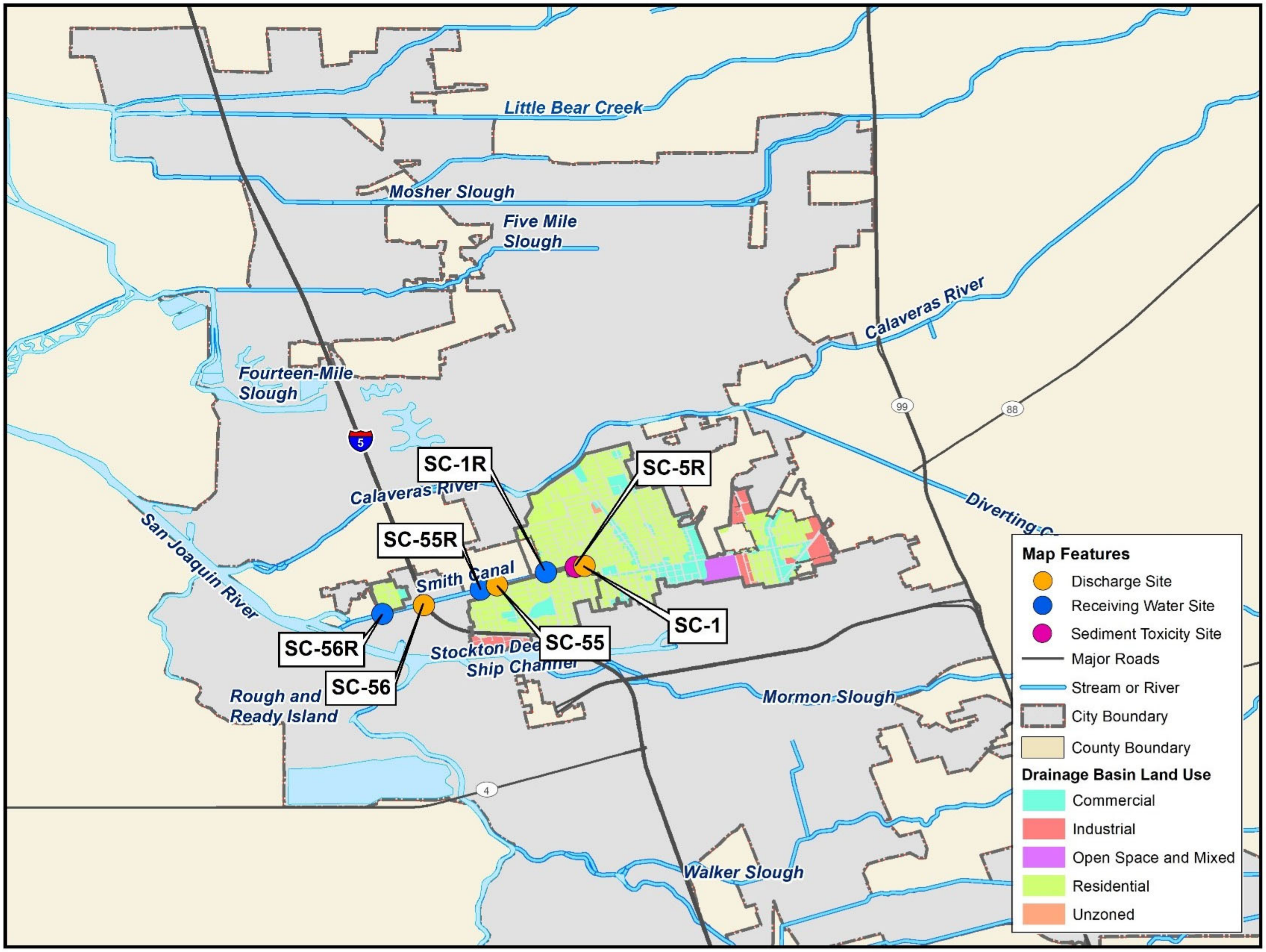


Figure 1. Smith Canal Monitoring Sites and Discharge Site Drainagesheds

Table 8. Smith Canal Monitoring Sites and Constituents Monitored

Constituents Monitored	Monitoring Type	Sites Monitored					
		SC-1[a]	SC-1R[a]	SC-55	SC-55R	SC-56	SC-56R
Full suite of constituents (**Table 13**)	Water quality	C	G				
Dissolved oxygen	Water quality	G	G	G	G	G	G
Methylmercury and mercury	Water quality	G	G	G	G	G	G
E. coli & fecal coliform	Water quality	G	G	G	G	G	G
Chlorpyrifos and pyrethroids	Water quality	G	G	G	G	G	G
Sediment toxicity & sediment chemistry[b]	Sediment		Sed[c]				
Water column toxicity	Water column		G				

G = Grab
C = Composite
Sed = Sediment
[a] Historical Monitoring Site
[b] Follow-up testing of sediment chemistry was performed when toxicity was determined to be statistically significant and a greater than or equal to 50% increase in *Hyalella Azteca* mortality was observed.
[c] Sediment toxicity was sampled at SC-5R.

Monitoring activities completed during 2018-2019 are summarized in **Table 9**. Monitoring efforts and results for these POCs are presented in the following sections.

Table 9. 2018-2019 Monitoring Program Accomplishments

Monitoring Program Activity	Status
Waterbody/Drainageshed Monitoring (Section 4.1)	
Outfall and Receiving Water Monitoring (Section 4.1.2)	• 3 wet weather events monitored at 3 urban discharge and 3 receiving water sites • 4 dry weather events monitored at 3 urban discharge and 3 receiving water sites
Rainwater/Atmospheric Deposition Monitoring (Section 4.1.3)	• Rainwater monitored at 3 locations during 3 wet weather events
Sediment Toxicity and Sediment Chemistry (Section 4.1.4)	• 1 wet weather event and 2 dry weather events monitored for sediment toxicity (SC-5R)
Water Column Toxicity (Section 4.1.5)	• 1 wet weather event monitored at the historical monitoring location (SC-1R) • 1 dry weather event monitored at the historical monitoring location (SC-1R)

4.1.1 Storm Tracking and Selection

Monitoring of stormwater runoff is a key component of the monitoring program[7] and requires a high level of coordination of equipment and field crews. Incoming storms are tracked and assessed against storm selection criteria (e.g., amount of precipitation, days since last rain event, duration of event) and the forecasted reliability that the storm will occur in the SUA. Wet weather monitoring is particularly challenging in the SUA, as rainfall forecasts are often unreliable due to the convective nature of incoming storms. In addition, because storms normally intersect Stockton traveling from the west to the east, it is not unusual for northern Stockton to receive substantial rainfall, while southern Stockton remains dry, or vice versa.

Wet weather events are timed to attempt to capture urban runoff impacts with the highest possible representation of the targeted storm event (i.e., high percent capture) using flow-based composite samplers at urban discharge stations when possible. Grab sampling techniques, when feasible, are conducted near the peak of storm event hydrographs, and are used at all receiving water stations. Due to standard method requirements, grab sampling is used for the following constituents when monitored:

- Oil and grease,
- Indicator bacteria,
- Mercury/methylmercury, and
- Pesticides.

[7] The Regional Permit defines the "monitoring year" as October 1 – September 30. Monitoring events are reported for the fiscal year, due to the time needed for data reporting and processing.

The daily total rainfall at the Stockton Metropolitan Airport[8] during the 2018-2019 monitoring year is shown in **Figure 2**. The total cumulative seasonal rainfall (relative to the historical average[9]) and monitoring event timing are also shown. Historical average annual rainfall at the Stockton Metropolitan Airport is 14 inches. The 2018-2019 monitoring year had above-average precipitation with 18.34 inches of rain, which is 131% of historical annual rainfall. Although the 2018-2019 wet season was wetter than average, the California Department of Water Resources classified the 2018 water year (ending September 30, 2018) as "below normal" for the San Joaquin Valley.[10] The 2019 water year classification is not expected to be determined until May 2020.

---

[8] https://cdec.water.ca.gov/cgi-progs/queryCSV?station_id=SOC&sensor_num=45&dur_code=D&start_date=7%2F1%2F2016&end_date=6%2F30%2F2017&data_wish=View+CSV+Data

[9] Based on 1981-2010 data. http://www.cnrfc.noaa.gov/awipsProducts/RNOWRKCLI.php

[10] http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST

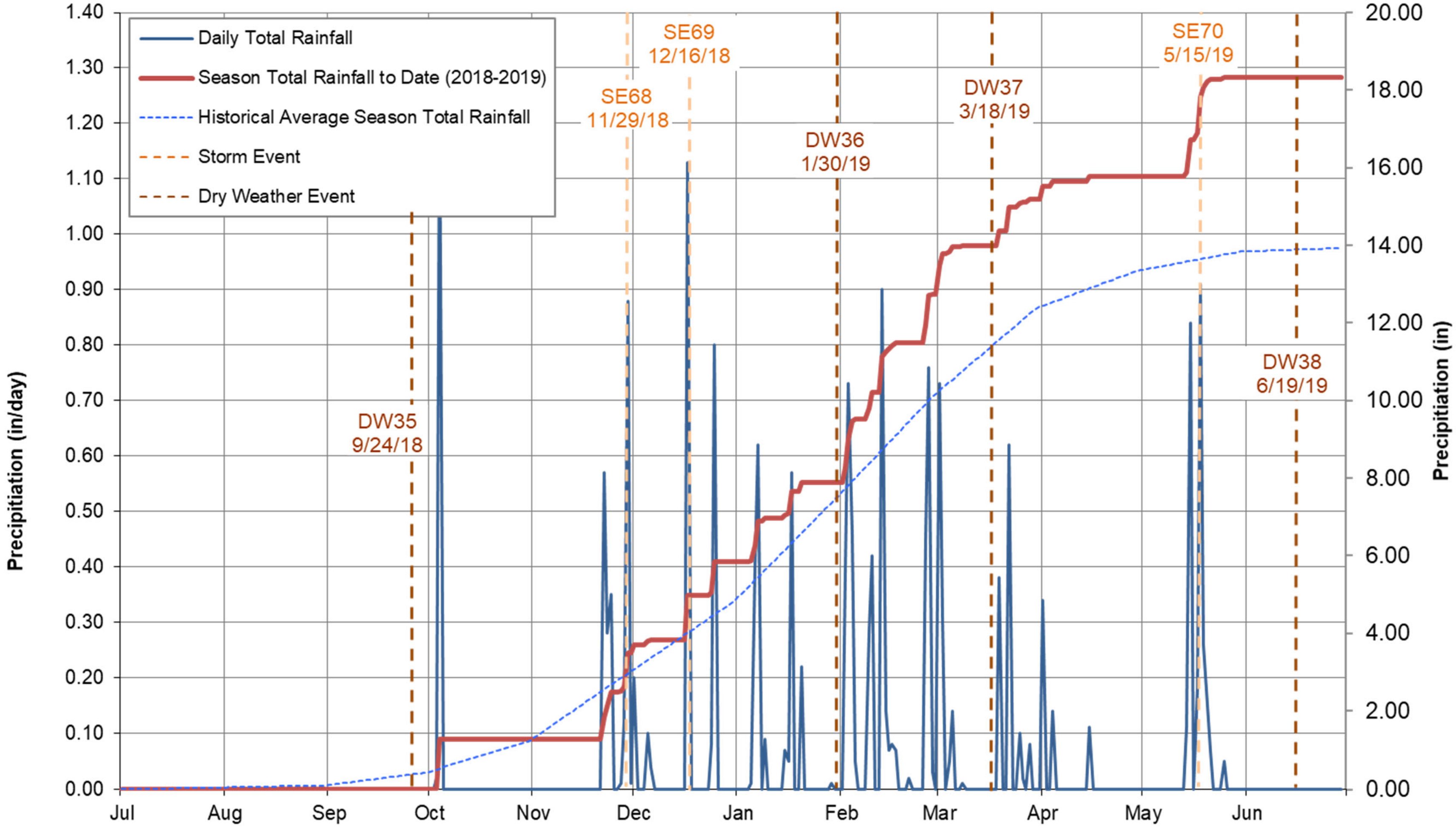


Figure 2. 2018-2019 Precipitation at Stockton Metropolitan Airport and Captured Monitoring Events

This page intentionally left blank for printing purposes

4.1.1.1 Details of 2018-2019 Wet Weather Monitoring Events

Each monitoring event is unique in terms of the antecedent weather conditions, flow in the receiving waterbody, field conditions, etc. Runoff quality is particularly influenced by the amount and intensity of rainfall and time of sampling with respect to the rainfall hydrograph. The conditions for wet weather events conducted during 2018-2019 are summarized in **Table 10**.

Table 10. Details of 2018-2019 Wet Weather Monitoring Events

Storm Events[a, b]	SE68 11/29/18	SE69 12/16/18	SE70 05/15/19
Time of first rain	11/29/2018 00:30	12/16/2018 16:10	5/15/2019 9:30
Time of last rain	11/29/2019 16:25	12/17/2018 5:25	5/16/2019 2:45
Total rain (in)	0.87	1.13	0.79
Antecedent Conditions			
Date of last precipitation	11/28/2018	12/6/2018	4/16/2019
Date of last storm > 0.1	11/28/2018	12/5/2018	4/16/2019
Days since last storm	<1 Day	11 Days	30 Days
Date of last storm > 0.25	11/24/2018	11/29/2018	4/2/2019
Days since last storm	5 Days	17 Days	44 Days
Cumulative rainfall to date (in)	3.49	4.97	16.72

[a] Precipitation data are collected at the Stockton Metropolitan Airport, available at: http://mesowest.utah.edu/cgi-bin/droman/download_ndb.cgi?stn=KSCK&year1=2014&day1=19&month1=6&hour1=&timetype=LOCAL&unit=0

[b] Per the AMP approved by the Regional Water Board, rainfall events of 0.15''- 0.25'' are targeted for the monitoring program.

4.1.2 Outfall and Receiving Water Monitoring

The monitoring program includes urban discharge outfall and receiving water monitoring. Urban discharge outfall monitoring characterizes the quality of urban runoff discharged from three storm drain outfalls along Smith Canal. In addition, receiving water monitoring characterizes the quality of the receiving waters within the SUA. Three receiving water sites were sampled downstream of the urban discharge sites. The co-located sites are used to help determine if the urban discharge is causing or contributing to contemporaneous in-stream exceedances of applicable water quality objectives.

Monitoring sites sampled in 2018-2019 are shown in **Table 8**.

- Urban discharge sites are labeled with a station and number code (e.g., SC-1).
- Receiving water sites are labeled with an "R" for receiving water (e.g., SC-1R).

The outfall and receiving water monitoring sites and predominant land uses are summarized in **Table 11.**

Table 11. 2018-2019 Outfall and Receiving Water Monitoring Sites on Smith Canal

Site Type	Station ID	Monitoring Site Description	Predominant Land Use	Drainage Area (acres)
Urban Outfall	SC-1	Outfall in Yosemite Lake, representing the upstream portion of Smith Canal	Mixed-use	1,866
	SC-55[a]	Outfall midway along Smith Canal	Residential	485
	SC-56[b]	Outfall at western end of Smith Canal	Mixed-use	81
Receiving Water	SC-1R	Smith Canal at east side of the Pershing Avenue bridge	Mixed-use	NA
	SC-55R[a]	Smith Canal at north side of Shimazu Drive west of the Buena Vista Avenue pump station	Residential	NA
	SC-56R[b]	Smith Canal at west side of pedestrian bridge, near Ryde Avenue and Shimazu Drive	Mixed-use	NA

NA = not applicable

[a] Previously named SC-2D (urban outfall) and SC-2R (receiving water).

[b] Previously named SC-3D (urban outfall) and SC-3R (receiving water).

Monitoring is generally conducted during three wet weather events and four dry weather events each year. During 2018-2019, monitoring was completed at each urban discharge and receiving water site three (3) times during the wet season and four (4) times during the dry season. The timeline of the events is shown in **Figure 2** (above). The sites sampled during each event are listed in **Table 12**. Wet weather events (labeled "SE" for storm event) and dry weather events (labeled "DW" for dry weather) are numbered sequentially from the initiation of monitoring wet weather and dry weather events (in 1992 and 2004, respectively).

Table 12. Sites Sampled and Type of Sample Collected in 2018-2019

Site Type	Station ID	DW35 09/24/18	SE68 11/29/18	SE69 12/16/18	DW36 01/30/19	DW37 03/18/19	SE70 05/15/19	DW38 06/19/19
Urban Discharge	SC-1	G	G[a]	C	G	G	C	G
	SC-55	G	G	G	G	G	G	G
	SC-56	G	G	G	G	G	G	G
Receiving Water	SC-1R	G	G	G	G	G	G	G
	SC-55R	G	G	G	G	G	G	G
	SC-56R	G	G	G	G	G	G	G

C = Composite
G = Grab
[a] Composite samples were not collected due to equipment issues.

4.1.2.1 Monitored Constituents and Analytical Methods

The constituents and corresponding analytical methods for urban discharge and receiving water monitoring comply with the Method Detection Limits (MDLs) specified in the monitoring program. During the 2018-2019 events, samples at the historical sites (SC-1 and SC-1R) were analyzed for the constituents shown in **Table 13**.[11] Samples at all other sampling locations on Smith Canal were analyzed for a targeted set of constituents, based on POCs identified in the June 2012 ROWD, as shown in **Table 8**.

[11] Some questions exist as to the applicability of these water quality objectives and criteria to stormwater discharges because an appropriate Water Code section 13241 analysis was not performed on the state water quality objectives used herein and an implementation plan relative to stormwater discharges was not prepared under Water Code section 13242. In addition, the State Water Resources Control Board (SWRCB) has determined that the federal water quality criteria, such as are contained in the CTR, do "not apply to regulation of storm water discharges." *See* SWRCB Policy for Implementation of Toxics Standards for the Inland Surface Waters, Enclosed Bays, and Estuaries of California at pg. 1, fn 1; *see also* CTR Preamble, 65 Fed. Reg. 31682 (5/18/00), which does not identify municipal stormwater as a potentially affected entity. Moreover, these objectives and criteria were never intended to be applied to stormwater discharges at the end of pipe without dilution and mixing being considered. Nevertheless, these objectives and criteria are utilized herein for the purposes of this report.

Table 13. Constituent Analysis for Outfall and Receiving Water Monitoring at Historical Sites

Constituents	Method Detection Limits (MDLs)	WQO(s)	WQO Source
Conventional Pollutants	**mg/L**		
Oil and Grease	5	Narrative[a]	Basin Plan[b]
pH	0-14	6.5-8.5	Basin Plan
Dissolved Oxygen	Sensitivity to 5 mg/L	>5-6[c]	Basin Plan
Field Measurements			
Date	mm/dd/yyyy	--	--
Sample Time	hr:min (regular time)	--	--
Weather	degrees F	--	--
Water Temperature	degrees C	--	--
Bacteria	**MPN/100 mL**		
Fecal coliform	<20	400	Stockton Urban Waterbodies Pathogen TMDL (Basin Plan)
E. coli	<20	235[d]	
General	**mg/L**		
Turbidity	0.1 NTU	--	--
Total Suspended Solids	2	--	--
Total Dissolved Solids	2	500, 1,000, 1,500	Secondary MCL (Basin Plan)
Total Organic Carbon	1	--	--
Biochemical Oxygen Demand	2	--	--
Chemical Oxygen Demand	20-900	--	--
Total Kjeldahl Nitrogen	0.1	--	--
Alkalinity	2	--	--
Total Ammonia-Nitrogen	0.1	--	--[e]
Specific Conductance	1 µmhos/cm	1,000 900, 1,600, 2,200	Bay-Delta WQ Plan[f] Secondary MCL (Basin Plan)
Total Hardness	2	--	--
Metals	**µg/L**		
Aluminum, Dissolved	50	750	EPA Criteria Guidance[g]
Aluminum, Total	50	200	Secondary MCL[h] (Basin Plan)
Copper, Dissolved	0.5	Hardness-dependent	CTR[i]
Iron, Total	100	300	Secondary MCL (Basin Plan)
Lead, Dissolved	0.5	Hardness-dependent	CTR
Mercury, Total	0.5 ng/L	50 ng/L	CTR
Methylmercury, Total	0.05 ng/L	--	Basin Plan[j]
Zinc, Total	1	Hardness-dependent	CTR
Pesticides	**ng/L**		
Chlorpyrifos	10	15	Basin Plan
Pyrethroids	5	--	--[k]

[a] The oil and grease narrative WQO states "Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise

adversely affect beneficial uses." For the purposes of the exceedance assessments, a value of 0 is used as a very conservative comparison.

[b] Water Quality Control Plan for the Sacramento River and San Joaquin River Basins.

[c] The WQO is >6 mg/L September 1 – November 30.

[d] Not an objective, but the Stockton Urban Waterbodies Pathogen TMDL single sample maximum water quality target.

[e] The USEPA WQOs are dependent on pH and temperature; therefore, no standard value can be specified for stormwater events.

[f] The San Francisco Bay/Sacramento-San Joaquin Delta Estuary contains the WQO for the areas within the Delta Legal Boundary (which may be revised). The Basin Plan contains the WQO for the areas outside of the Delta Legal Boundary.

[g] United States Environmental Protection Agency Guidance Recommended Ambient Water Quality Criteria.

[h] United States Environmental Protection Agency Secondary Maximum Contaminant Level.

[i] 40 C.F.R. Section 138.38(b) California Toxics Rule.

[j] The methylmercury objective is a tissue-based objective. For the Sacramento-San Joaquin Delta and Yolo Bypass waterways listed in Appendix 43 (including waterways in the Stockton Urbanized Area), the average methylmercury concentrations shall not exceed 0.08 and 0.24 mg methylmercury/kg, wet weight, in muscle tissue of trophic level 3 and 4 fish, respectively (150-500 mm total length). The average methylmercury concentrations shall not exceed 0.03 mg methylmercury/kg, wet weight, in whole fish less than 50 mm in length.

[k] The Central Valley Pyrethroid Pesticide Basin Plan Amendment (BPA) was approved by the USEPA Office of Administrative Law on February 19, 2019 and became effective during the 2018-2019 monitoring year. The BPA establishes pyrethroid concentration goals and pyrethroid triggers based on the sum of freely dissolved individual pyrethroid concentrations divided by their concentration goals. Pyrethroid concentrations in future monitoring years will be evaluated using the Basin Plan pyrethroid triggers.

The Region-wide Permit requires the submittal of water quality monitoring data to the Regional Water Board. As such, all water quality monitoring data are submitted in **Appendix B**. The Region-wide Permit also requires that the water quality monitoring data be uploaded to the California Environmental Data Exchange Network (CEDEN) or the Storm Water Multi-Application Reporting and Tracking System (SMARTS) database, when available. Notably, both databases are not currently available to accept the formatted data, which requires Regional Water Board coordination with the Surface Water Ambient Monitoring Program (SWAMP) at the State Water Resources Control Board. When these databases are capable of receiving the water quality monitoring data, the receiving water and urban discharge data would be uploaded to the SMARTS database, but only the receiving water data would be uploaded to CEDEN.

In order to prepare the data, the Permittees have been working with the three analytical laboratories (Fruit Growers Laboratory, Caltest, and Pacific EcoRisk) as well as Regional Water Board staff to format the data to be compatible with the requirements for the electronic upload. Due to time needed to coordinate with the analytical laboratories, the water quality monitoring data from 2016-2017 and 2017-2018 along with the data from 2018-2019 are anticipated to be submitted to the Regional Water Board in CEDEN-compatible format, and uploaded to CEDEN, by the end of 2019.

The waterbody/drainageshed monitoring results include the following information:

- Sample location
- Station type (urban discharge [UD] or receiving water [RW])
- Sampling method (composite or grab)
- Sample date and time
- Sample result
- MDLs
- Reporting Limits (RLs)

- Data qualifiers
- Comparison to the lowest applicable water quality objective (WQO)
- The name of the analyzing laboratory

For analyses that were non-detect (ND), the value is reported as less than the MDL, where the MDL is provided by the lab; otherwise, the value is reported as less than the RL.

Monitoring results for the constituents identified as water quality POCs for Smith Canal are presented graphically to provide an overview of the characterization of Smith Canal:

- Dissolved oxygen (**Figure 3**);
- *E. coli* and fecal coliform (**Figure 4**);
- Methylmercury and total mercury (**Figure 5**); and
- Chlorpyrifos (**Figure 6**) and pyrethroids (**Figure 7**)

Data for the POCs and PWQCs are summarized in tables in **Appendix C**. A complete assessment of monitoring results from Smith Canal within the context of all monitored waterbodies, including data from the historical monitoring locations and an assessment of trends, will be provided in the End-Term Report (for Fiscal Year 2020-2021). For the purposes of this report, general observations are provided below:

- Dissolved oxygen (DO):
    - With a few exceptions, the DO WQOs were met.
    - DO concentrations were below the minimum WQO during the first and last dry weather events, DW35 and DW38, at discharge locations SC-55 and SC-56.
    - All receiving water concentrations were above the minimum WQO.
    - All concentrations measured during wet weather were above the minimum WQO.
- *E. coli* are a more appropriate indicator than fecal coliform to evaluate risk to human health, as noted in the 2012 United States Environmental Protection Agency Recreational Water Quality Criteria,[12] and the State Water Board's 2018 Bacteria Provisions.[13]
    - Frequent *E. coli* exceedances occurred at discharge and receiving water sites, primarily during storm events.
    - As is typical, indicator bacteria concentrations were generally higher during storm events than during dry weather events.
- Methylmercury concentrations remained at or below 1 ng/L at all sites, and below 0.1 ng/L at the receiving water sites SC-1R and SC-56R.

---

[12] United States Environmental Protection Agency. 2012. Recreational Water Quality Criteria. Office of Water, 820-F-12-058.

[13]https://www.waterboards.ca.gov/bacterialobjectives/docs/bdmtg_aug7_bacteria_2nd_iswebe_bacteria_provisions_2nd_rev_proposed.pdf

- Chlorpyrifos concentrations were below the WQO in all discharge and receiving water samples. Most results were non-detect.
- Pyrethroids[14]:
  - Pyrethroids were rarely detected in the receiving water monitoring location SC-56R.
  - A higher number of individual pyrethroid compounds, and higher concentrations of pyrethroids, were detected in discharge samples than receiving water samples.
    - Samples at discharge site SC-55 had the greatest number of individual pyrethroids and most consistent detections.
  - Bifenthrin was detected most frequently and at the highest concentrations. Discharge site SC-1 had the highest concentrations of bifenthrin.

[14] The BPA became effective during the 2018-2019 monitoring year. The measurements of total and dissolved organic carbon, necessary for estimating the dissolved concentration of pyrethroids, were not part of the 2018-2019 monitoring program but will be added for pyrethroid characterization monitoring in future years.

This page intentionally left blank for printing purposes

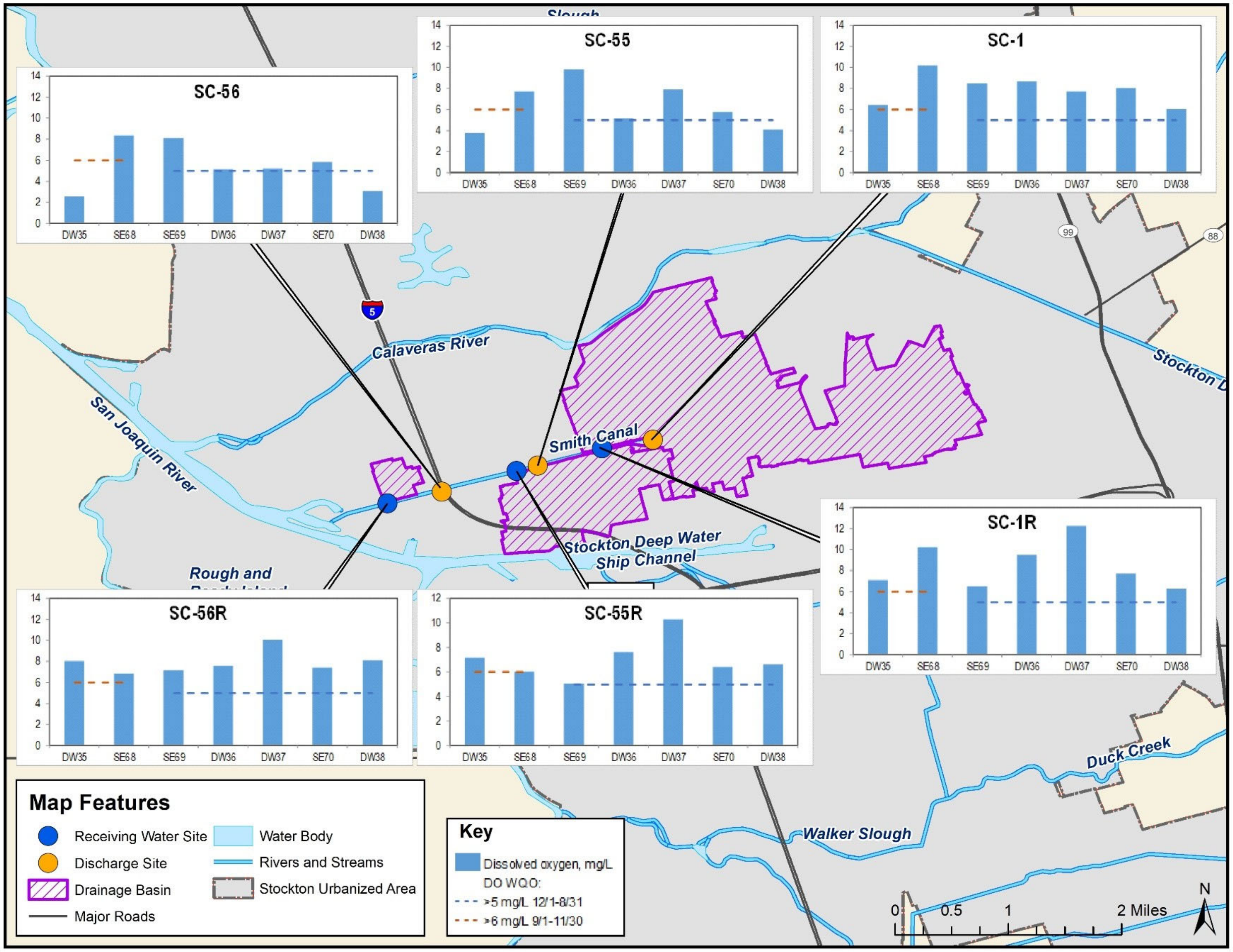


Figure 3. Smith Canal 2018-2019 Dissolved Oxygen Concentrations (mg/L)

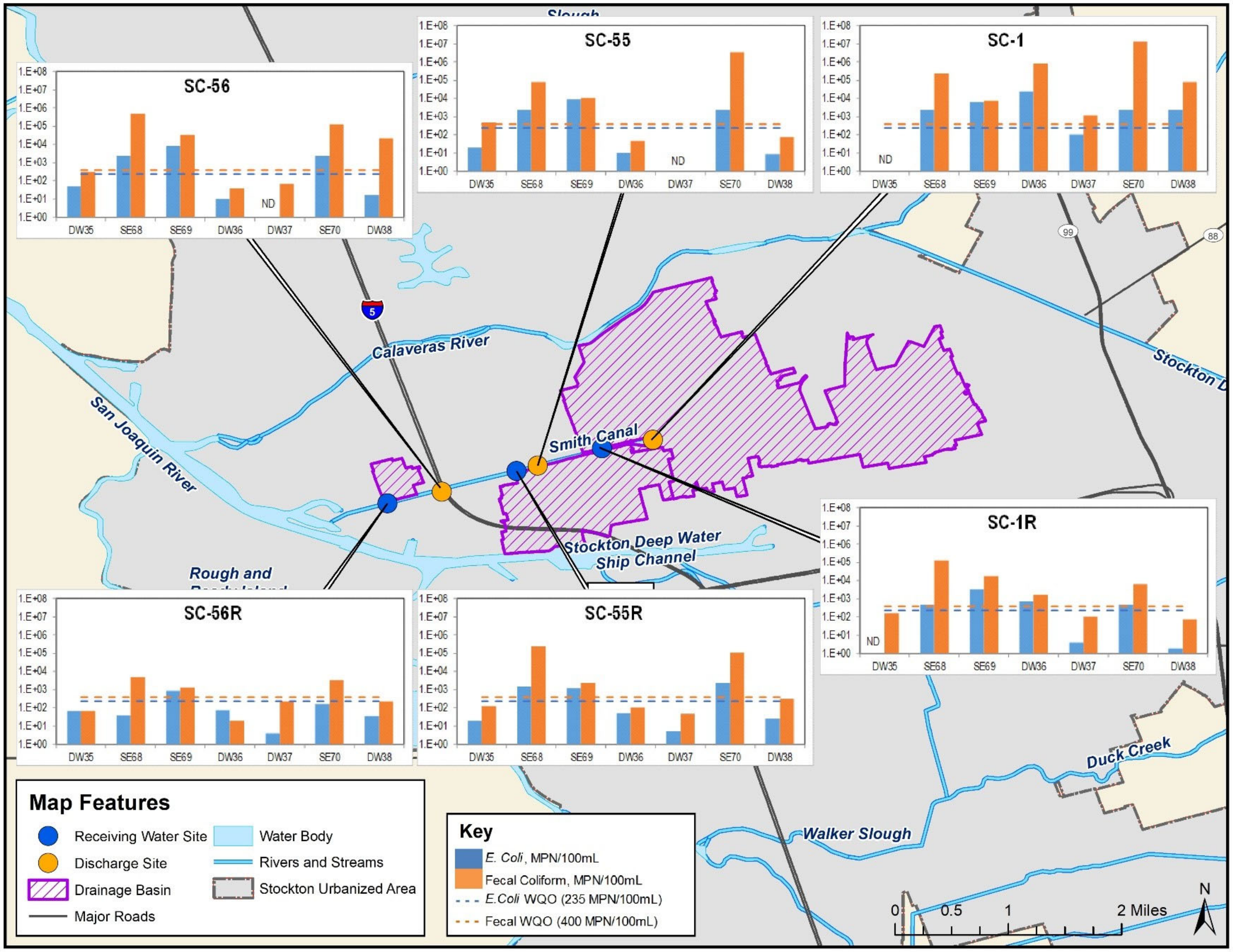


Figure 4. Smith Canal 2018-2019 *E. coli* and Fecal Coliform Concentrations (MPN/100 mL)

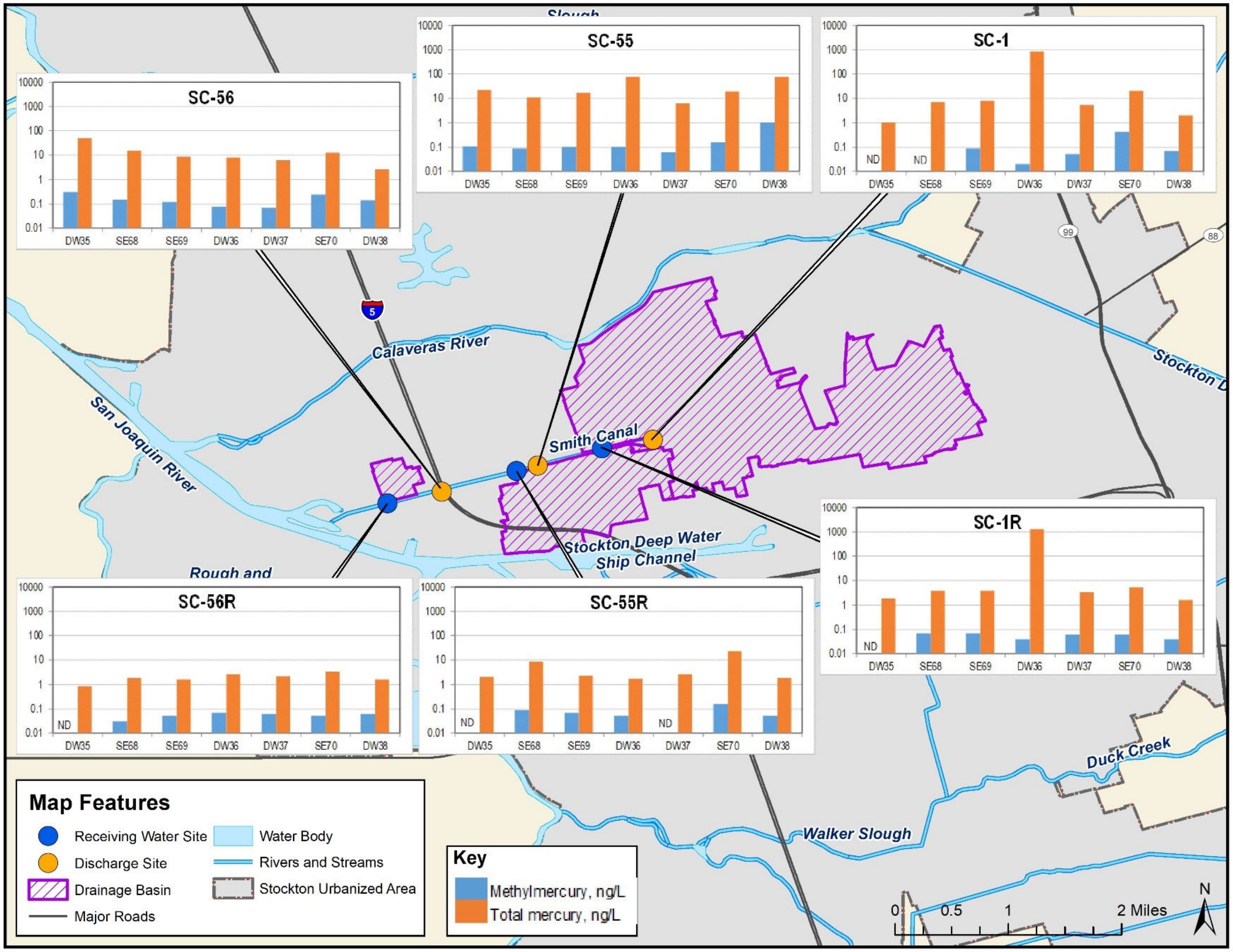


Figure 5. Smith Canal 2018-2019 Methylmercury and Total Mercury Concentrations (ng/L)

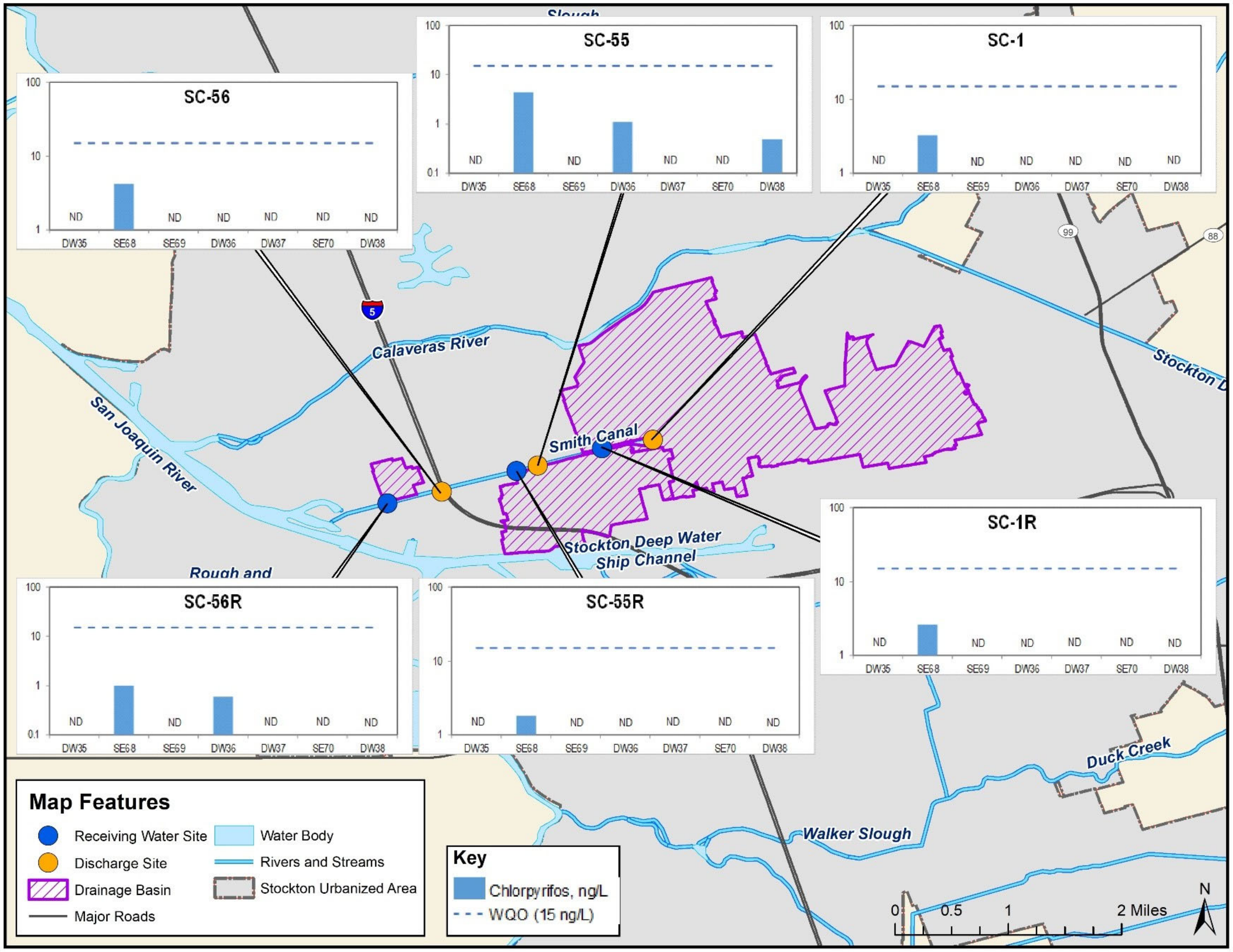


Figure 6. Smith Canal 2018-2019 Chlorpyrifos Concentrations (ng/L)

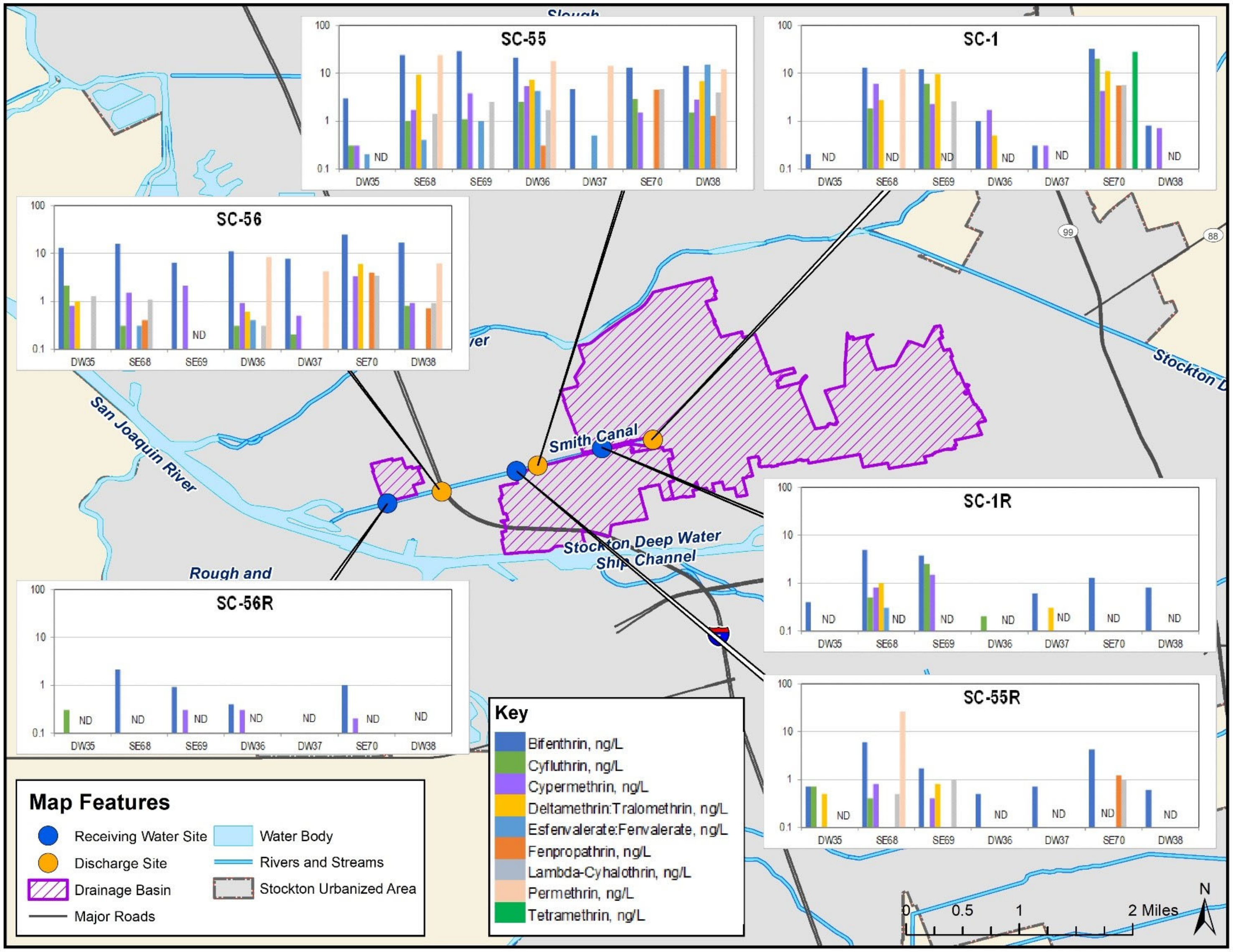


Figure 7. Smith Canal 2018-2019 Pyrethroid Concentrations (ng/L)

This page intentionally left blank for printing purposes

4.1.3 Rainwater/Atmospheric Deposition Monitoring

During 2018-2019, rainwater/atmospheric deposition was monitored for dissolved oxygen, methylmercury, total mercury, and pesticides (chlorpyrifos and pyrethroids) at three representative locations in the SUA. These three locations are shown in **Figure 8**.

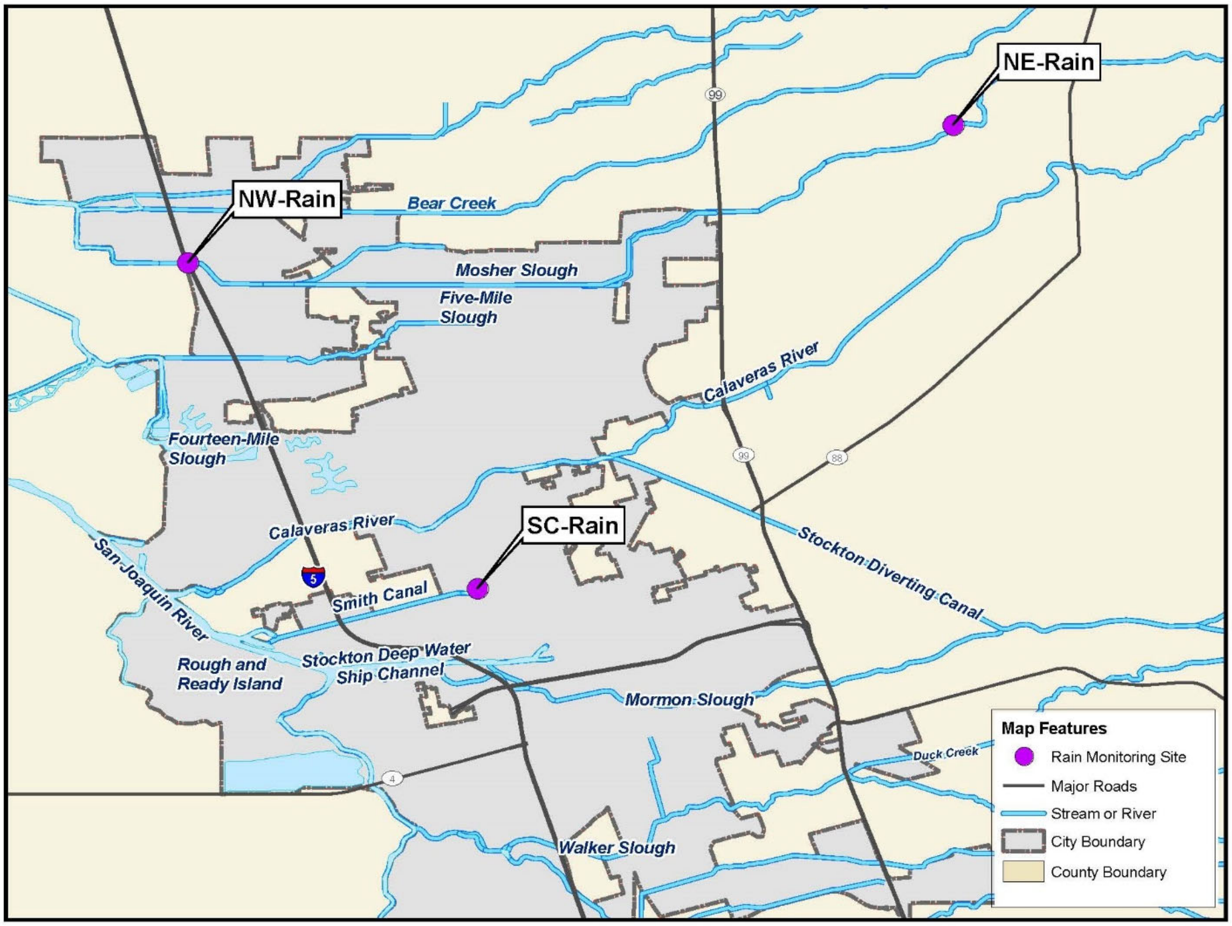


Figure 8. Rainwater/Atmospheric Deposition Monitoring Locations

The monitoring sites include the following:

- NW-Rain – Located along Mosher Slough in the northwest corner of the SUA. This site has been historically monitored for the Pesticide Plan and is representative of atmospheric deposition generated within and outside of the SUA.
- NE-Rain – Located along Mosher Slough outside of the SUA, to the northeast. This site has been historically monitored for the Pesticide Plan and is representative of atmospheric deposition generated outside of the SUA.
- SC-Rain – Located at the Legion Park Pump Station, in the center of the SUA. This site is representative of atmospheric deposition generated within the SUA.

During 2018-2019, rainwater was monitored at all three sites during all three storm events sampled for outfall and receiving water monitoring. Rainwater monitoring results are shown in **Figure 9**.

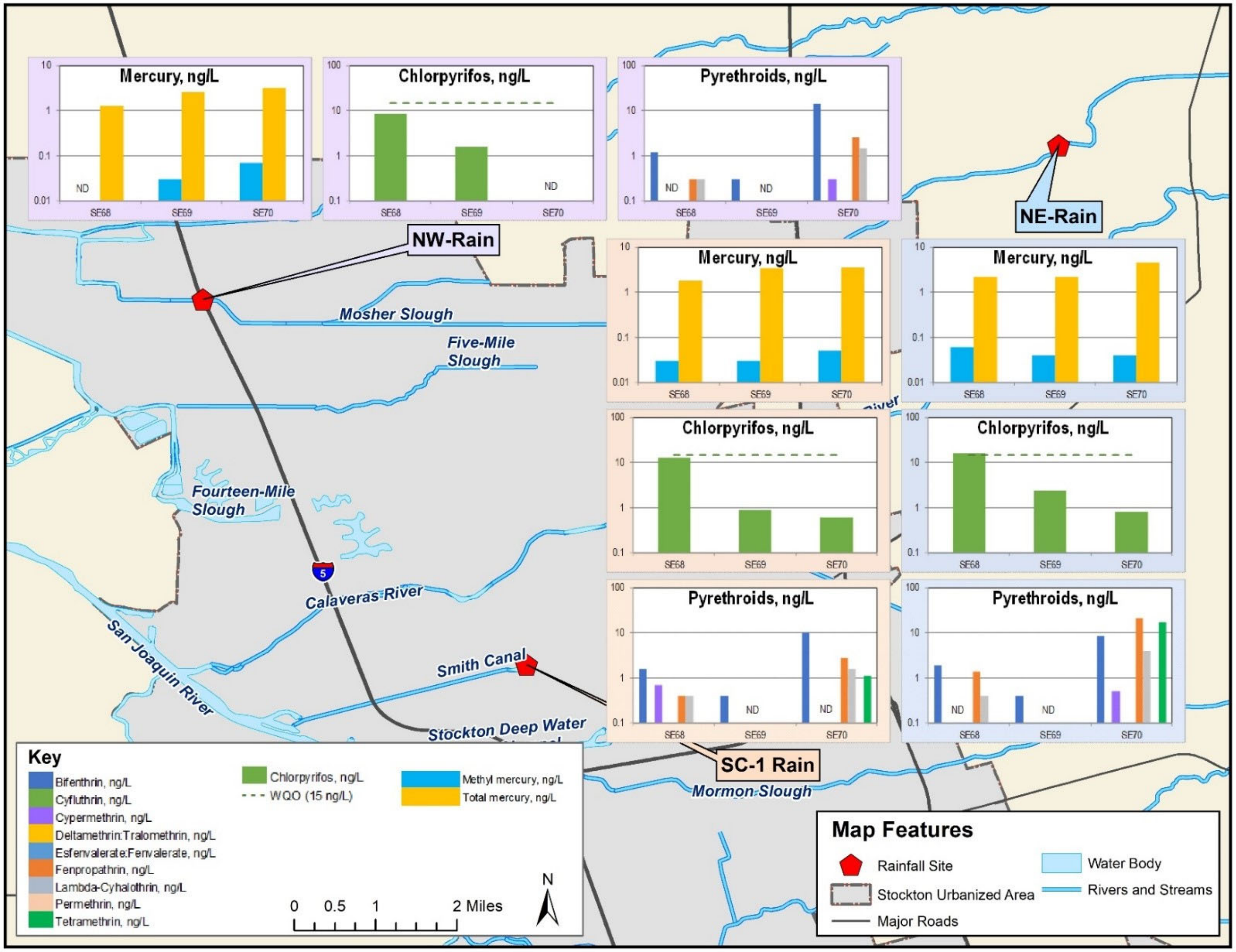


Figure 9. 2018-2019 Rainwater/Atmospheric Deposition Monitoring Results

This page intentionally left blank for printing purposes

General observations are summarized below:

- Dissolved oxygen remained well above the minimum WQO in all rainwater samples.
- Methylmercury and total mercury:
    - Methylmercury concentrations in rainwater were similar at all three locations; methylmercury concentrations were also similar in magnitude to those observed in urban runoff and receiving water samples.
    - Total mercury was detected at lower concentrations in rainwater than in urban runoff or receiving water samples, at concentrations below the WQO.
- Pesticides:
    - Chlorpyrifos was detected in rainwater in all but one sample, and at a concentration above the WQO during the first storm event in the NE rainwater location.
    - Pyrethroids were detected with similar frequencies and at similar concentrations at all three rainwater locations. Pyrethroid levels were highest during the final storm event, which occurred later in the season than is typical (May 16).

4.1.4 Sediment Toxicity and Sediment Chemistry

The monitoring program specifies that sediment toxicity be monitored for receiving water sites on each historical waterbody. Monitoring is performed 2-4 days following one storm event and during two dry weather events. Sediment samples are analyzed using the USEPA standardized ten-day sediment toxicity testing method[15] for freshwaters using *Hyalella azteca*, and sediment total organic carbon (TOC) and grain size are reported. If toxicity is determined to be statistically significant, and a greater than or equal to 50% increase in *Hyalella azteca* mortality[16] is observed, follow-up testing of sediment chemistry is performed for the parameters specified in **Table 14**.

[15] USEPA 2000. Methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates. EPA 600/R-99/064. Office of Research and Development. Washington, DC.

[16] City of Stockton and County of San Joaquin. Sediment Toxicity Work Plan. March 27, 2009, revised June 2009.

Table 14. Sediment Chemistry Constituents to be Monitored

Pesticides in Sediment[a]	Target Reporting Limit
Organophosphate Pesticides	**µg/kg**
Chlorpyrifos	0.01
Diazinon	0.05
Pyrethroid Pesticides[b]	**ng/g**
Bifenthrin	1
Cyfluthrin-1	3
Cyfluthrin-2	3
Cyfluthrin-3	3
Cyfluthrin-4	3
Cypermethrin-1	3
Cypermethrin-2	3
Cypermethrin-3	3
Cypermethrin-4	3
Deltamethrin	2
Esfenvalerate/Fenvalerate-1	2
Esfenvalerate/Fenvalerate-2	1
Lambda-cyhalothrin-1	1
Lambda-cyhalothrin-2	4
Permethrin	4

[a] Follow-up testing of sediment chemistry will be performed if toxicity is determined to be statistically significant and a greater than or equal to 50% increase in *Hyalella azteca* mortality is observed.

[b] Pyrethroid isomers are typically reported as totals instead of the individual isomers, except where individual isomers may be obtained.

During 2018-2019, sediment monitoring was completed at SC-5R during three events:

- Four days after SE68 rain event terminated, 12/03/18
- DW35, 09/24/18
- One day after DW38, 06/20/19

Sediment toxicity results are summarized in **Table 15** and included in **Appendix D**.

Samples from all events showed significant reductions in *H. azteca* survival; however, follow-up testing of sediment chemistry was only triggered by dry weather event DW38, as the reduction in mortality was greater than 50%. The sediment chemistry testing results from event DW38 are summarized below:

- The sample showed significant toxicity likely attributable to pesticides (pyrethroids). Survival of *Hyalella azteca (H. azteca)* at location SC-5R was 27.5%, a reduction relative to the control of 70.0%. This reduction in survival triggered follow-up analysis of pyrethroids in sediment. Sediment chemistry results are shown in **Table 16**. Multiple pyrethroids were detected, with bifenthrin present at the highest concentration. Pyrethroid concentrations were consistently lower in the field duplicate.

Table 15. 2018-2019 Sediment Toxicity Results at Smith Canal

Sample ID	Date	Toxicity Present Relative to Lab Control?		Mean % Survival	Reduction in Survival (%)	Mean Growth (mg)
		H. azteca Survival	H. azteca Growth			
SE68						
Control	-	-	-	100	-	0.080
SC-5R	12/03/18	**Yes**	No	63.8	36.2	0.105
SC-5R FD	12/03/18	**Yes**	**Yes**	82.5	17.5	0.042
DW35						
Control	-	-	-	100	-	0.094
SC-5R	09/24/18	**Yes**	**Yes**	92.5	7.5	0.063
SC-5R FD	09/24/18	**Yes**	**Yes**	92.5	7.5	0.052
DW38						
Control	-	-	-	97.5	-	0.054
SC-5R	06/20/19	**Yes**	No	27.5	70.0	0.122
SC-5R FD	06/20/19	**Yes**	No	26.2	71.3	0.208

FD = Field Duplicate
Bold indicates that toxicity observed was statistically significant.

Table 16. Follow-Up Sediment Chemistry Results for Event DW38 at Smith Canal

Sample ID	Result (ng/g)	
	SC-5R	SC-5R FD
Organophosphate Pesticides		
Chlorpyrifos	ND	ND
Diazinon	23	22
Pyrethroid Pesticides		
Allethrin	ND	ND
Bifenthrin	120	110
Cyfluthrin	12	10 J
Cypermethrin	8.0 J	6.7 J
Deltamethrin:Tralomethrin	28	26
Esfenvalerate:Fenvalerate	ND	ND
Fenpropathrin	ND	ND
Lambda-Cyhalothrin	7.7 J	6.9 J
Permethrin	88	73
Tau-Fluvalinate	12	7.8 J
Tetramethrin	ND	ND

FD = Field Duplicate
J = Concentration is between the MDL and the RL and is therefore an estimated value.
ND = Not Detected

4.1.5 Water Column Toxicity Monitoring

The monitoring program specifies that water column toxicity be monitored during one storm event and one dry weather event when the historical monitoring location is sampled (i.e., SC-1R). Water column toxicity is conducted in accordance with USEPA methods[17] using short-term chronic toxicity tests based on two freshwater species: 1) Three-brood (6-8 day) survival and reproduction test with water fleas (the invertebrate *Ceriodaphnia dubia*); and 2) Seven-day survival and growth test with larval fathead minnows (*Pimephales promelas*). If 100% mortality of either species is detected in a receiving water sample within 24 hours of test initiation, dilution series testing (from 6.25% to 100% receiving water) is initiated to determine if toxicity was persistent. If statistically significant toxicity is detected, and a greater than or equal to 50% increase in fathead minnow or *Ceriodaphnia dubia* mortality or reduction in *Ceriodaphnia dubia* mortality compared to the laboratory control is observed, a Toxicity Identification Evaluation (TIE) is conducted.

During 2018-2019, water column toxicity was monitored at site SC-1R during one storm event and one dry weather event:

- SE68, 11/29/18
- DW38, 06/19/19

During SE68, no significant reductions in *Ceriodaphnia dubia* survival or reproduction were observed. During DW38, there was a significant reduction in *Ceriodaphnia dubia* reproduction. No significant reductions in fathead minnow survival or growth occurred in any of the water samples. The water column toxicity results are included in **Appendix E**.

4.2 DATA QUALITY EVALUATION

Quality Assurance/Quality Control (QA/QC) refers to the process of reviewing lab and "field" initiated checks on the sampling and analytical process. These checks, which include field blanks, method blanks, field duplicates, lab duplicates, and matrix spike/matrix spike duplicates (MS/MSD), and data review are used to confirm that data are of high quality. Lab reports are initially screened by the field monitoring contractor for missing analytical data (both environmental and QA/QC), holding time exceedances, discrepancies in analytical methods or detection limits, and any apparent out-of-range environmental results. If the analytical work appears to be missing any requested analyses, the lab is asked to complete the missing analyses, if it is possible to do so within the specified holding time. Periodically, data analyses are requested even if samples exceed the specified hold time. Data qualifiers are appended to the environmental data points where appropriate by applying the data quality objectives provided by the laboratories. The QA/QC process allows for the identification of isolated incidents of out-of-range lab and sampling performance, but, more importantly, the process allows for the identification of potential long-term trends in lab and sampling performance. An important and ongoing component of the QA/QC program is to report and correct any identified problems.

[17] USEPA 2002. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms, 4th Edition. EPA-821-R-02-013. Office of Water. Washington, DC.

Overall, no significant problems with data quality were identified during 2018-2019. Isolated instances of constituents detected in field blanks, field duplicates not meeting relative percent difference standards (RPD), and lab QA/QC issues occurred. However, when conducting such a large monitoring and reporting program, field, lab, and/or analytical issues occasionally arise. In general, the data collected and reported are considered of high quality and suitable for data analysis with the qualifications noted in the **Appendix B** data report. The main qualifiers used are summarized in **Table 17**.

Table 17. Definitions of Commonly Used QA/QC Qualifiers and Instances of Application

Qualifier	Definition of Qualifier	Qualifier Description/Applicability, 2018-2019
FB	The concentration of a given constituent was detected in the field blank. The associated environmental sample taken at the same site is considered an estimate.	• A field blank was taken at one site for all constituents during each monitoring event. If no constituents were detected in field blank samples, the FB qualifier was not used.
FD	The Relative Percent Difference (RPD) between the concentrations of a given constituent in the field duplicate and the associated environmental sample was outside the acceptable limit. This indicates that the duplicability and precision of the results for this constituent may be low.	• A field duplicate was taken at one site for all constituents during each monitoring event. All RPDs were within acceptable limits, so the FD qualifier was not used.
J	The concentration of a given constituents is between the MDL and the RL and is, therefore, an estimated value. The J qualifier does not indicate poor data quality because all the RLs used met permit requirements.	• The J-flag qualifier is common in all data in the monitoring program and was frequently applied.
ND	A given constituent was not detected and is recorded as < MDL. The ND qualifier does not indicate poor data quality, but rather indicates that a constituent was simply not detected.	• The ND qualifier is common in all data in the monitoring program and was frequently applied.

4.3 DELTA REGIONAL MONITORING PROGRAM

The Delta RMP is a stakeholder-directed project formed to develop a regional water quality monitoring program designed to improve understanding of water quality issues in the Sacramento-San Joaquin Delta. The goal of the Delta RMP is to better coordinate and design current and future monitoring activities in and around the Delta to create a cost effective approach for providing critically needed water quality information to better inform policy and regulatory decisions of the Regional Water Board and other Federal, State and local agencies and organizations.[18] The Delta RMP focused the initial monitoring efforts on mercury, pesticides, nutrients, and pathogens. The City and County are contributing members of the Delta RMP, which commenced monitoring in 2015. As the data are collected and results reported, the City and County will reference this data within the annual reports and mid-term and end-term reports, as needed.

[18] http://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/delta_regional_monitoring/index.shtml

4.4 TOTAL MAXIMUM DAILY LOADS

The Region-wide Permit requires the City and County to continue implementation of the stormwater monitoring program, which includes implementation actions and assessments related to applicable TMDLs. Efforts to fulfill TMDL monitoring requirements (included in Attachment G of the Region-wide Permit) are summarized in the following sections.

4.4.1 Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL (Resolution R5-2006-0061)

The organophosphate (OP) Pesticide TMDL establishes wasteload allocations (WLAs) for the sum of diazinon and chlorpyrifos concentrations relative to their respective WQOs. Attachment G of the Region-wide Permit requires that, within one year of the receipt of the NOA under the Region-wide Permit, the City and County (as Permittees) must submit an assessment to determine the diazinon and chlorpyrifos levels and attainment of WLAs in urban discharge and WQOs in the receiving water. The Permittees performed this assessment during 2016-2017 and submitted the information with the Assessment and Prioritization of Water Quality Constituents in the Stockton Urbanized Area.[19] The assessment indicated that, with the exception of Duck Creek, the targets and allocations for the TMDL are largely being met. In addition, Calaveras River, Mosher Slough, and Smith Canal all meet the 303(d) delisting criteria.

4.4.2 Central Valley Pesticide TMDLs

4.4.2.1 Central Valley Diazinon and Chlorpyrifos TMDL (Resolution No. R5-2014-0041)

The Regional Water Board adopted the Diazinon and Chlorpyrifos TMDL on March 28, 2014. This TMDL was approved by the State Water Resources Control Board on June 16, 2015, and by the USEPA on August 16, 2017, at which time the TMDL became fully effective under state and federal law. The Diazinon and Chlorpyrifos TMDL includes WQOs for diazinon and chlorpyrifos based on the California Department of Fish and Game criteria, which are the existing Basin Plan WQOs applicable to the SUA. The TMDL does not change the existing WLAs for point source dischargers.

4.4.2.2 Central Valley Pyrethroid Pesticides Basin Plan Amendment and TMDL (Resolution R5-2017-0057)

The Central Valley Pyrethroid Pesticides Basin Plan Amendment (BPA) and TMDL were adopted by the Regional Water Board on June 8, 2017. The BPA was approved by the USEPA and the Office of Administrative Law (OAL) on February 19, 2019, upon which date the BPA became legally effective. The TMDLs included in the BPA for nine urban creeks in Sacramento and Roseville became legally effective on April 22, 2019. The BPA establishes pyrethroid concentration goals and an implementation program to control pyrethroids in the Sacramento and

[19] City of Stockton and County of San Joaquin. Assessment and Prioritization of Water Quality Constituents in the Stockton Urbanized Area. Prepared by Larry Walker Associates. May 30, 2017.

San Joaquin River watersheds and establishes TMDLs for waterbodies that are 303(d) listed for pyrethroids.

The BPA includes requirements for pyrethroid monitoring, a conditional prohibition, and a pyrethroid management plan. These requirements were not yet applicable during 2018-2019 but will be incorporated into the Permittees' upcoming SWMP.

4.4.3 Stockton Urban Water Bodies Pathogen TMDL (Resolution No. R5-2009-0030)

The Pathogen TMDL includes WLAs for fecal coliform and *E. coli*. The Permittees are required to continue monitoring and implementation activities consistent with the Stockton Urban Waterbodies Pathogen Control Program, and to document, in Mid-Term and End-Term Reports under the Region-wide Permit, the implementation of BMPs to control the discharge of pathogens (indicator bacteria) in their urban discharge, as well as submit effectiveness assessments of implemented BMPs. During 2018-2019, the Permittees monitored for indicator bacteria at Smith Canal, as described in **Section 4.1.2**. Implementation of BMPs is documented in **Section 5**.

4.4.4 Delta Methylmercury TMDL (Resolution No. R5-2010-0043)

As a part of Phase I of the Sacramento-San Joaquin Delta Methylmercury TMDL,[20] the City and the County must conduct a Methylmercury Control Study (Control Study) and participate in the Mercury Exposure Reduction Program (MERP). Progress for the Control Study and MERP participation are reported in the following sections.

4.4.4.1 Methylmercury Control Study

The Permittees submitted a Control Study Workplan to the Regional Water Board on April 22, 2013 and received feedback from the technical advisory committee and Regional Water Board staff during August 2013. The Permittees submitted a revised Control Study Workplan in October 2013 to address the comments received.

The Control Study focuses on evaluating the mercury and methylmercury removal performance of the Airport Business Center detention basin within the SUA, along with examining the potential for methylmercury production in the basin. The Permittees implemented the Control Study according to the schedule in **Table 18**.

[20] Central Valley Regional Water Quality Control Board. 2012. Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Methylmercury and Total Mercury in the Sacramento-San Joaquin River Delta Estuary. Rancho Cordova, CA. Available online: www.waterboards.ca.gov/rwqcb5/water_issues/tmdl/central_valley_projects/delta_hg/2011oct20/bpa_20oct2011_final.pdf

Table 18. Methylmercury Control Study Schedule

Task	Estimated Completion	Completed
Submit Control Study Work Plan to Regional Water Board	April 19, 2013	✓
Regional Water Board and TAC Work Plan Review	May-July 2013	✓
Finalize Work Plan	October 21, 2013	✓
Initiate Control Study Sampling • First Year Monitoring • Second Year Monitoring • Third Year Monitoring	October 2013 • Oct 2013 – Sep 2014 • Oct 2014 – Sep 2015 • Oct 2015 – Sep 2016	✓
Submit Control Study Progress Report	October 2015	✓
Complete Control Study Sampling	September 2016	✓
Submit Annual Progress Report	October 2016 (submitted as part of Annual Report)	✓
Submit Annual Progress Report	October 2018 (submitted as part of Annual Report)	✓
Submit Control Study Final Report to Regional Water Board	October 20, 2018	✓

The Control Study included monitoring for mercury and methylmercury using grab samples, along with ancillary constituents (i.e., suspended sediment, total suspended solids, total dissolved solids, turbidity, phosphorus, sulfate, and iron) using composite samples, and field readings. Samples were collected at the detention basin inlets and outlet. During dry weather events, sediment samples were collected for mercury and methylmercury. Sampling occurred during three wet weather events and one dry weather event for three years.

Monitoring was completed during 2015-2016. The Control Study Progress Report was submitted in October 2015. An annual progress report, per TMDL requirements, was submitted in October 2016 and 2017. The final report was submitted by October 20, 2018.

4.4.4.2 Delta Mercury Exposure Reduction Program Participation

The Delta Mercury Control Program requires the entities identified in the Basin Plan to develop and implement a Mercury Exposure Reduction Program (MERP). The Delta MERP participants include those entities and agencies that formally submitted a letter describing their intent to participate in the collective exposure reduction program. The Permittees submitted their letter during 2013-2014 and are currently participating in the Delta MERP.

The Delta MERP is designed to increase understanding of contaminants in fish and reduce exposure to mercury among people who eat fish from the Delta. The Delta MERP is producing educational materials based on fish consumption guidelines, and is also focusing on presenting a balanced message, including communicating the health risks associated with exposure to mercury in fish, ways to reduce exposure, and health benefits of eating fish generally, as well as identifying low-mercury fish species and areas. The Delta MERP is also focusing efforts on training opportunities for entities involved in the Delta MERP, including county agencies, tribal organizations, community-based organizations, and health care providers.

During 2018-2019, the Permittees contributed funding to the MERP and have been actively tracking its progress.

4.4.5 Lower San Joaquin River, Stockton Deep Water Ship Channel Organic Enrichment and Low Dissolved Oxygen TMDL (Resolution No. R5-2005-0005)

The Organic Enrichment and Low Dissolved Oxygen TMDL requires that responsible parties implement BMPs to control and abate the discharge of oxygen-demanding substances. Attachment G of the Region-wide Permit requires covered Permittees to continue implementation of BMPs identified in their SWMP to control oxygen-demanding substances in their stormwater discharges. These implementation efforts are documented in this Mid-Term Report and will be documented in the End-Term Report, as required under the Region-wide Permit. During 2018-2019, the Permittees monitored for dissolved oxygen at Smith Canal using grab samples, as described in **Section 4.1.2**. Implementation of BMPs is documented in **Section 5**.

4.4.6 Trash Implementation

The State Water Resources Control Board adopted the Trash Amendments[21] on April 7, 2015. The Trash Amendments require MS4 permittees to comply with the prohibition of trash discharge through Track 1 or Track 2.

The Regional Water Board issued a 13383 Order on June 1, 2017 requiring the City to submit a letter identifying the selected compliance option (Track 1 or Track 2) by September 1, 2017. The City selected the Track 2 compliance method (full capture system equivalency).

The County's jurisdiction includes both Phase I and Phase II areas. As such, it is subject to two separate stormwater permits: the Region-wide Permit and the Phase II Small Municipal Separate Storm Sewer System (MS4) General Permit[22] (Phase II Permit) issued by the State Water Board. The County received the 13383 Order issued by the Regional Board (June 1, 2017), as well as a 13383 Order issued by the State Water Board (June 1, 2017). The County responded to both orders with selection of the Track 2 approach to compliance and submitted the preliminary jurisdictional maps required for Phase II areas.

The City and County each submitted Trash Implementation Plans[23,24] to the Regional Water Board on December 1, 2018, which include the following:

a) A description of the combination of controls selected by the City and the rationale for the selection;
b) The rationale for how the combination of controls is designed to achieve Full Capture System Equivalency (FCSE); and

---

[21] Proposed Final Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan).

[22] Order No. 2013-001-DWQ, effective July 1, 2013

[23] City of Stockton, 2018. *Statewide Trash Amendments: Track 2 Implementation Plan*. December.

[24] County of San Joaquin, 2018. *Statewide Trash Amendments: Track 2 Implementation Plan.* December.

c) The rationale for how FCSE will be demonstrated.

As part of the trash monitoring programs, the City and County will collect quantitative data from the implementation of applicable control measures and report the results in future annual reports.

This page intentionally left blank for printing purposes

5 Program Implementation

This section provides a summary of the status of the implementation of the overall stormwater program during the first three years of the Region-wide Permit term (2016-2017, 2017-2018, and 2018-2019).

As described in **Section 2** and **Section 7**, the City and County submitted a NOI Work Plan as part of their NOI application package (**Appendix A**). During 2016-2019, the City and County implemented the activities as outlined in the NOI Work Plan.

In addition, throughout each reporting period, the City and County track the data and information necessary to conduct short-term and long-term program effectiveness assessments. The short-term program effectiveness assessment is included in **Section 6** of this 2016-2019 Mid-Term Report. The long-term program effectiveness assessment will be completed as part of the End-Term Report in 2021.

Although the current SWMP will be revised, in part, to focus on the identified PWQCs, the mid-term report proactively assesses the control measures and activities as applicable to the PWQCs.

A description of the programmatic activities and summary of data collected during 2016-2017, 2017-2018, and 2018-2019[25] is presented by Program Element in the following subsections:

- Section 5.1 City Program Implementation
    - Section 5.1.1 Illicit Discharges (ID)
    - Section 5.1.2 Public Outreach (PO)
    - Section 5.1.3 Municipal Operations (MO)
    - Section 5.1.4 Industrial and Commercial (IC)
    - Section 5.1.5 Construction (CO)
    - Section 5.1.6 Planning and Land Development (LD)
- Section 5.2 County Program Implementation
    - Section 5.2.1 Illicit Discharges (ID)
    - Section 5.2.2 Public Outreach (PO)
    - Section 5.2.3 Municipal Operations (MO)
    - Section 5.2.4 Industrial and Commercial (IC)
    - Section 5.2.5 Construction (CO)
    - Section 5.2.6 Planning and Land Development (LD)

The City and County have developed and are implementing Control Measures and accompanying performance standards specific to each Program Element. The programmatic activities and data for the specific tasks initiated and/or completed during the reporting period

[25] Throughout **Section 5,** the fiscal years 2016-2017, 2017-2018, and 2018-2019 (collectively July 1, 2016 through June 30, 2019) are represented by the time frame 2016-2019.

pursuant to each Program Element, and specifically related to the PWQCs, are summarized in **Section 5**. Thus, some Control Measures within each Program Element are not specifically reported on in **Section 5** and **Section 6**. This is indicated in the tables at the beginning of each Program Element sub-section within **Section 5** (see City **Table 19**, **Table 27**, **Table 31**, **Table 41**, **Table 48**, and **Table 54** and County **Table 60**, **Table 67**, **Table 71**, **Table 79**, **Table 84**, and **Table 86**).

As a part of the revision to the SWMP, the range of Control Measures and activities will be assessed to determine which of them are most effective for each of the PWQCs.

5.1 CITY PROGRAM IMPLEMENTATION

5.1.1 Illicit Discharges (ID)

An illicit discharge is defined as any discharge to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. Illicit discharges include the disposal of materials, such as paint, spa water, swimming pool water, or waste oil, into the storm drain or the discharge of waste streams containing pollutants to the storm drain. Illegal connections are a subset of illicit discharges. Illegal connections are defined as undocumented and/or unpermitted physical connections from any facility to the storm drain system or receiving water (e.g., a sanitary sewer connection to the storm drain).

Because illicit discharges and illegal connections can be a significant source of pollutants to the storm drain system and receiving waters, the purpose of this Program Element is to ensure implementation of a comprehensive program for detecting, responding to, investigating, and eliminating these types of discharges and connections in an efficient and effective manner.

The City has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[26] The Illicit Discharges Program Control Measures are summarized in **Table 19**.

Table 19. Illicit Discharge Program Control Measures (City)

ID	Control Measure	Section 5
ID1	Detection of Illicit Discharges and Illegal Connections	✓
ID2	Illegal Connection Identification and Elimination	✓
ID3	Investigation/Inspection and Follow Up	✓
ID4	Enforcement	✓
ID5	Training	✓
ID6	Effectiveness Assessment	

All PWQCs are addressed by the Illicit Discharge Program Element since illicit discharges and illegal connections could be a source of any of the PWQCs. The City performs the following actions to address this Program Element:

- Proactively detect illicit discharges (IDs) and illegal connections (ICs) through public reporting and field crew inspections;
- Maintain and advertise the 24-hour Hotlines to encourage the public to report water pollution problems;

[26] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

- Train staff to recognize illegal discharges so that, during their normal maintenance activities, they can identify signs of previous, current, or potential non-stormwater discharges/connections or illegal dumping into the storm drain system;
- Investigate and eliminate illegal connections;
- Coordinate with the Planning and Land Development and Construction Programs to ensure that potential ICs are identified during project planning and construction phases.

The implementation of this Program Element during 2016-2019 is summarized below.

5.1.1.1 Detection of Illicit Discharges and Illegal Connections (ID1)

Illicit discharges were detected through public reporting and field crew inspections. The number of discharges observed or complaints received and the number of illicit discharges verified in 2016-2019 by the City are shown in **Table 20**.

Table 20. Detection of Illicit Discharges (City)

Source	Number		
	2016-2017	**2017-2018**	**2018-2019**
Illicit Discharges Observed or Water Pollution Complaints Received			
Hotline	8	9	4
Ask Stockton	2	14	6
Field Staff	110	34	40
Other	21	0	0
Total	**141**	**57**	**50**
Number of Illicit Discharges Verified[a]			
Hotline	7	9	2
Ask Stockton	1	14	2
Field Staff	98	31	37
Other	12	0	0
Total	**118**	**54**	**41**

[a] The number verified is the number with evidence of discharge that is not exempt or in compliance.

5.1.1.2 Illegal Connection Identification and Elimination (ID2)

Illegal connections identified through public reporting, plan reviews, and field crew inspections (including construction inspections) between 2016-2019 by the City are shown in **Table 21**.

Table 21. Illegal Connections Identification (City)

Source	Number of Illegal Connections		
	2016-2017	**2017-2018**	**2018-2019**
Hotline/Ask Stockton/ Field Staff	0	2	1
Plan Review	0	0	0
Construction Inspections	0	0	0

5.1.1.3 Investigation/Inspection and Follow Up (ID3)

The total number of illicit discharges and illegal connections reported, illicit discharges verified and cleaned, and illegal connections eliminated in 2016-2019 by the City are shown in **Table 22**.

Table 22. Total Number of Illicit Discharges and Illegal Connections (City)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
Illicit Discharges Reported	141	57	50
Illicit Discharges Verified	118	54	41
Illicit Discharges Requiring Clean-up[a]	105	31	28
Illegal Connections Reported	0	2	1
Illegal Connections Eliminated	0	2	1

[a] Including clean-up by a contractor, resident, commercial business or industry, or field crew.

The types of materials involved in the City's verified incidents were tracked, as shown in **Table 23**.

Table 23. Materials in Verified Incidents (City)

Materials	Number of Incidents		
	2016-2017	2017-2018	2018-2019
Pesticides	0	2	0
Sediment	12	0	2
Hydrocarbons	20	19	13
Wastewater	52	9	9
Trash and Debris	27	0	9
Paint	1	0	4
Miscellaneous	4	1	7
Unidentified	2	0	7
Total	**118**	**31**[a]	**51**[a]

[a] Multiple types of materials were reported during some illicit discharge inspections, while the material type was not reported during others. Therefore, the number of incidents with materials reported does not equal the verified number of illicit discharges.

5.1.1.4 Enforcement (ID4)

The Enforcement Control Measure establishes policies and procedures and outlines the progressive levels of enforcement applied to responsible parties not complying with City ordinances. By adopting and implementing a progressive enforcement policy, the City ensures that the program is effective at reducing illicit discharges and illegal connections. The City tracked enforcement actions in the Illicit Discharges Database.

The number and types of enforcement actions taken by the City during 2016-2019 are summarized in **Table 24**.

Table 24. Illicit Discharge Program Enforcement Actions Taken (City)

Type of Enforcement Action	Number of Actions[a]		
	2016-2017	2017-2018	2018-2019
Verbal Warning	96	0	1
Administrative			
Violation Warning Notice	22	1	4
Notice of Violation	52 Correction Orders[b] 64 Notice to Clean	2	20
Cease and Desist Order	1	1	3
Stop Work Order	3	0	0
Administrative Citation (Fine)	5	1	0
Criminal Enforcement[c]			
Misdemeanor	0	0	0
Infraction	0	0	0
Total	**243**	**5**	**28**

[a] The total number of enforcement actions taken may be smaller than the number of verified incidents due to enforcement actions issued to the owners of multiple properties.
[b] In 2016-2017, the Notice of Violation form used by the City included the following enforcement options: Cease and Desist Order; Violation Warning Notice; Notice to Clean; Stop Work Order; Fine; and Correction Order.
[c] This category presumes that an action turned over to the District Attorney resulted in a criminal prosecution within the year of the incident. However, data for this category can only be updated in subsequent years (i.e., after criminal prosecution has been successful).

The number of repeat offenders identified and referrals made to other agencies by the City during 2016-2019 are summarized in **Table 25**.

Table 25. Illicit Discharge Program Repeat Offenders (City)

Metric	Number of Incidents		
	2016-2017	2017-2018	2018-2019
Repeat offenders	16	0	1
Referred to Regional Water Board	0	0	2

5.1.1.5 Training (ID5)

The trainings associated with the Illicit Discharge Program Element attended by City staff between 2016-2019 are summarized in **Table 26**.

Table 26. Illicit Discharge Program Trainings Attended (City)

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee Departments or Divisions
7/13/2016	Universal Waste	29	NT	NT
9/21/2016	Hydro/vac truck Safety	36	NT	NT
10/26/2016	Storm Patrol	32	NT	NT
11/30/2016	Smart Cover	36	NT	NT
1/10/2017	Storm Patrol	3	NT	NT
11/07/2018	IDDE-A Grate Concern	58	Various	PW/MUD
12/14/2018	IDDE-A Grate Concern	8	Inspectors	CDD

NT: Not Tracked

5.1.2 Public Outreach (PO)

The purpose of the Public Outreach Program Element is to inform the public (increase knowledge) regarding the impacts of urban stormwater runoff and introduce steps the public can take (change behavior) to reduce pollutants from everyday activities. In addition, this Program Element helps the public understand the problems associated with urban stormwater runoff and can help build support for the stormwater program.

The Public Outreach Program Element is designed to implement and evaluate a comprehensive short- and long-term public education campaign that will inform the community about how actions may adversely impact urban stormwater discharges and, subsequently, local water bodies.

This Program Element is also designed to maximize the use of limited resources and to develop partnerships among all stakeholders in the SUA. Local stewardship and partnerships among governmental agencies, schools, universities, and private interests are vital components of the types of involvement envisioned in this Program Element.

The City has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[27] The Public Outreach Program Control Measures are summarized in **Table 27**.

Table 27. Public Outreach Program Control Measures (City)

PO	Control Measure	Section 5
PO1	Public Participation	✓
PO2	Hotline	[a]
PO3	Public Outreach Implementation	✓
PO4	Public School Education	
PO5	Business Outreach	
PO6	Effectiveness Assessment	

[a] All hotline information is addressed in Section 5.1, illicit discharges.

All PWQCs are addressed by the Public Outreach Program Element. Public participation and public outreach implementation promote the proper disposal of waste.

The implementation of this Program Element during 2016-2019 is summarized below.

5.1.2.1 Public Participation (PO1)

The number of volunteers involved in stream cleanup events organized by the California Coastal Cleanup Day in San Joaquin County in 2016-2019 are shown in **Table 28**, with the amount of trash/debris removed.

[27] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

Table 28. Stream Cleanup Events (City and County)

Date of Cleanup	Event Name	Number of Volunteers	Number of Sites	Trash/Debris Removed (tons)
9/17/2016	Coastal Cleanup Day	953	12	15.85
9/24/2016	Buckley Cove	42	12	7.15
9/16/2017	Coastal Cleanup Day	898	15	11.1
9/15/2018	Coastal Cleanup Day	605	16	11.6

The amount of used oil and number of used oil filters collected via the used oil and Household Hazardous Waste program and the pounds of mercury collected through local events or the permanent collection site in 2016-2019 are shown in **Table 29**.

Table 29. Household Hazardous Waste (City and County)

Metric	Amount Collected		
	2016-2017	2017-2018	2018-2019
Used oil (gallons)	190,466	180,743	192,064
Oil filters (units)	42,815	53,525	62,525
Mercury (pounds)[a]	175	501	531

[a] Methylmercury collection is not tracked.

5.1.2.2 Public Outreach Implementation (PO3)

The City and County perform the Public Outreach Implementation Control Measure to inform the residential community and general public of the impacts of urban stormwater runoff and introduce steps they can take to reduce pollutants in stormwater runoff. Such outreach communicates to the City's residents and visitors the importance of stormwater quality protection and pollution prevention as it relates to the protection of the local water bodies.

Estimates of the total number of impressions made by the City with the general public in 2016-2019 are provided in **Table 30**.

Table 30. Public Outreach Program Implementation (City)

Type of Outreach	Estimated Number of Impressions		
	2016-2017	**2017-2018**	**2018-2019**
Distribution of Educational Materials	3,829	4,329	6,300
Conduct Mixed Media Campaigns	5,000	682,257	220,000
Participate in Community-Wide Events	10,265	9,309	11,550
Provide Community Relations	NT	41,250	NT
Provide Outreach to School-Age Children	12,787	12,013	11,000
Provide Business Outreach	24	454	584
Total	**31,905**	**749,612**	**249,434**

NT: Not Tracked

In addition, to date, a total of 44 Pet Waste Signs promoting the proper disposal of pet waste have been installed within ten existing City parks with stormwater inlets that discharge directly to local waterways.

5.1.3 Municipal Operations (MO)

The City, as part of its normal operations, conducts a number of activities (e.g., catch basin cleaning, street repairs, street sweeping via a contract) that may generate or mobilize pollutants. The Municipal Operations Program Element comprises Control Measures designed to ensure that these operations and maintenance activities are performed using processes and procedures to minimize the pollutants generated and to decrease the potential for pollutants to enter the storm drain system.

The City has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[28] The Municipal Operations Program Control Measures are summarized in **Table 31**.

Table 31. Municipal Operations Program Control Measures (City)

MO	Control Measure	Section 5
MO1	Sanitary Sewer Overflow and Spill Response	✓
MO2	New Development and Construction Requirements for Municipal Capital Improvement Projects	
MO3	Pollution Prevention at City Facilities	
MO4	Landscape and Pest Management	✓
MO5	Storm Drain System Maintenance	✓
MO6	Street Cleaning and Maintenance	✓
MO7	Parking Lots Maintenance	
MO8	Training	✓
MO9	Effectiveness Assessment	

All PWQCs are addressed by the Municipal Operations Program Element. The Municipal Operations Program Element includes control measures designed to ensure that operations and maintenance activities minimize the pollutants generated and decrease the potential for pollutants to enter the storm drain system.

The implementation of this Program Element during 2016-2019 is summarized below.

5.1.3.1 Sanitary Sewer Maintenance & Overflow and Spill Response (MO1)

To reduce the discharge of indicator bacteria and oxygen-demanding substances to the storm drain system, the City tracks and responds to sanitary sewer overflows (SSOs) that can be a source of human-derived fecal contamination in SUA waterways.

[28] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

Summaries of the SSOs tracked through the Sanitary Sewer Overflow Emergency Response Plan in 2016-2019 for the City are shown in **Table 32**. As seen below, very few SSOs entered the receiving water, even if they entered the MS4.[29]

Table 32. Summary of SSOs (City)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
SSOs	78	84	115
SSOs that entered the storm drain system	9	20	25
SSOs that entered a receiving water	3	5	3

5.1.3.2 Landscape and Pest Management (MO4)

The City tracks the municipal area treated with fertilizers and the amounts applied. A summary of the fertilizers applied by the City in 2016-2019 is shown in **Table 33**.

Table 33. Summary of Fertilizers Applied (City)

Metric		Applied to Golf Courses and Parks		
		2016-2017	2017-2018	2018-2019
Area treated with fertilizers (acres)		896	625	1,040
Pounds of fertilizer applied	Nitrogen	8,785	3,728	8,734
	Phosphorus	2,465	355	632

[29] The Region-wide Permit specifically authorizes the ability to utilize the MS4 in case of a non-stormwater discharge spill or release, such as an SSO (General Permit at Provision II.B.4., pg. 16 ("Non-storm water discharges associated with emergency containment and/or cleanup of a pollutant spill or release may lawfully enter a MS4 provided that a) the non-storm water does not discharge from the MS4 to waters of the United States, b) the discharge is temporarily but fully contained in the MS4 to allow for characterization and disposal, c) the pollutants are subsequently removed from the MS4 system, and d) use of the MS4 system is necessary to address a threat to human health, the environment, and/or to avoid significant property damage.")).

5.1.3.3 Storm Drain System Maintenance (MO5)

The City implements a catch basin, pump station, and detention basin maintenance program, including regular inspection and cleanout. Summaries of prioritized catch basin, pump station, and detention basin inspections in 2016-2019 for the City are shown in **Table 34**.

Table 34. Catch Basin, Pump Station, and Detention Basin Inspections (City)

Type	Total Number			Number of Inspections		
	2016-2017	2017-2018	2018-2019	2016-2017	2017-2018	2018-2019
High Priority Catch Basins	3,132	3,132	3,275[a]	5,206	4,418	2,916
Low Priority Catch Basins	13,304	13,304	13,246	263	635	1,899
Pump Stations	74	73	73	888	876	876
Flood Control Detention Basins[b]	5	5	5	5 [c]	10 [d]	10 [d]
Water Quality and Flood Control Detention Basins[b]	3	3	3	3 [c]	6 [d]	6 [d]

[a] The increase in the documented number of high priority catch basins is attributable to staffing changes.
[b] Inspections and data tracking have been historically performed at these eight detention basins. As reported in the RAA (submitted July 1, 2019), 18 detention basins had been identified in the Phase I area. The remaining ten basins will be inspected in future years.
[c] Inspections conducted after significant storms.
[d] Regular inspections.

The City cleans catch basins, pump stations, and detention basins when the necessary criteria are met during inspections. Summaries of prioritized catch basin, storm drain, pump station, and detention basin cleaning and the amount of material/debris removed during storm drain maintenance activities (where tracked) in 2016-2019 for the City are shown in **Table 35**.

Table 35. Catch Basin, Storm Drain, Pump Station, and Detention Basin Cleaning (City)

Type	Number Cleaned			Total Amount of Material/Debris Removed (tons)		
	2016-2017	2017-2018	2018-2019	2016-2017	2017-2018	2018-2019
High Priority Catch Basins	2,972	774	630	34.4	13	9.5
Low Priority Catch Basins	218	570	317			
Storm Drain System[a]	12,086	30,380	35,967			
Pump Stations	37	35	37	55.24	55.5	102.1
Flood Control Detention Basins	0	5	5	[b]	0.58	0.70
Water Quality and Flood Control Detention Basins	0	3	3	[b]	73.15	103.65

[a] Length of channel/pipe cleaned in linear feet.
[b] Maintenance of detention basins was scheduled for 2017-18.

The City tracks the number of catch basins stenciled with the message "No Dumping – Flows to Delta." These stencils are intended to inform the public and prevent illegal dumping and discharges to the storm drain. The number of catch basins stenciled in 2016-2019 for the City is shown in **Table 36**.

Table 36. Number of Catch Basins Stenciled (City)

Item	Total Number		
	2016-2017	2017-2018	2018-2019
Catch Basins[a]	16,436	16,436	16,521
Catch Basins Stenciled to Date	16,436	16,436	16,521
Catch Basins Stenciled/Re-Stenciled by Volunteers and Businesses	23	0	842
Catch Basins Inspected by Municipal/Contract Staff	1,264	3,194	2,120
Catch Basins Permanently Imprinted with Storm Drain Message	1,033	3,194	3,194

[a] The total number of catch basins is the sum of the high priority and low priority catch basins identified in **Table 34**.

The City requires large special events (as well as large venues) to address trash and debris removal, including containerization and street sweeping as appropriate. The number of special events required to obtain special use permits and comply with special use provisions to address trash and debris in 2016-2019 for the City are shown in **Table 37**.

Table 37. Large Events Required to Comply (City)

Item	Total Number		
	2016-2017	2017-2018	2018-2019
Special Use Permits	3	30	29
Special Use Provisions	3	5	4

Estimates of the amount of material collected during events in the City in 2016-2019 are shown in **Table 38**.

Table 38. Trash/Material Collected Special Events (City)

Date(s)	Event Name	Amount of Trash/Material (tons)	
		Total Removed	**Amount Recycled**
7/04/2016	4th of July and Movies at the Point	2,873.77	0.03
4/23/2017	Earth Day	1.13	0.04
5/05/2017	Cinco de Mayo Festival	6.83	0.95
	2016-2017 Total	**2,881.7**	**1.0**
7/4/2017	4th of July	NT	NT
7/29/2017	Bump Music Festival	NT	NT
11/18-19/2017	Congreso Carismatico Evangelization	NT	NT
4/23/2018	Earth Day	0.20	0.05
5/6/2018	Cinco de Mayo Festival	42.67	22.95
	2017-2018 Total	**42.9**	**23.0**
7/4/2018	4th of July	0.83	NT
11/18-19/2018	Congreso Carismatico Evangelization	NT	NT
12/1/2018	Tree Lighting Ceremony	NT	NT
5/5/2019	Cinco de Mayo Festival	1.44	0.30
	2018-2019 Total	**2.27**	**0.3**
	Three-Year Total	**2,926.9**	**24.3**

NT: Not Tracked

5.1.3.4 Street Cleaning and Maintenance (MO6)

Summaries of street sweeping activities and the amount of material removed by street sweeping and green waste collection activities performed in 2016-2019 for the City are shown in **Table 39**.

Table 39. Street Sweeping and Green Waste Collection Activities (City)

Metric	Amount		
	2016-2017	**2017-2018**	**2018-2019**
Total miles swept	48,731	49,289	49,903
Total amount of debris removed (tons)	8,040	7,485	7,262
Total amount of green waste collected (tons)	50,760	64,264	62,048

5.1.3.5 Training (MO8)

The trainings associated with the Municipal Operations Program attended by City staff between 2016-2019 are summarized in **Table 40**.

Table 40. Municipal Operations Program Trainings Attended (City)

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee Departments or Divisions
12/19/2016	HazWaste, FPPP, SPCC Training	7	7	Community Enhancement
12/20/2016	HazWaste, FPPP, SPCC Training	12	12	Facilities Maintenance
12/20/2016	HazWaste, FPPP, SPCC Training	20	20	Fleet Maintenance
12/21/2016	HazWaste, FPPP, SPCC Training	14	14	Street Maintenance
12/21/2016	HazWaste, FPPP, SPCC Training	9	9	Signal Shop
12/22/2016	HazWaste, FPPP, SPCC Training	5	5	Tree Crew
10/31/2018	Storm Patrol	37	Sr CSO & CSO	Collections

5.1.4 Industrial and Commercial (IC)

The purpose of the Industrial and Commercial Program Element is to effectively prohibit unauthorized non-stormwater discharges and reduce pollutants in stormwater runoff from industrial and commercial facilities to the MEP. The program for industrial and commercial facilities is accomplished by tracking, inspecting, providing outreach, and ensuring compliance at industrial and commercial facilities identified as potentially significant sources of pollutants in stormwater.

The City has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[30] The Industrial and Commercial Program Control Measures are summarized in **Table 41**.

Table 41. Industrial and Commercial Program Control Measures (City)

IC	Control Measure	Section 5
IC1	Facility Inventory	✓
IC2	Prioritization and Inspection	✓
IC3	Industrial/Commercial Outreach	✓
IC4	Enforcement	✓
IC5	Training	✓
IC6	Effectiveness Assessment	

All PWQCs are addressed by the Industrial and Commercial Program Element. The Industrial and Commercial Program Element includes control measures designed to prohibit unauthorized non-stormwater discharges and reduce pollutants in stormwater runoff from industrial and commercial facilities. These include prioritization and inspection of industrial and commercial facilities and implementation of BMPs through the distribution of BMP fact sheets during inspections.

The implementation of this Program Element during 2016-2019 is summarized below.

5.1.4.1 Facility Inventory and Prioritization and Inspection (IC1 and IC2)

The City prioritizes all industrial facilities, and commercial facilities that may be significant sources of pollutants, as high priority and inspects each facility twice during the five-year permit term. The inspection results for industrial facilities in 2016-2019 for the City are shown in **Table 42**.

[30] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

Table 42. Summary of Industrial Inspections (City)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
Industrial facilities in current inventory	124	162	171
Facilities prioritized as high	124	162	171
Facilities inspected during the reporting period	[a]	64	61
Facilities with SWPPPs on site[b]	[a]	60	42
Facilities in compliance with stormwater control requirements[c]	[a]	51	13
Facilities requiring follow-up inspections	[a]	13	17
Facilities in compliance after follow-up inspections	[a]	13	5

[a] In 2016-2017, the City reorganized its efforts regarding industrial and commercial inspections and follow-up enforcement actions.

[b] The number of facilities with SWPPPs on site is tabulated as the total number of facilities minus the number with "SWPPP not on site" written in the inspector comments.

[c] In 2017-2018, City inspectors initiated the use of a defined checklist to determine whether an industrial facility passed its initial inspection. The number of facilities in compliance with stormwater control requirements is tabulated as the total number of facilities minus the number which failed the initial inspection.

The inspection results for commercial facilities in 2016-2019 for the City are shown in **Table 43**.

Table 43. Summary of Commercial Inspections (City)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
Commercial facilities in current inventory	[a]	359	938
Facilities prioritized as high and requiring inspection	[a]	359	938
Facilities inspected during the reporting period	[a]	359	636
Facilities adequately implementing BMPs[b]	[a]	161	45
Facilities in general compliance[c]	[a]	135	156
Facilities requiring follow-up inspections[d]	[a]	25	45
Facilities in compliance after follow-up inspections	[a]	25	23

[a] In 2016-2017, the City reorganized its efforts regarding industrial and commercial inspections and follow-up enforcement actions.

[b] The number of facilities adequately implementing BMPs is tabulated as the number of facilities with an inspection score no greater than 2 for the inspection categories "Inspection of facility structure," "Waste Management," and "Fluid Management," and an inspection score no greater than 3 for the inspection category "Illicit connections."

[c] In 2017-2018, City inspectors initiated the use of a defined checklist to determine whether a commercial facility passed its initial inspection. The number of facilities in general compliance is tabulated as the number of facilities which pass the inspection, those which have no issues, or those which have an inspection score no greater than 3 for all inspection categories, including "Storm Drains," "Facility Structure," "Waste Management," and "Fluid Management."

[d] Commercial facilities with multiple or egregious BMP implementation failures are re-inspected. Commercial facilities with minor BMP implementation failures are issued a Notice of Warning and documentation is required to show compliance in lieu of a follow-up inspection. A single enforcement action may be sent to the owner of multiple properties.

5.1.4.2 Industrial/Commercial Outreach (IC3)

In order to assist the industrial and commercial facilities in selecting and implementing the appropriate types of BMPs, the City developed BMP Fact Sheets for the high priority industrial and commercial businesses. The BMP Fact Sheets are distributed during the inspections and made available on the City's website.[31]

Summaries of the BMP Fact Sheets distributed during industrial and commercial inspections in 2016-2019 for the City are shown in **Table 44**.

Table 44. BMP Fact Sheets Distributed During Industrial/Commercial Inspections (City)

Category	Total Number Distributed		
	2016-2017	2017-2018	2018-2019
Industrial			
Industrial Facilities	82	64	19
Commercial			
Automotive-Related Facilities	115	89	163
Restaurants/Food Service Establishments	0	209	396
Total	**197**	**362**	**578**

5.1.4.3 Enforcement (IC4)

The Enforcement Control Measure outlines the progressive levels of enforcement applied to industrial and commercial facilities that are out of compliance with local ordinances and establishes the protocol for referring apparent violations of facilities subject to the Industrial General Permit to the Regional Water Board.

The number and types of enforcement actions taken by the City during 2016-2019 are summarized in **Table 45**.

Table 45. Industrial and Commercial Program Enforcement Actions Taken (City)

Type of Enforcement Action	Number of Actions[a]		
	2016-2017[b]	2017-2018	2018-2019
Administrative			
Violation Warning Notice	[b]	37	9
Notice of Violation	[b]	33	65
Cease and Desist Order	[b]	2	4
Stop Work Order	[b]	0	0
Administrative Citation (Fine)	[b]	2	1
Criminal Enforcement[c]			
Misdemeanor	[b]	0	0

[31] http://www.stocktongov.com/government/departments/municipalUtilities/utilStormOut.html

Type of Enforcement Action	Number of Actions[a]		
	2016-2017[b]	2017-2018	2018-2019
Infraction	[b]	0	0
Total	[b]	74	79

[a] The total number of enforcement actions taken may be smaller than the number of facilities with inadequate BMPs due to enforcement actions that are issued to the owners of multiple properties.
[b] In 2016-2017, the City reorganized its efforts regarding industrial and commercial inspections and follow-up enforcement actions.
[c] This category presumes that an action turned over to the District Attorney resulted in a criminal prosecution within the year of the incident. However, data for this section can only be updated in subsequent years (i.e., after criminal prosecution has been successful).

The number of repeat offenders identified and referrals made to other agencies by the City during 2016-2019 are summarized in **Table 46**.

Table 46. Industrial and Commercial Program Repeat Offenders (City)

Metric	Number of Incidents		
	2016-2017[a]	2017-2018	2018-2019
Repeat offenders	[a]	1	1
Referred to Regional Water Board	[a]	0	12

[a] In 2016-2017, the City reorganized its efforts regarding industrial and commercial inspections and follow-up enforcement actions.

5.1.4.4 Training (IC5)

City staff have attended the California Stormwater Quality Association (CASQA) trainings between 2016-2019, which offer Continuing Education Units related to the Industrial and Commercial Program. The trainings associated with the Industrial and Commercial Program attended by City staff between 2016-2019 are summarized in **Table 47**.

Table 47. Industrial and Commercial Program Trainings Attended (City)

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee Departments or Divisions
9/11-14/2016	CASQA Annual Conference: Illicit Discharges Training Workshop Industrial Treatment Solutions QISP Forum	2	Deputy Director Program Manager	Stormwater
9/24-27/2017	CASQA Annual Conference: Industrial Training Workshop Public and Private Enforcement of the IGP	2	Deputy Director Program Manager	Stormwater
10/14-17/2018	CASQA Annual Conference: IGP Compliance Implementation and TMDLs Trainer of Record – IGP and QISP	2	Deputy Director Environmental Control Officer	Stormwater

5.1.5 Construction (CO)

During construction projects, a number of activities may generate or mobilize pollutants. The purpose of the Construction Program Element is to coordinate City programs and resources to effectively reduce pollutants in runoff from construction sites during all construction phases.

The City has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[32] The Construction Program Control Measures are summarized in **Table 48**.

Table 48. Construction Program Control Measures (City)

CO	Control Measure	Section 5
CO1	Municipal Code for Construction Sites	
CO2	Plan Review and Approval Process	
CO3	Construction Projects Inventory	
CO4	Construction Outreach	✓
CO5	Construction Site Inspections & BMP Implementation	✓
CO6	Enforcement	✓
CO7	Training	✓
CO8	Effectiveness Assessment	

Dissolved oxygen, methylmercury, and trash are addressed by the Construction Program Element. The Construction Program Element includes control measures to effectively reduce pollutants in runoff from construction sites during all construction phases, including inspections of construction sites and implementation of BMPs through the distribution of BMP fact sheets during inspections.

The implementation of this Program Element during 2016-2019 is summarized below.

5.1.5.1 Construction Outreach (CO4)

A summary of the types and number of outreach materials (BMP fact sheets) distributed by the City during construction site inspections performed in 2016-2019 is shown in **Table 49**.

Table 49. BMP Fact Sheets Distributed During Construction Inspections (City)

Year	Name of Outreach Material	Total Number Distributed
2016-2017	Not tracked[a]	0
2017-2018	BMP Inspection Criteria	71
2018-2019	BMP Inspection Criteria	376

[a] Outreach material distribution was not tracked.

---

32 These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

5.1.5.2 Construction Site Inspections & BMP Implementation (CO5)

The City inspects all construction sites greater than or equal to one (1) acre during the wet and dry seasons. The inspection program ensures that the specific minimum requirements are effectively implemented at construction sites.

A summary of the active construction sites and inspections conducted by the City in 2016-2019 is shown in **Table 50**.

Table 50. Summary of Construction Site Inspections (City)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
Active construction sites ≥1 acre in size	34	44	80
Regular inspections conducted at active construction sites	246	71	376
Follow-up inspections conducted due to violations	11	48	177

5.1.5.3 Enforcement (CO6)

The Enforcement Control Measure outlines the progressive levels of enforcement applied to construction sites that are out of compliance with local ordinances and establishes the protocol for referring apparent violations of construction sites subject to the General Construction Permit to the Regional Water Board. The progressive enforcement and referral policy, as well as the accompanying legal authority to execute it, is an important tool for providing a fair and equitable approach to bringing contractors and developers into compliance with the City's municipal code requirements.

The number and types of enforcement actions taken by the City in 2016-2019 during construction site inspections are summarized in **Table 51**.

Table 51. Construction Program Enforcement Actions Taken (City)

Type of Enforcement Action	Number of Actions		
	2016-2017	2017-2018	2018-2019
Verbal Warning	105	0	0
Administrative			
Violation Warning Notice	14	10	51
Notice of Violation	7 NOV[a] 87 Notice to Clean 55 Correction Orders	29	91
Cease and Desist Order	0	1	1
Stop Work Order	0	1	4
Administrative Citation (Fine)	0	3	7
Criminal Enforcement			

Type of Enforcement Action	Number of Actions		
	2016-2017	2017-2018	2018-2019
Misdemeanor	0	0	0
Infraction	0	0	0
Total	**268**	**44**	**154**

[a] In 2016-2017, the Notice of Violation (NOV) form used by the City includes the following enforcement options: Cease and Desist Order; Violation Warning Notice; Notice to Clean; Stop Work Order; Fine; and Correction Order.

The number of repeat offenders identified by the City during 2016-2019 are summarized in **Table 52**.

Table 52. Construction Program Repeat Offenders (City)

Metric	Number of Incidents		
	2016-2017	2017-2018	2018-2019
Repeat offenders	7	17	57

5.1.5.4 Training (CO7)

The trainings associated with the Construction Program attended by City staff between 2016-2019 are summarized in **Table 53**.

Table 53. Construction Program Trainings Attended (City)

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee Departments or Divisions
10/7/2016	Construction/Erosion Control	19	NT	Community Development/ Stormwater/ Engineering
4/4/2019	Construction Stormwater Inspections	4	Deputy Director, Program Manager	Stormwater Env. Control Office
9/11-14/2016	CASQA Annual Conference: CGP Compliance: Sustainable Soil Strategies QSP/QSD Forum	2	Deputy Director Program Manager	Stormwater
9/24-27/2017	CASQA Annual Conference: Trainer of Record Forum: CGP QSP/QSD Forum	2	Deputy Director Program Manager	Stormwater
10/14-17/2018	CASQA Annual Conference: SWPPP Specifications CSD/QSP Collaboration	2	Deputy Director Environmental Control Officer	Stormwater

NT: Not Tracked

5.1.6 Planning and Land Development (LD)

The addition of impervious areas for homes, industrial and commercial businesses, parking lots, streets and roads may increase the amount of stormwater runoff, as well as the potential for pollution. The Planning and Land Development Program Element ensures that the impacts on stormwater quality from new development and redevelopment are limited through implementation of Site Design Controls, Source Controls, Volume Reduction Measures, and Treatment Controls. The general strategy for development is to avoid, minimize, and mitigate (in that order) the potential adverse impacts to stormwater. The potential for long-term stormwater impacts from development is also reduced by requiring ongoing operation and maintenance of post-construction treatment controls selected for a site.

The City has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[33] The Planning and Land Development Program Control Measures are summarized in **Table 54**.

Table 54. Planning and Land Development Program Control Measures (City)

LD	Control Measure	Section 5
LD1	Incorporation of Water Quality Protection Principles into City Procedures and Policies	
LD2	New Development Standards	
LD3	Plan Review Sign-Off	✓
LD4	Maintenance Agreement and Transfer	✓
LD5	Training	✓
LD6	Effectiveness Assessment	

All PWQCs are addressed by the Planning and Land Development Program Element. The Planning and Land Development Program Element includes control measures to ensure that the impact on stormwater quality from new development and redevelopment is limited. The general strategy for development is to avoid, minimize, and mitigate (in that order) the potential adverse impacts to stormwater.

The implementation of this Program Element during 2016-2019 is summarized below.

5.1.6.1 Plan Review Sign-off (LD3)

The City conducts comprehensive reviews of development plans to ensure that stormwater controls minimize water quality impacts by PWQCs. The priority projects reviewed by the City in 2016-2019 are summarized in **Table 55**.

[33] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

Table 55. Project Plans and Priority Projects Reviewed (City)

Metric	Number Reviewed		
	2016-2017	**2017-2018**	**2018-2019**
Project Plans Reviewed	15	9	23
Acres Covered by Approved Priority Projects[a]	115.9	219.7	149.46
Priority Project Category[b]			
Significant Redevelopment	1	2	10
Commercial Developments (≥100,000 SF)	5	2	7
Commercial Developments (≥5,000 SF)	3	2	2
Automotive Repair Shops	0	0	1
Retail Gasoline Outlets	0	2	0
Restaurants	0	1	1
Parking Lots (≥ 5,000 SF or 25 spaces)	5	0	2
Streets and Roads (>1 acre paved surface)	1	0	0
Home Subdivisions (≥ 10 units)	0	0	0
Total Projects	**15**	**9**	**23**

[a] As of June 30 of each fiscal year.

[b] The Development Standards apply to all Priority Projects or phases of Priority Projects at the date of adoption unless the projects already had approval by the City or County Engineer, a permit for development or construction or an approved tentative map prior to the Development Standards date of adoption.

The type and number of post-construction BMPs (control measures) implemented as part of the priority projects that were approved by the City in 2016-2019 are shown in **Table 56**.

Table 56. Post-Construction BMPs Implemented in Priority Projects (City)

Control Measure Type	Total Number Approved		
	2016-2017	2017-2018	2018-2019
Site Design Controls			
G-1: Conserve Natural Areas	11	7	14
G-2: Protect Slopes and Channels	9	4	13
G-3: Minimize Soil Compaction	12	9	19
G-4: Minimize Impervious Area	13	7	21
Total Site Design Controls	**45**	**27**	**67**
Source Controls			
S-1: Storm Drain Message and Signage	12	8	23
S-2: Outdoor Materials Storage Area Design	0	1	1
S-3: Outdoor Trash Storage and Waste Handling Area Design	4	7	15
S-4: Outdoor Loading/Unloading Dock Area Design	3	1	3
S-5: Outdoor Repair/Maintenance Bay Design	0	0	0
S-6: Outdoor Vehicle/Equipment/Accessory Wash Area Design	0	2	2
S-7: Fuel Area Design	0	2	0
Total Source Controls	**19**	**21**	**44**
Volume Reduction Measures			
V-1: Rain Garden	5	2	0
V-2: Rain Barrel/ Cistern	0	0	0
V-3: Vegetated Roof	0	0	0
V-4: Interception Trees	4	2	3
V-5: Grassy Channel	1	1	2
V-6: Vegetated Buffer Strip	0	1	1
Total Volume Reduction Measures	**10**	**6**	**6**
Treatment Control Measures			
L-1: Bioretention	2	0	16
L-2: Stormwater Planter	2	0	1
L-3: Tree-well Filter	0	0	0
L-4: Infiltration Basin	0	0	0
L-5: Infiltration Trench	0	5	0
L-6: Porous Pavement Filter	0	0	0
L-7: Vegetated (Dry) Swale	1	0	1
L-8: Grassy Swale	3	0	2
L-9: Grassy Filter Strip	1	0	0
C-1: Constructed Wetland	0	0	0
C-2: Extended Detention Basin	0	0	0
C-3: Wet Pond	0	0	0
C-4: Proprietary Treatment Controls (see **Table 57** for details)	2	3	10
Total Treatment Control Measures	**11**	**8**	**30**

The specific proprietary treatment control measures (C-4) approved by the City in 2016-2019 are shown in **Table 57**.

Table 57. Proprietary Treatment Control Measures in Projects (City)

Facility Name	Type of Treatment Unit
2016-2017	
COS Hammer Lane	Contech CDS
Mercedes Benz	Contech Stormfilter
2017-2018	
ARCO AM/PM 6009 N El Dorado Street	MWS-L-4-8-UG-V
Starbucks 510 & 520 N El Dorado Street	MWS-L-4-8 & MWS-L-4-6
ARCO AM/PM 10715 Trinity Parkway	Contech Stormfilter
2018-2019	
Anchor Village	Contech Stormfilter
California Water Services	Kristar Enterprise Flogard
Performance Drive Warehouse	Contech Stormfilter
804 North Hunter Street	Contech Stormfilter
Sierra Vista Redevelopment	Contech Stormfilter
District Facilities Maintenance	Flogard Catch Basin Insert Filter
Zephyr Court Warehouse	Contech Stormfilter
Humphreys' University Gymnasium	Triton Drop Inlet
Gurdwara Sahib Sikh Temple	Jensen Precast
Stonebrier Apartments	Contech Stormfilter

5.1.6.2 Maintenance Agreement and Transfer (LD4)

The City performs post-construction BMP maintenance oversight to ensure that post-construction BMPs continue to function correctly and minimize water quality impacts. The number of completed priority projects with post-construction BMPs, as well as the number of inspections conducted and enforcement actions taken in 2016-2019 due to improper maintenance, are shown in **Table 58**.

Table 58. Post-Construction BMP Inspections and Enforcement (City)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
Completed priority projects with post-construction BMPs	6	9	23
Inspections conducted	6	0	0[a]
Enforcement actions taken due to improper maintenance	0	0	0

[a] During 2019-2020, the program is being modified to address the Trash Amendments and general issues that have arisen over the years. Regular post construction inspections are anticipated to begin in 2020-2021.

5.1.6.3 Training (LD5)

The trainings associated with the Planning and Land Development Program attended by City staff between 2016-2019 are summarized in **Table 59**.

Table 59. Planning and Land Development Program Trainings Attended (City)

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee Departments or Divisions
9/11-14/2016	CASQA Annual Conference: Watershed Management Plans and Green Infrastructure Plan Implementation BMP Implementation of LID Standards Guidance on Green Infrastructure: Making LID in the Right-of-Way Standard Practice	2	Deputy Director Program Manager	Stormwater
9/24-27/2017	CASQA Annual Conference: International LID Implementing LID and Green Infrastructure Green Infrastructure Construction and Inspection	2	Deputy Director Program Manager	Stormwater
10/14-17/2018	CASQA Annual Conference: International LID LID BMPs in a Semi-Arid Environment	2	Deputy Director Environmental Control Officer	Stormwater

5.2 COUNTY PROGRAM IMPLEMENTATION

5.2.1 Illicit Discharges (ID)

An illicit discharge is defined as any discharge to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. Illicit discharges include the disposal of materials, such as paint, spa water, swimming pool water, or waste oil, into the storm drain or the discharge of waste streams containing pollutants to the storm drain. Illegal connections are a subset of illicit discharges. Illegal connections are defined as undocumented and/or unpermitted physical connections from any facility to the storm drain system or receiving water (e.g., a sanitary sewer connection to the storm drain).

Because illicit discharges and illegal connections can be a significant source of pollutants to the storm drain system and receiving waters, the purpose of this Program Element is to ensure implementation of a comprehensive program for detecting, responding to, investigating, and eliminating these types of discharges and connections in an efficient and effective manner.

The County has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[34] The Illicit Discharges Program Control Measures are summarized in **Table 60**.

Table 60. Illicit Discharge Program Control Measures (County)

ID	Control Measure	Section 5
ID1	Detection of Illicit Discharges and Illegal Connections	✓
ID2	Illegal Connection Identification and Elimination	✓
ID3	Investigation/Inspection and Follow Up	✓
ID4	Enforcement	✓
ID5	Training	✓
ID6	Effectiveness Assessment	

All PWQCs are addressed by the Illicit Discharge Program Element since illicit discharges and illegal connections could be a source of any of the PWQCs. The County performs the following actions to address this Program Element:

- Proactively detect illicit discharges (IDs) and illegal connections (ICs) through public reporting and field crew inspections;
- Maintain and advertise the 24-hour Hotlines to encourage the public to report water pollution problems;

[34] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

- Train staff to recognize illegal discharges so that, during their normal maintenance activities, they can identify signs of previous, current, or potential non-stormwater discharges/connections or illegal dumping into the storm drain system;
- Investigate and eliminate illegal connections;
- Coordinate with the Planning and Land Development and Construction Programs to ensure that potential ICs are identified during project planning and construction phases.

The implementation of this Program Element during 2016-2019 is summarized below.

5.2.1.1 Detection of Illicit Discharges and Illegal Connections (ID1)

Illicit discharges were detected through public reporting and field crew inspections. The number of discharges observed or complaints received and the number of illicit discharges verified in 2016-2019 by the County are shown in **Table 61**.

Table 61. Detection of Illicit Discharges (County)

Source	Number		
	2016-2017	**2017-2018**	**2018-2019**
Illicit Discharges Observed or Water Pollution Complaints Received			
Hotline	1	4	0
Field Staff	0	8	2
Total	**1**	**12**	**2**
Number of Illicit Discharges Verified[a]			
Hotline	1	4	0
Field Staff	0	6	2
Total	**1**	**10**	**2**

[a] The number verified is the number with evidence of discharge that is not exempt or in compliance.

5.2.1.2 Illegal Connection Identification and Elimination (ID2)

No illegal connections were identified by the County between 2016-2019.

5.2.1.3 Investigation/Inspection and Follow Up (ID3)

The total number of illicit discharges and illegal connections reported, illicit discharges verified and cleaned, and illegal connections eliminated in 2016-2019 by the County are shown in **Table 62**.

Table 62. Total Number of Illicit Discharges and Illegal Connections (County)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
Illicit Discharges Reported	1	12	2
Illicit Discharges Verified	1	10	2
Illicit Discharges Requiring Clean-up[a]	1	7	2
Illegal Connections Reported	0	0	0
Illegal Connections Eliminated	0	0	0

[a] Including clean-up by a contractor, resident, commercial business or industry, or field crew.

The types of materials involved in the County's verified incidents were tracked, as shown in **Table 63**.

Table 63. Materials Identified in Verified Incidents (County)

Materials	Number of Incidents		
	2016-2017	2017-2018	2018-2019
Hydrocarbons	Not tracked[a]	2	1
Wastewater	Not tracked[a]	7	1
Trash and Debris	Not tracked[a]	1	0
Total	**-**	**10**	**2**

[a] Materials detected during verified incidents were not tracked.

5.2.1.4 Enforcement (ID4)

The Enforcement Control Measure establishes policies and procedures and outlines the progressive levels of enforcement applied to responsible parties not complying with County ordinances. By adopting and implementing a progressive enforcement policy, the County ensures that the program is effective at reducing illicit discharges and illegal connections. The County tracked enforcement actions in the Illicit Discharges Database.

The number and types of enforcement actions taken by the County during 2016-2019 are summarized in **Table 64**.

Table 64. Illicit Discharge Program Enforcement Actions Taken (County)

Type of Enforcement Action	Number of Actions		
	2016-2017	2017-2018	2018-2019
Verbal Warning	0	5	0
Administrative			
Correction Order	1	0	1
Notice of Violation	0	0	0
Notice to Clean	0	0	0
Administrative Citation (Fine)	0	0	0
Criminal Enforcement[a]			
Misdemeanor	0	0	0
Infraction	0	0	0
Total	**1**	**5**	**1**

[a] This category presumes that an action turned over to the District Attorney resulted in a criminal prosecution within the year of the incident. However, data for this category can only be updated in subsequent years (i.e., after criminal prosecution has been successful).

The number of repeat offenders identified and referrals made to other agencies by the County during 2016-2019 are summarized in **Table 65**.

Table 65. Illicit Discharge Program Repeat Offenders (County)

Metric	Number of Incidents		
	2016-2017	2017-2018	2018-2019
Repeat offenders	0	0	0
Referred to Environmental Health Department	1	3	0
Referred to the Regional Water Board	0	0	0
Referred to the City	0	2	0

5.2.1.5 Training (ID5)

The trainings associated with the Illicit Discharge Program Element attended by County staff between 2016-2019 are summarized in **Table 66**.

Table 66. Illicit Discharge Program Trainings Attended (County)

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee Departments or Divisions
5/18/2017	Stormwater Regional Training	2	Engineer IV Management Analyst II	Water Resources
6/28/2018	Module 1: Illicit Discharge and Illegal Connections	51	NT	Road & Traffic Maintenance
5/16/2019	San Joaquin Valley Stormwater Quality Partnership 2019 Regional Training	2	Engineering Assistant Management Analyst II	Water Resources

NT: Not Tracked

5.2.2 Public Outreach (PO)

The purpose of the Public Outreach Program Element is to inform the public (increase knowledge) regarding the impacts of urban stormwater runoff and introduce steps the public can take (change behavior) to reduce pollutants from everyday activities. In addition, this Program Element helps the public understand the problems associated with urban stormwater runoff and can help build support for the stormwater program.

The Public Outreach Program Element is designed to implement and evaluate a comprehensive short- and long-term public education campaign that will inform the community about how actions may adversely impact urban stormwater discharges and, subsequently, local water bodies.

This Program Element is also designed to maximize the use of limited resources and to develop partnerships among all stakeholders in the SUA. Local stewardship and partnerships among governmental agencies, schools, universities, and private interests are vital components of the types of involvement envisioned in this Program Element.

The County has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[35] The Public Outreach Program Control Measures are summarized in **Table 67**.

Table 67. Public Outreach Program Control Measures (County)

PO	Control Measure	Section 5
PO1	Public Participation	✓
PO2	Hotline	[a]
PO3	Public Outreach Implementation	✓
PO4	Public School Education	
PO5	Business Outreach	
PO6	Effectiveness Assessment	

[a] All hotline information is addressed in Section 5.1, illicit discharges.

All PWQCs are addressed by the Public Outreach Program Element. Public participation and public outreach implementation promote the proper disposal of waste.

The implementation of this Program Element during 2016-2019 is summarized below.

---

[35] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

5.2.2.1 Public Participation (PO1)

The number of volunteers involved in stream cleanup events organized by the California Coastal Cleanup Day in San Joaquin County in 2016-2019 are shown in **Table 68**, with the amount of trash/debris removed.

Table 68. Stream Cleanup Events (City and County)

Date of Cleanup	Event Name	Number of Volunteers	Number of Sites	Trash/Debris Removed (tons)
9/17/2016	Coastal Cleanup Day	953	12	15.85
9/24/2016	Buckley Cove	42	12	7.15
9/16/2017	Coastal Cleanup Day	898	15	11.1
9/15/2018	Coastal Cleanup Day	605	16	11.6

The amount of used oil and number of used oil filters collected via the used oil and Household Hazardous Waste program and the pounds of mercury collected through local events or the permanent collection site in 2016-2019 are shown in **Table 69**.

Table 69. Household Hazardous Waste (City and County)

Metric	Amount Collected		
	2016-2017	2017-2018	2018-2019
Used oil (gallons)	190,466	180,743	192,064
Oil filters (units)	42,815	53,525	62,525
Mercury (pounds)[a]	175	501	531

[a] Methylmercury collection is not tracked.

5.2.2.2 Public Outreach Implementation (PO3)

The County performs the Public Outreach Implementation Control Measure to inform the residential community and general public of the impacts of urban stormwater runoff and introduce steps they can take to reduce pollutants in stormwater runoff. Such outreach communicates to the County's residents and visitors the importance of stormwater quality protection and pollution prevention as it relates to the protection of the local water bodies.

Estimates of the total number of impressions made by the County with the general public in 2016-2019 are provided in **Table 70**.

Table 70. Public Outreach Program Implementation (County)

Type of Outreach	Estimated Number of Impressions		
	2016-2017	**2017-2018**	**2018-2019**
Distribution of Educational Materials	NT	NT	1,177
Conduct Mixed Media Campaigns	903,887	NT	NT
Participate in Community-Wide Events	9,240	8,409	308
Provide Community Relations	NT	NT	24,500
Provide Outreach to School-Age Children	NT	NT	13,370
Provide Business Outreach	NT	NT	29
Total	**913,127**	**8,409**	**25,985**

NT: Not Tracked

5.2.3 Municipal Operations (MO)

The County, as part of its normal operations, conducts a number of activities (e.g., catch basin cleaning, street repairs, street sweeping via a contract) that may generate or mobilize pollutants. The Municipal Operations Program Element comprises Control Measures designed to ensure that these operations and maintenance activities are performed using processes and procedures to minimize the pollutants generated and to decrease the potential for pollutants to enter the storm drain system.

The County has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[36] The Municipal Operations Program Control Measures are summarized in **Table 71**.

Table 71. Municipal Operations Program Control Measures (County)

MO	Control Measure	Section 5
MO1	Sanitary Sewer Overflow and Spill Response	✓
MO2	New Development and Construction Requirements for Municipal Capital Improvement Projects	
MO3	Pollution Prevention at City Facilities	
MO4	Landscape and Pest Management	✓
MO5	Storm Drain System Maintenance	✓
MO6	Street Cleaning and Maintenance	✓
MO7	Parking Lots Maintenance	
MO8	Training	✓
MO9	Effectiveness Assessment	

All PWQCs are addressed by the Municipal Operations Program Element. The Municipal Operations Program Element includes control measures designed to ensure that operations and maintenance activities minimize the pollutants generated and decrease the potential for pollutants to enter the storm drain system.

The implementation of this Program Element during 2016-2019 is summarized below.

[36] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

5.2.3.1 Sanitary Sewer Maintenance & Overflow and Spill Response (MO1)

To reduce the discharge of indicator bacteria and oxygen-demanding substances to the storm drain system, the County tracks and responds to sanitary sewer overflows (SSOs) that can be a source of human-derived fecal contamination in SUA waterways.

Summaries of the SSOs tracked through the Sanitary Sewer Overflow Emergency Response Plan in 2016-2019 for the County are shown in **Table 72**. As seen below, no SSOs entered the receiving water, even if they entered the MS4.[37]

Table 72. Summary of SSOs (County)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
SSOs	6	3	3
SSOs that entered the storm drain system	2	1	0
SSOs that entered a receiving water	0	0	0

5.2.3.2 Landscape and Pest Management (MO4)

The County did not apply fertilizers during 2016-2019.

[37] The Region-wide Permit specifically authorizes the ability to utilize the MS4 in case of a non-stormwater discharge spill or release, such as an SSO (General Permit at Provision II.B.4., pg. 16 ("Non-storm water discharges associated with emergency containment and/or cleanup of a pollutant spill or release may lawfully enter a MS4 provided that a) the non-storm water does not discharge from the MS4 to waters of the United States, b) the discharge is temporarily but fully contained in the MS4 to allow for characterization and disposal, c) the pollutants are subsequently removed from the MS4 system, and d) use of the MS4 system is necessary to address a threat to human health, the environment, and/or to avoid significant property damage.")).

5.2.3.3 Storm Drain System Maintenance (MO5)

The County implements a catch basin, pump station, and detention basin maintenance program, including regular inspection and cleanout. Summaries of prioritized catch basin, pump station, and detention basin inspections in 2016-2019 for the County are shown in **Table 73**.

Table 73. Catch Basin, Pump Station, and Detention Basin Inspections (County)

Type	Total Number			Number Inspected		
	2016-2017	**2017-2018**	**2018-2019**	**2016-2017**	**2017-2018**	**2018-2019**
High Priority Catch Basins	407	407 [a]	407	240	314	336
Low Priority Catch Basins	1,067	1,067 [a]	1,289	400	608	1,046
Pump Stations	14	14	20	14	14	20
Dry Detention Basins	5	10[b]	10	5	10	10

[a] The total number of catch basins changed from 1,474 in 2016-2017 to 1,696 in 2017-2018. Prioritization of the remaining 222 catch basins was not complete before June 30, 2018.

[b] In 2016-2017, the total number of dry detention basins was based on data only from Utilities Maintenance. The number of dry detention basins reported in 2017-2018 is greater because data from Utilities Maintenance, Road Maintenance, and Channel Maintenance were used, accounting for all such basins within the County's Phase I area. As reported in the RAA (submitted July 1, 2019), nine (9) detention basins had been identified in the Phase I area; however, a tenth basin was identified subsequent to RAA submittal.

The County cleans catch basins, pump stations, and detention basins when the necessary criteria are met during inspections. Summaries of prioritized catch basin, storm drain, pump station, and detention basin cleaning and the amount of material/debris removed during storm drain maintenance activities (where tracked) in 2016-2019 for the County are shown in **Table 74**.

Table 74. Catch Basin, Storm Drain, Pump Station, and Detention Basin Cleaning (County)

Type	Number Cleaned			Total Amount of Material/Debris Removed (tons)		
	2016-2017	**2017-2018**	**2018-2019**	**2016-2017**	**2017-2018[a]**	**2018-2019**
High Priority Catch Basins	200	311	336	3.5[b]	98.2[b]	59.3
Low Priority Catch Basins	255	603	1,046			
Storm Drain System	6,500[c]	62,182[c]	113,372[c]	291[b]	101[b]	[d]
Pump Stations	8	12	14	0.009[e]	16.8[e]	0.9[e]

[a] The amount removed increased between 2016-2017 and 2017-2018 due to the use of a vactor truck, which had not previously been used due to budget constraints.

[b] Two quantities were reported, in tons (from the Road Maintenance Division) and in cubic feet (from the Utility Maintenance Division). The quantity in cubic feet was converted to tons using 27 cubic feet/cubic yard, 202 gallons/cubic yards, 2.5 pounds/gallon, and 2,000 lbs/ton.

[c] Length of channel/pipe cleaned in linear feet

[d] The amount of material removed from the storm drain system is included in the amount removed from catch basins.

[e] This amount was originally reported in cubic feet and was converted as described in footnote [a].

The County tracks the number of catch basins stenciled with the message "No Dumping – Flows to Delta." These stencils are intended to inform the public and prevent illegal dumping and discharges to the storm drain. The number of catch basins stenciled in 2016-2019 for the County is shown in **Table 75**.

Table 75. Number of Catch Basins Stenciled (County)

Item	Total Number		
	2016-2017	2017-2018	2018-2019
Catch Basins	1,471	1,696	1,696
Catch Basins Stenciled to Date	1,455	1,696[a]	1,696
Catch Basins Stenciled/Re-Stenciled by Volunteers	2,034	[b]	0
Catch Basins Stenciled/Re-Stenciled by Municipal/Contract Staff	0	0	0

[a] The total number of catch basins in the inventory was updated in 2017-2018. The number of catch basins stenciled to date was initially reported as 1,455 in the 2017-2018 Annual Report; however, as reported in the *City of Stockton and County of San Joaquin Settlement Agreement Fiscal Year 2017-2018 Annual Report* (October 31, 2018), as of June 30, 2018, the County labeled 1,696 catch basins within the County's portions of the SUA with a storm drain message

The County requires large special events (as well as large venues) to address trash and debris removal, including containerization and street sweeping as appropriate. The number of special events required to obtain special use permits and comply with special use provisions to address trash and debris in 2016-2019 for the County are shown in **Table 76**.

Table 76. Large Events Required to Comply (County)

Item	Total Number		
	2016-2017	2017-2018	2018-2019
Special Use Permits and Provisions	NT	1,507[a]	1,726[a]

NT: Not Tracked

[a] These include parks special events held within the County, which require special use permits.

5.2.3.4 Street Cleaning and Maintenance (MO6)

Summaries of street sweeping activities and the amount of material removed by street sweeping and green waste collection activities performed in 2016-2019 for the County are shown in **Table 77**.

Table 77. Street Sweeping and Green Waste Collection Activities (County)

Metric	Amount		
	2016-2017	2017-2018	2018-2019
Total miles swept	9,775	9,775	9,150
Total amount of debris removed (tons)	1,692	1,584	1,520
Total amount of green waste collected (tons)	1,800	1,750	1,389

5.2.3.5 *Training (MO8)*

The trainings associated with the Municipal Operations Program attended by County staff between 2016-2019 are summarized in **Table 78**.

Table 78. Municipal Operations Program Trainings Attended (County)

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee Departments or Divisions
5/18/2017	Stormwater Regional Training	2	Engineer IV Management Analyst II	Water Resources
6/28/2018	Module 2: Municipal Operations	51	NT	Road & Traffic Maintenance
5/16/2019	San Joaquin Valley Stormwater Quality Partnership 2019 Regional Training	2	Engineering Assistant Management Analyst II	Water Resources

NT: Not Tracked

5.2.4 Industrial and Commercial (IC)

The purpose of the Industrial and Commercial Program Element is to effectively prohibit unauthorized non-stormwater discharges and reduce pollutants in stormwater runoff from industrial and commercial facilities to the MEP. The program for industrial and commercial facilities is accomplished by tracking, inspecting, providing outreach, and ensuring compliance at industrial and commercial facilities identified as potentially significant sources of pollutants in stormwater.

The County has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[38] The Industrial and Commercial Program Control Measures are summarized in **Table 79**.

Table 79. Industrial and Commercial Program Control Measures

IC	Control Measure	Section 5
IC1	Facility Inventory	✓
IC2	Prioritization and Inspection	✓
IC3	Industrial/Commercial Outreach	✓
IC4	Enforcement	✓
IC5	Training	✓
IC6	Effectiveness Assessment	

All PWQCs are addressed by the Industrial and Commercial Program Element. The Industrial and Commercial Program Element includes control measures designed to prohibit unauthorized non-stormwater discharges and reduce pollutants in stormwater runoff from industrial and commercial facilities. These include prioritization and inspection of industrial and commercial facilities and implementation of BMPs through the distribution of BMP fact sheets during inspections.

The implementation of this Program Element during 2016-2019 is summarized below.

5.2.4.1 Facility Inventory and Prioritization and Inspection (IC1 and IC2)

The County prioritizes all industrial facilities, and commercial facilities that may be significant sources of pollutants, as high priority and inspects each facility twice during the five-year permit term. The inspection results for industrial facilities in 2016-2019 for the County are shown in **Table 80**.

[38] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

Table 80. Summary of Industrial Inspections (County)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
Industrial facilities in current inventory	17	14[a]	14
Facilities prioritized as high	17	14	14
Facilities inspected during the reporting period[b]	5	7	8
Facilities with SWPPPs on site	5	7	8
Facilities in compliance with stormwater control requirements	5	7	8
Facilities requiring follow-up inspections	0	0	0

[a] One facility submitted a Notice of Termination in 2016-2017 due to lack of exposure to stormwater and was removed from the inventory in 2017-2018. Two facilities were determined to discharge to the City's MS4 and are now part of the City's industrial inventory.

[b] The County maintains an annual presence in the field by inspecting a percentage of industrial facilities annually, resulting in all facilities being inspected at least twice during a five-year permit term.

The inspection results for commercial facilities in 2016-2019 for the County are shown in **Table 81**.

Table 81. Summary of Commercial Inspections (County)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
Commercial facilities in current inventory	120	117	111
Facilities prioritized as high and requiring inspection[a]	60	62	58
Facilities inspected during the reporting period	5	41	48
Facilities adequately implementing BMPs	5	41	48
Facilities in compliance with stormwater control requirements	5	41	48
Facilities requiring follow-up inspections	0	0	0

[a] The total number of commercial facilities requiring inspection is estimated at about half of all inventoried facilities each year, to project an annual presence in the field. All facilities are inspected at least twice during a five-year permit term.

5.2.4.2 Industrial/Commercial Outreach (IC3)

In order to assist the industrial and commercial facilities in selecting and implementing the appropriate types of BMPs, the County developed BMP Fact Sheets for the high priority industrial and commercial businesses. The BMP Fact Sheets are distributed during the inspections and made available on the County's website.[39]

[39] http://sjcleanwater.org/Commercial%20Business.htm

Summaries of the BMP Fact Sheets distributed during industrial and commercial inspections in 2016-2019 for the County are shown in **Table 82**.

Table 82. BMP Fact Sheets Distributed During Industrial/Commercial Inspections (County)

Category	Total Number Distributed		
	2016-2017	2017-2018	2018-2019
Industrial			
Industrial Facilities	5	7	14
Commercial			
Automotive-Related Facilities	0	11	16
Restaurants/Food Service Establishments	5	28	21
Total	**10**	**46**	**51**

5.2.4.3 Enforcement (IC4)

The Enforcement Control Measure outlines the progressive levels of enforcement applied to industrial and commercial facilities that are out of compliance with local ordinances and establishes the protocol for referring apparent violations of facilities subject to the Industrial General Permit to the Regional Water Board.

No enforcement actions were taken by the County between 2016-2019.

5.2.4.4 Training (IC5)

The trainings associated with the Industrial and Commercial Program attended by County staff between 2016-2019 are summarized in **Table 83**.

Table 83. Industrial and Commercial Program Trainings Attended (County)

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee Departments or Divisions
5/18/2017	Stormwater Regional Training	2	Engineer IV Management Analyst II	Water Resources
5/16/2019	San Joaquin Valley Stormwater Quality Partnership 2019 Regional Training	2	Engineering Assistant Management Analyst II	Water Resources

5.2.5 Construction (CO)

During construction projects, a number of activities may generate or mobilize pollutants. The purpose of the Construction Program Element is to coordinate County programs and resources to effectively reduce pollutants in runoff from construction sites during all construction phases.

The County has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[40] The Construction Program Control Measures are summarized in **Table 84**.

Table 84. Construction Program Control Measures (County)

CO	Control Measure	Section 5
CO1	Municipal Code for Construction Sites	
CO2	Plan Review and Approval Process	
CO3	Construction Projects Inventory	
CO4	Construction Outreach	✓
CO5	Construction Site Inspections & BMP Implementation	✓
CO6	Enforcement	✓
CO7	Training	✓
CO8	Effectiveness Assessment	

Dissolved oxygen, methylmercury, and trash are addressed by the Construction Program Element. The Construction Program Element includes control measures to effectively reduce pollutants in runoff from construction sites during all construction phases, including inspections of construction sites and implementation of BMPs through the distribution of BMP fact sheets during inspections.

The implementation of this Program Element during 2016-2019 is summarized below.

5.2.5.1 Construction Outreach (CO4)

The County had no active construction sites greater than or equal to one acre in size between 2016-2019 and, therefore, did not distribute outreach materials during construction site inspections.

5.2.5.2 Construction Site Inspections & BMP Implementation (CO5)

The County inspects all construction sites greater than or equal to one (1) acre during the wet and dry seasons. The inspection program ensures that the specific minimum requirements are effectively implemented at construction sites. The County had no active constructions sites within the Phase I area greater than or equal to one acre in size between 2016-2019.

---

[40] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

5.2.5.3 Enforcement (CO6)

The Enforcement Control Measure outlines the progressive levels of enforcement applied to construction sites that are out of compliance with local ordinances and establishes the protocol for referring apparent violations of construction sites subject to the General Construction Permit to the Regional Water Board. The progressive enforcement and referral policy, as well as the accompanying legal authority, is an important tool for ensuring a fair and equitable approach to bringing contractors and developers into compliance with the County Code and ordinance requirements.

The County had no eligible construction sites during 2016-2019; therefore, no enforcement actions were taken.

5.2.5.4 Training (CO7)

The trainings associated with the Construction Program attended by County staff between 2016-2019 are summarized in **Table 85**.

Table 85. Construction Program Trainings Attended (County)

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee Departments or Divisions
5/18/2017	Stormwater Regional Training	2	Engineer IV Management Analyst II	Water Resources
9/26/2018	The Future of the Phase II MS4 Permit	4	Engineer V, Engineer I, Management Analyst 2	Water Resources
9/26/2018	Reviewing Post Construction Standards & Plans	4	Engineer V, Engineer I, Management Analyst 2	Water Resources
5/16/2019	San Joaquin Valley Stormwater Quality Partnership 2019 Regional Training	2	Engineering Assistant Management Analyst II	Water Resources
6/28/2019	Module 3 Construction Erosion & Sediment Control Plan Review and Inspection	15	Engineer I, II, & III Engineering Aide Bridge Division Manager Administrative Assistant	Field, Bridge, Community Infrastructure, Water Resources

5.2.6 Planning and Land Development (LD)

The addition of impervious areas for homes, industrial and commercial businesses, parking lots, streets and roads may increase the amount of stormwater runoff, as well as the potential for pollution. The Planning and Land Development Program Element ensures that the impacts on stormwater quality from new development and redevelopment are limited through implementation of Site Design Controls, Source Controls, Volume Reduction Measures, and Treatment Controls. The general strategy for development is to avoid, minimize, and mitigate (in that order) the potential adverse impacts to stormwater. The potential for long-term stormwater impacts from development is also reduced by requiring ongoing operation and maintenance of post-construction treatment controls selected for a site.

The County has developed and is implementing Control Measures and accompanying performance standards specific to this Program Element.[41] The Planning and Land Development Program Control Measures are summarized in **Table 86**.

Table 86. Planning and Land Development Program Control Measures (County)

LD	Control Measure	Section 5
LD1	Incorporation of Water Quality Protection Principles into City Procedures and Policies	
LD2	New Development Standards	
LD3	Plan Review Sign-Off	✓
LD4	Maintenance Agreement and Transfer	✓
LD5	Training	✓
LD6	Effectiveness Assessment	

All PWQCs are addressed by the Planning and Land Development Program Element. The Planning and Land Development Program Element includes control measures to ensure that the impact on stormwater quality from new development and redevelopment is limited. The general strategy for development is to avoid, minimize, and mitigate (in that order) the potential adverse impacts to stormwater.

The implementation of this Program Element during 2016-2019 is summarized below.

5.2.6.1 Plan Review Sign-off (LD3)

The County conducts comprehensive reviews of development plans to ensure that stormwater controls minimize water quality impacts by PWQCs. The priority projects reviewed by the County in 2016-2019 are summarized in **Table 87**.

---

[41] These Control Measures are based on the 2009 SWMP (and modifications thereto) and the NOI Work Plan submitted to and approved by the Regional Water Board as a part of the NOI application package and may change when the revised SWMP is developed.

Table 87. Project Plans and Priority Projects Reviewed (County)

Metric	Number Reviewed		
	2016-2017	2017-2018	2018-2019
Project Plans Reviewed	2	2	1
Acres Covered by Approved Priority Projects[a]	1.2	3.88	2.88
Priority Project Category[b]			
Significant Redevelopment	0	0	0
Commercial Developments (>100,000 SF)	0	0	0
Commercial Developments (>5,000 SF)	2	0	0
Automotive Repair Shops	0	1	0
Retail Gasoline Outlets	0	1	1
Restaurants	0	0	0
Parking Lots (> 5,000 SF or 25 spaces)	0	0	0
Streets and Roads (>1 acre paved surface)	0	0	0
Home Subdivisions (> 10 units)	0	0	0
Total Projects	**2**	**2**	**1**

[a] As of June 30 of each fiscal year.
[b] The Development Standards apply to all Priority Projects or phases of Priority Projects at the date of adoption unless the projects already had approval by the City or County Engineer, a permit for development or construction or an approved tentative map prior to the Development Standards date of adoption.

The type and number of post-construction BMPs (control measures) implemented as part of the priority projects that were approved by the County in 2016-2019 are shown in **Table 88**.

Table 88. Post-Construction BMPs Implemented in Priority Projects (County)

Control Measure Type	Total Number Approved		
	2016-2017	2017-2018	2018-2019
Site Design Controls			
G-1: Conserve Natural Areas	1	0	0
G-2: Protect Slopes and Channels	0	0	0
G-3: Minimize Soil Compaction	0	0	0
G-4: Minimize Impervious Area	1	0	0
Total Site Design Controls	**2**	**0**	**0**
Source Controls			
S-1: Storm Drain Message and Signage	1	0	0
S-2: Outdoor Materials Storage Area Design	0	0	0
S-3: Outdoor Trash Storage and Waste Handling Area Design	0	1	0
S-4: Outdoor Loading/Unloading Dock Area Design	0	0	0
S-5: Outdoor Repair/Maintenance Bay Design	0	0	0
S-6: Outdoor Vehicle/Equipment/Accessory Wash Area Design	0	0	0
S-7: Fuel Area Design	0	1	0

Control Measure Type	Total Number Approved		
	2016-2017	2017-2018	2018-2019
Total Source Controls	**1**	**2**	**0**
Volume Reduction Measures			
V-1: Rain Garden	0	0	0
V-2: Rain Barrel/ Cistern	0	0	0
V-3: Vegetated Roof	0	0	0
V-4: Interception Trees	0	0	0
V-5: Grassy Channel	0	0	0
V-6: Vegetated Buffer Strip	0	0	0
Total Volume Reduction Measures	**0**	**0**	**0**
Treatment Control Measures			
L-1: Bioretention	0	9	1
L-2: Stormwater Planter	0	0	0
L-3: Tree-well Filter	0	0	0
L-4: Infiltration Basin	0	1	0
L-5: Infiltration Trench	0	0	0
L-6: Porous Pavement Filter	0	0	0
L-7: Vegetated (Dry) Swale	0	0	0
L-8: Grassy Swale	0	0	0
L-9: Grassy Filter Strip	0	0	0
C-1: Constructed Wetland	0	0	0
C-2: Extended Detention Basin	1	0	0
C-3: Wet Pond	0	0	0
C-4: Proprietary Treatment Controls	0	0	0
Total Treatment Control Measures	**1**	**10**	**1**

5.2.6.2 Maintenance Agreement and Transfer (LD4)

The County performs post-construction BMP maintenance oversight to ensure that post-construction BMPs continue to function correctly and minimize water quality impacts. The number of completed priority projects with post-construction BMPs, as well as the number of inspections conducted and enforcement actions taken in 2016-2019 due to improper maintenance, are shown in **Table 89**.

Table 89. Post-Construction BMP Inspections and Enforcement (County)

Metric	Total Number		
	2016-2017	2017-2018	2018-2019
Completed priority projects with post-construction BMPs	4	1	0
Inspections conducted	1	1	0
Enforcement actions taken due to improper maintenance	0	0	0

5.2.6.3 Training (LD5)

The trainings associated with the Planning and Land Development Program attended by County staff between 2016-2019 are summarized in **Table 90**.

Table 90. Planning and Land Development Program Trainings Attended (County)

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee Departments or Divisions
5/27/2018	Phase II MS4 Regional Training: Landscape Design and Watershed Protection	7	Engineering Services Manager Management Analyst III Engineer IV Engineering Assistant III Management Analyst II Engineering Assistant I Administrative Assistant	Public Services, Community Infrastructure & Water Resources

This page intentionally left blank for printing purposes

6 Effectiveness Assessment: Short-Term

The Mid-Term Report is based on three years of data collected between 2016-2017 and 2018-2019 (**Section 5**). However, the short-term Effectiveness Assessment included in this Mid-Term Report is based on five years of data collected between 2014-2015 and 2018-2019.[42] This timeframe has been selected for the short-term effectiveness assessment to provide a sufficient amount of data that are most representative of current conditions, as it is challenging to conduct a meaningful assessment with insufficient data. Effective assessments performed prior to 2016-2017 typically contained data from an extended timeframe (i.e., beginning in 2003-2004) to allow identification of longer-term trends, if any, over time.

The Region-wide Permit (Provision V.E.5) states:

> *When reporting on the effectiveness of its Storm Water Management Program, the Permittee shall:*
>
> *i. Identify the management questions and metrics that were used for the assessment;*
>
> *ii. Identify the direct and/or indirect measurements that were used to track the effectiveness of the Storm Water Management Program as well as the outcome levels at which the assessment is occurring; and,*
>
> *iii. Track the progress of the SWMP towards achieving the milestones, strategies, and activities aimed at improving water quality.*

Since the revised SWMP is currently in development, the management questions required by the Region-wide Permit have not yet been identified. Thus, the short-term Effectiveness Assessment was performed using an approach similar to that used to develop the most recent Effectiveness Assessment (presented in the City and County's individual 2015-2016 Annual Reports).

The Effectiveness Assessment was modeled after the methodology described within the CASQA document, *A Strategic Approach to Planning for and Assessing the Effectiveness of Stormwater Programs* (February 2015). This methodology is focused on the impact of the stormwater program. This assessment approach is intended to improve the program's effectiveness at reducing discharges of the identified PWQCs (dissolved oxygen (i.e., oxygen-demanding substances), indicator bacteria, methylmercury, and trash), thereby protecting water quality.

The CASQA Effectiveness Assessment approach[43] utilizes a general model that aggregates three primary components from six outcome levels and associated, general outcome types. The three primary components are:

- <u>Sources and Impacts (Outcome Levels 4-6)</u> – This component addresses the generation, transport, and fate of urban runoff pollutants. It includes sources (e.g., sites, facilities, areas), stormwater conveyance systems, and the water bodies that ultimately receive the source discharges (receiving waters). This component is typically assessed on a long-term basis.

---

[42] This date range references the fiscal years 2014-2015 through 2018-2019, or July 1, 2014 to June 30, 2019.

[43] See 2015 CASQA Guidance Document, Section 2.0: Stormwater Management Approach.

- <u>Target Audiences (Outcome Levels 2-3)</u> – This component focuses on understanding the behaviors of the people responsible for source contributions by exploring the factors that determine existing behavioral patterns and looking for ways to replace polluting behaviors with non-polluting behaviors. This component is typically assessed on a short- and/or long-term basis.
- <u>Stormwater Programs (Outcome Level 1)</u> – Stormwater programs are the road map for the improvements that managers wish to attain in receiving waters. Their immediate purpose is to describe programs that will facilitate changes in the behaviors of key target audiences. This component is typically assessed on a short-term basis.

The six categories of outcome levels establish a logical and consistent organizational scheme for assessing and relating individual outcomes. This Effectiveness Assessment will focus on Outcome Levels 2 through 4 (OL2, OL3, and OL4), since Outcome Level 1 has been addressed, in part, by reporting the implementation of programmatic activities (**Section 5**), and Outcome Levels 5 and 6 are determined through long-term effectiveness assessments.

The Short-Term Effectiveness Assessment is presented by Program Element in the following subsections:

- Section 6.1 City Effectiveness Assessment
    - Section 6.1.1 Illicit Discharge Program (ID) Effectiveness Assessment
    - Section 6.1.2 Public Outreach Program (PO) Effectiveness Assessment
    - Section 6.1.3 Municipal Operations Program (MO) Effectiveness Assessment
    - Section 6.1.4 Industrial and Commercial Program (IC) Effectiveness Assessment
    - Section 6.1.5 Construction Program (CO) Effectiveness Assessment
    - Section 6.1.6 Planning and Land Development Program (LD) Effectiveness Assessment
- Section 6.2 County Effectiveness Assessment
    - Section 6.2.1 Illicit Discharge Program (ID) Effectiveness Assessment
    - Section 6.2.2 Public Outreach Program (PO) Effectiveness Assessment
    - Section 6.2.3 Municipal Operations Program (MO) Effectiveness Assessment
    - Section 6.2.4 Industrial and Commercial Program (IC) Effectiveness Assessment
    - Section 6.2.5 Construction Program (CO) Effectiveness Assessment
    - Section 6.2.6 Planning and Land Development Program (LD) Effectiveness Assessment

6.1 CITY EFFECTIVENESS ASSESSMENT

6.1.1 Illicit Discharge Program Effectiveness Assessment

The effectiveness of the City's programmatic activities associated with the Illicit Discharge Program Control Measures is assessed below.

6.1.1.1 Detection of Illicit Discharges and Illegal Connections (ID1)

Public Reporting - The public is aware of the available reporting phone number and website and has provided notifications/complaints through these systems0. [**OL2**]

The City received an increasing number of notifications between 2014-2015 and 2017-2018. The number then decreased in 2018-2019; however, the number of notifications or complaints varies from year to year depending on when and where illicit discharges occur (**Figure 10**).

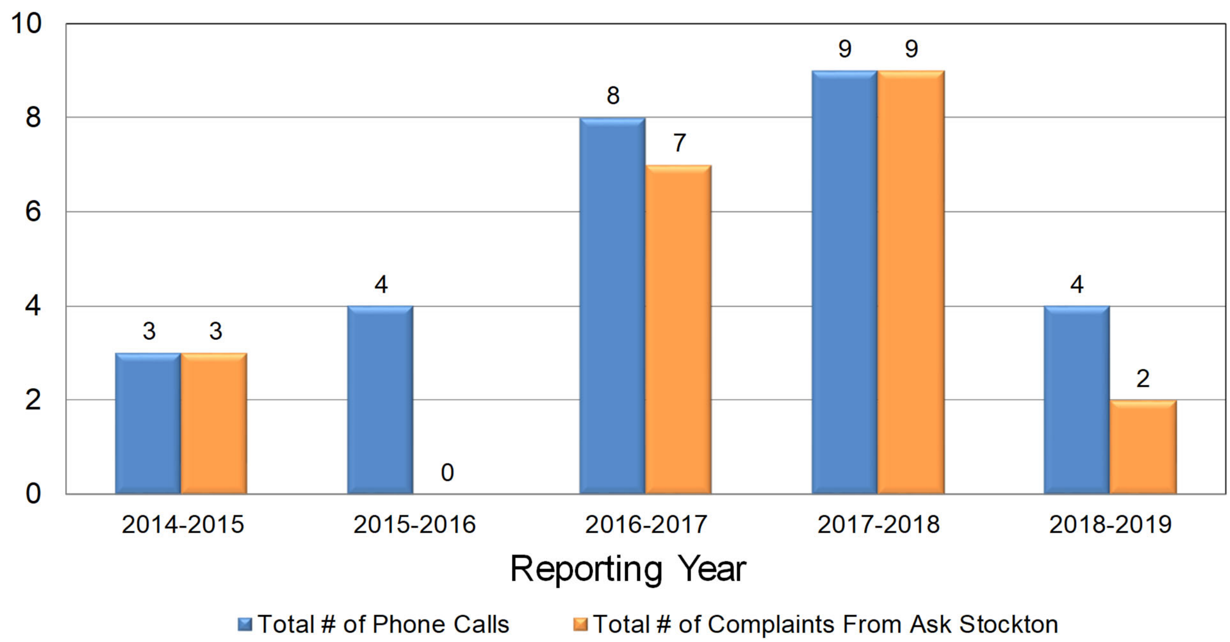


Figure 10. ID1 – Number of IDDE Complaints from Phone/AskStockton (City)

Field Crew Inspections – With few exceptions, the awareness of field inspectors regarding what constitutes a problematic water pollution incident, based on the percent of potential illicit discharges identified and verified in the field, has been high in recent years. [**OL2**]

The percent of illicit discharges verified by City field crew inspections rose from 86% to 93% between 2015-2016 and 2018-2019 (**Figure 11**).

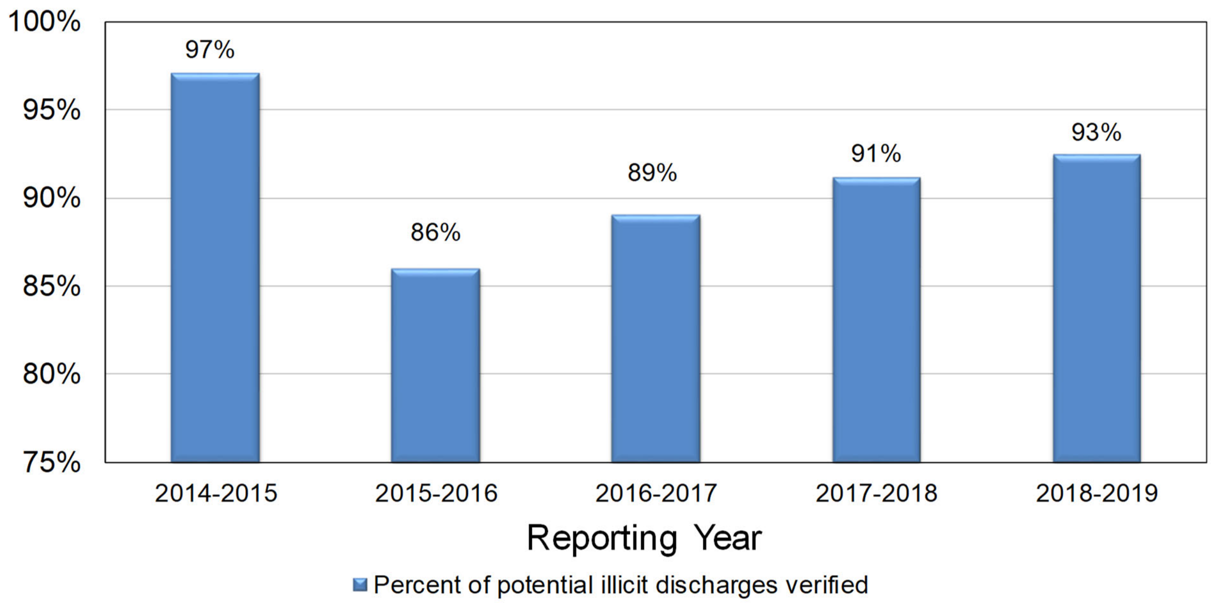


Figure 11. ID1 – Field Crew Inspections (Percent Verified) (City)

6.1.1.2 Investigation/Inspection and Follow Up (ID3)

Water Pollution Complaints – As field staff verify, characterize, and document illicit discharges, they are demonstrating awareness of the different types of materials involved, as indicated by the high percentage of illicit discharges identified using a specific waste category instead of Miscellaneous or Unidentified. [**OL2**]

City field crews have maintained high identification rates, with a slightly reduced rate in 2018-2019 due to staffing changes (**Figure 12**).

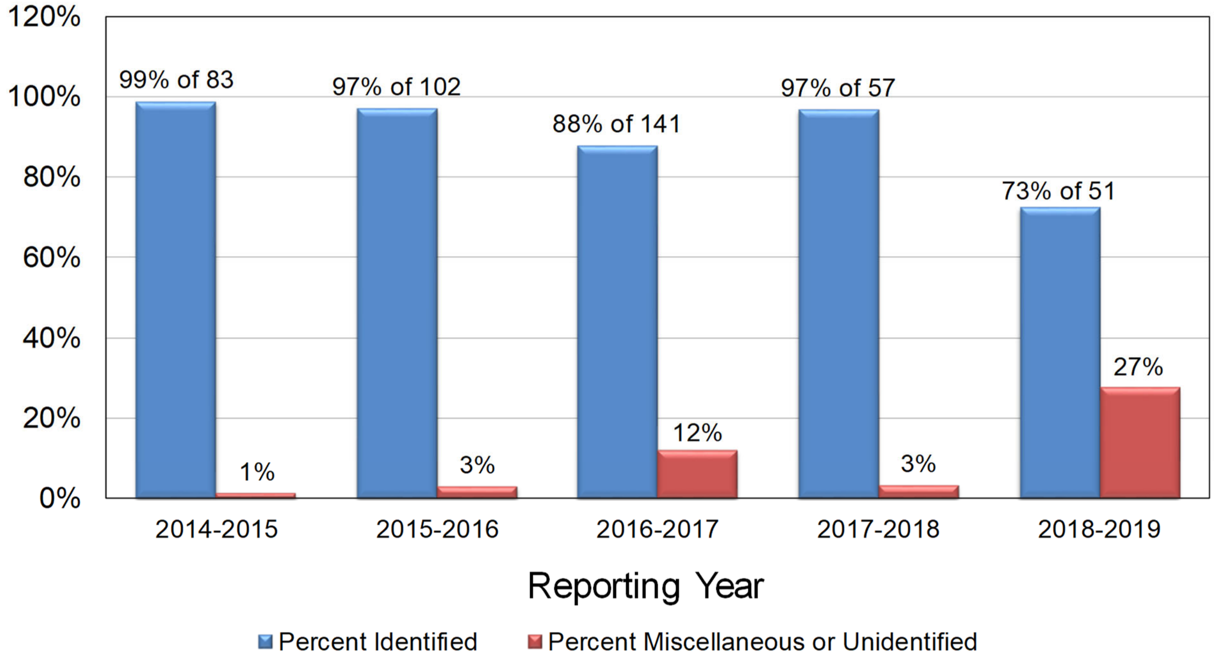


Figure 12. ID3 – Water Pollution Complaints: Percent Identified Materials (City)

6.1.2 Public Outreach Program Effectiveness Assessment

The effectiveness of the City's programmatic activities associated with the Public Outreach Program Control Measures is assessed below.

6.1.2.1 Public Participation (PO1)

Stream Cleanup Events – The public is aware of the education campaign and community events and is involved in the stormwater program. Materials are being removed from the local creeks and streams, thus reducing the amount of materials that may adversely impact the local waterways. [**OL2, OL4**]

The City and County organized an average of 875 volunteers per year at an average of 14 sites over the past five years, and removed 56 tons of trash/debris (**Figure 13** and **Figure 14**).

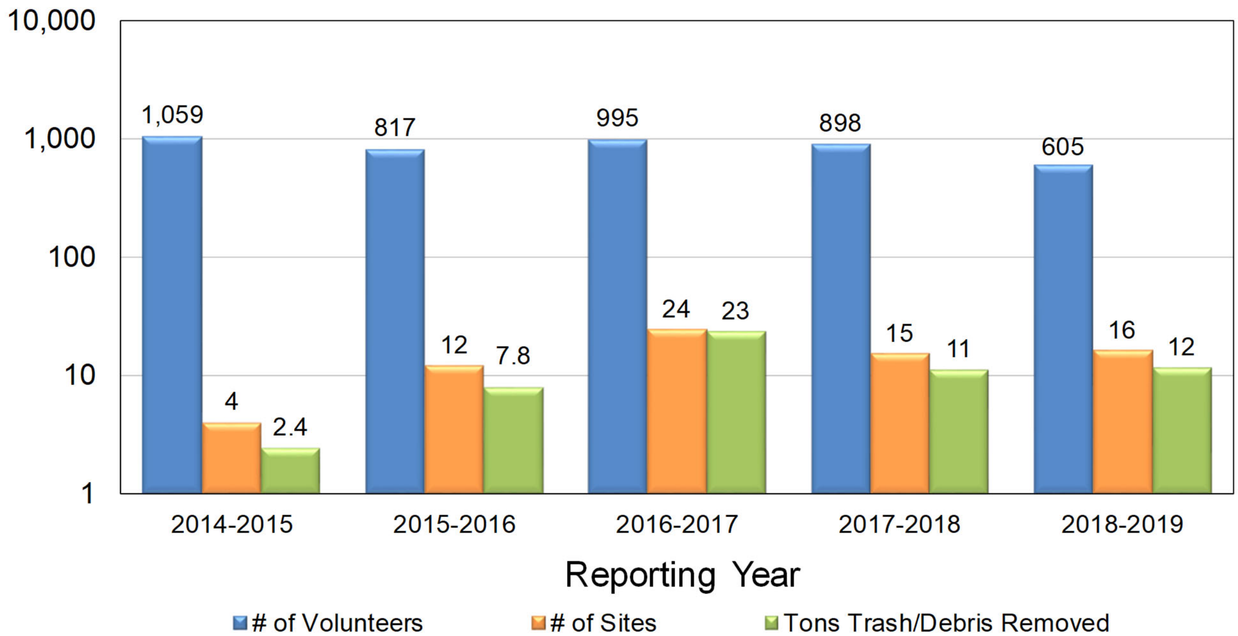


Figure 13. PO1 – Community Stream Clean Up Events

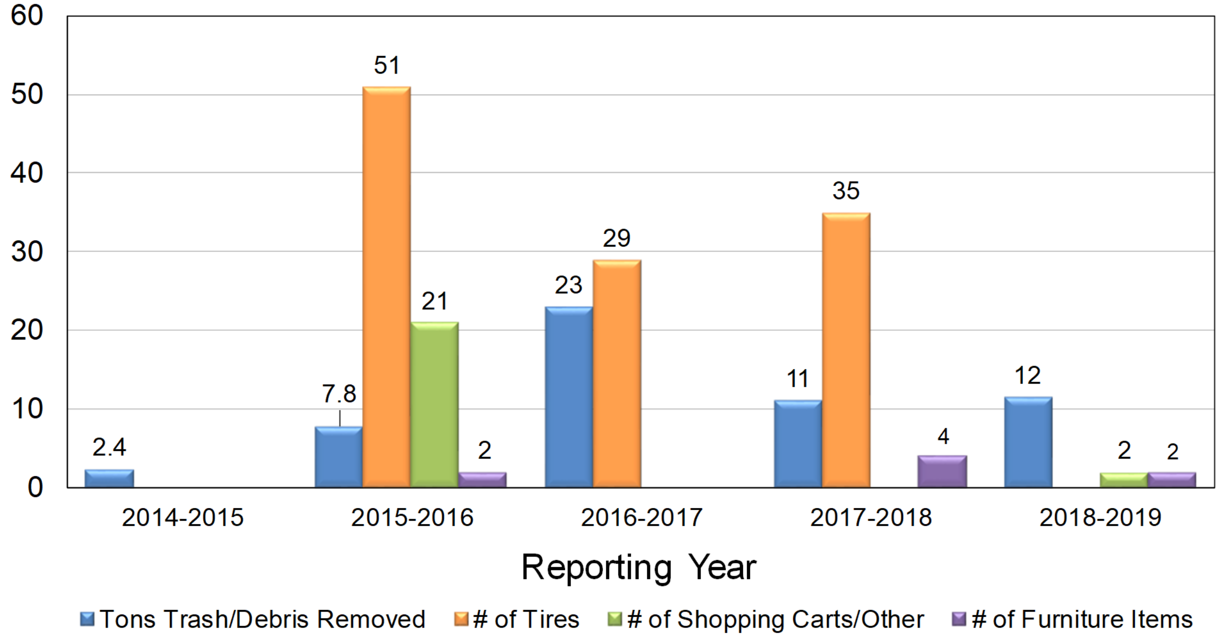


Figure 14. PO1 – Stream Clean Up Trash Removal

Used Oil and HHW Programs – The City and County have collected used oil and filters, mercury-containing products, and other household hazardous waste from their residents for proper disposal, increasing awareness and reducing the potential load of pollutants that could enter the storm drain system. Additionally, an increase in waste collected represents changing behaviors on the part of residents. [**OL2, OL3, OL4**]

Over the last five years, 1,744,518 gallons of used oil and 596,295 used oil filters (**Figure 15**) and 1,408 pounds of mercury (**Figure 16**) have been collected through the HHW Program. The amount of mercury collected annually has increased over the last five years.

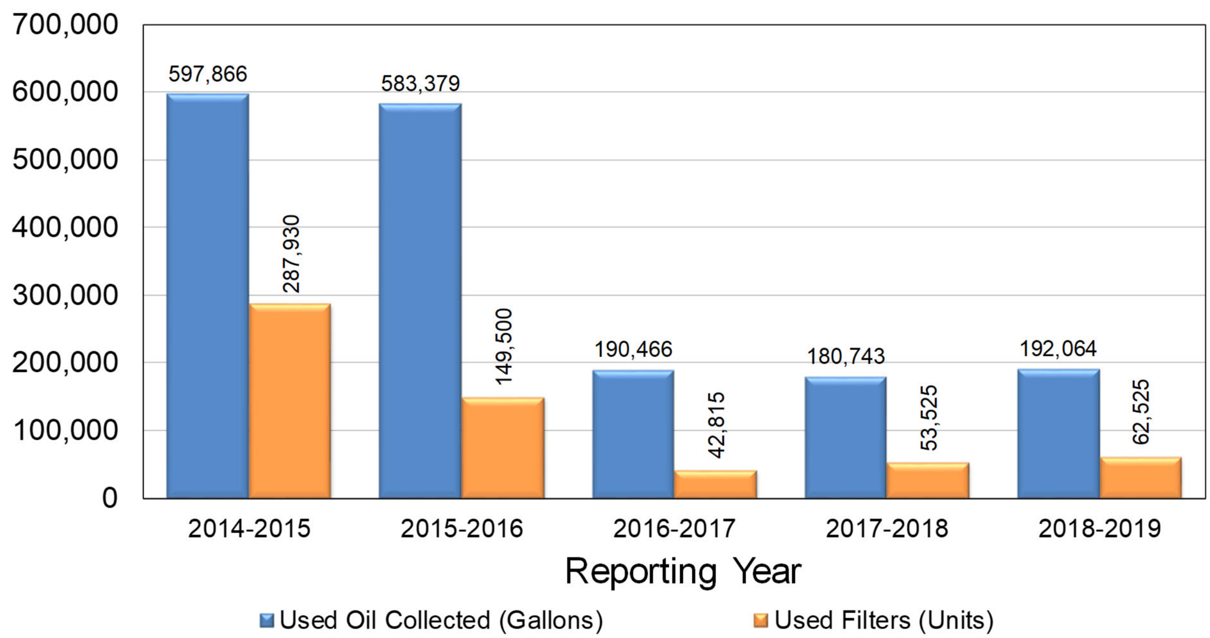


Figure 15. PO1 – HHW Used Oil & Filters Collected

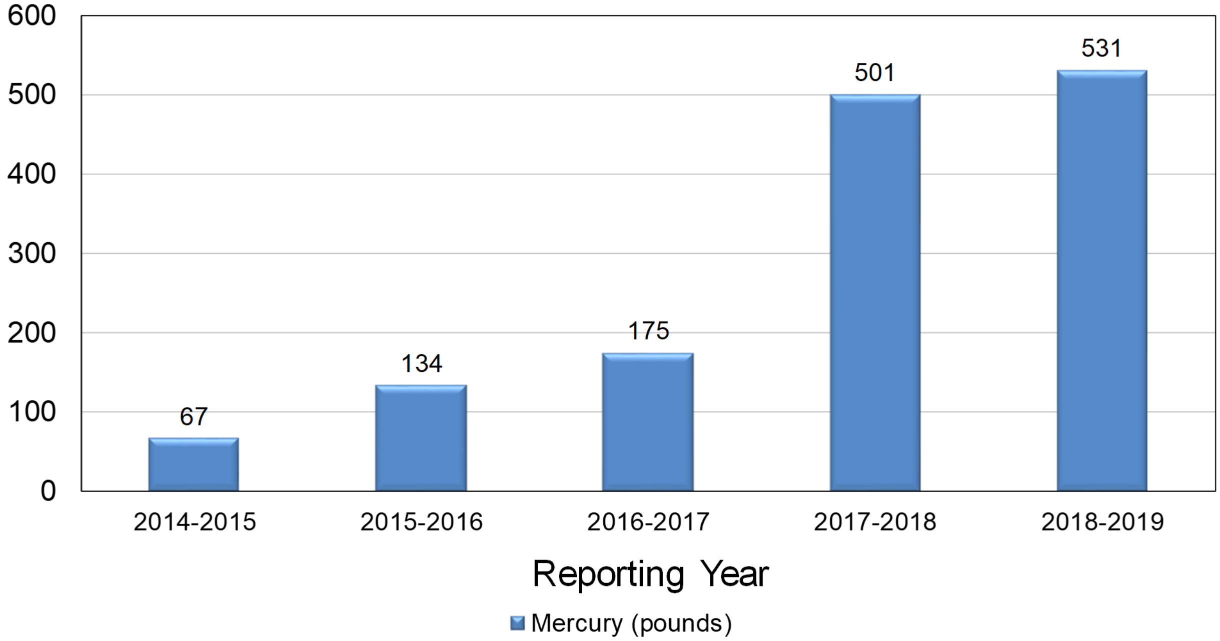


Figure 16. PO1 – HHW Mercury Collected

The City and County are raising awareness about HHW collection services and are increasing the amount of HHW that is being disposed of properly, thus reducing the potential load of pollutants that could enter the storm drain system. [**OL2, OL3, OL4**]

- Residents have properly disposed of HHW through the permanent collection facility. Since 2014-2015, these efforts have resulted in approximately 4,759,264 pounds of hazardous waste being collected and disposed of properly.
- On average, the amount of HHW properly disposed has increased by 114% between 2014-2015 and 2018-2019. This proper disposal of HHW ensures that potential impacts to the storm drain or receiving waters are prevented (**Figure 17**).

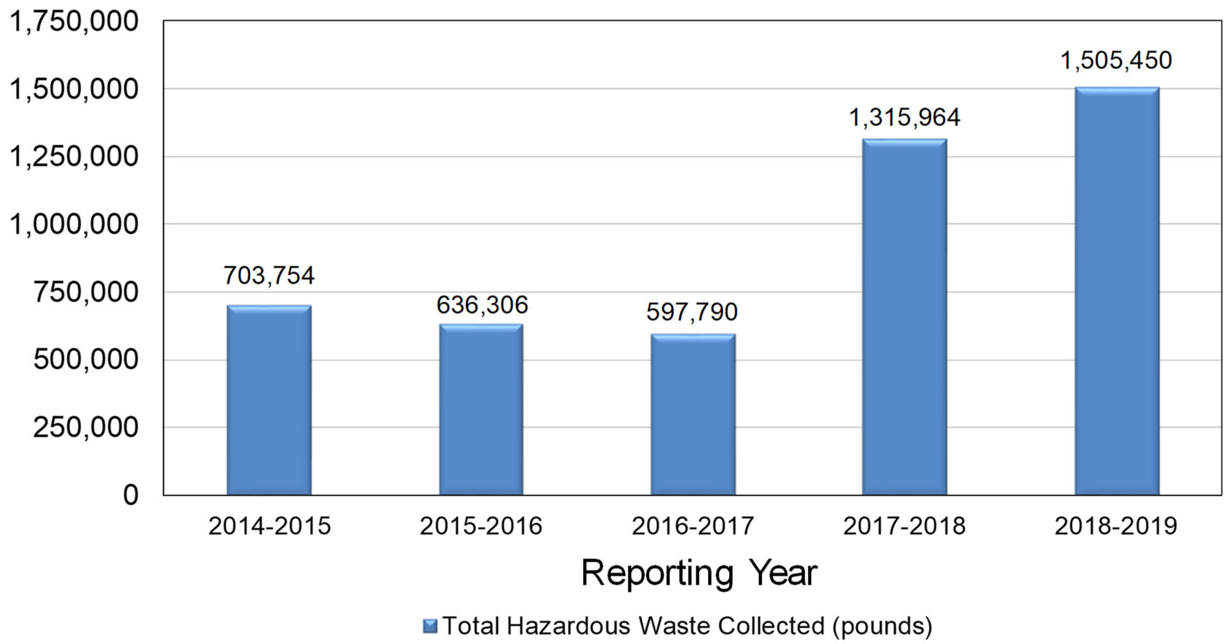


Figure 17. PO1 – Total HHW Collected

6.1.3 Municipal Operations Program Effectiveness Assessment

The effectiveness of the City's programmatic activities associated with the Municipal Operations Program Control Measures is assessed below.

6.1.3.1 Sanitary Sewer Maintenance & Overflow and Spill Response (MO1)

Implement SSO Emergency Response Plan – In general, a downward trend has been observed in the total annual number of SSOs and those reaching a storm drain or receiving waters, indicating that implementation of the SSOERP has been effective. [**OL4**]

Since 2014-2015, 539 SSOs have occurred (along 1,500 total miles of pipe) and were responded to by the City, representing 36 SSOs per 100 miles of sanitary sewer pipeline. Of the 539 spills within the City, 109 (20%) reached the storm drain system and no more than 19 (3.5%) reached a receiving water, or 4% of the total SSOs per year (**Figure 18**). Conversely, an average of 80% of SSOs did not reach the storm drain, and an average of 96% did not reach a receiving water (**Figure 19**).

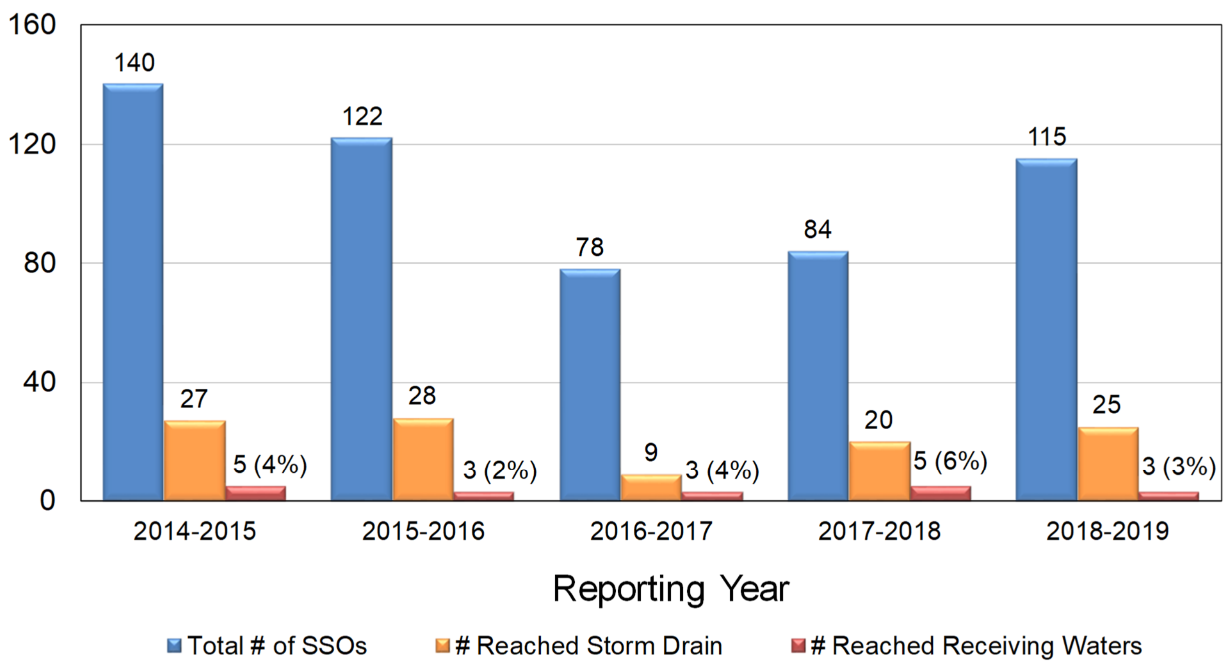


Figure 18. MO1 – Sanitary Sewer Overflows (City)

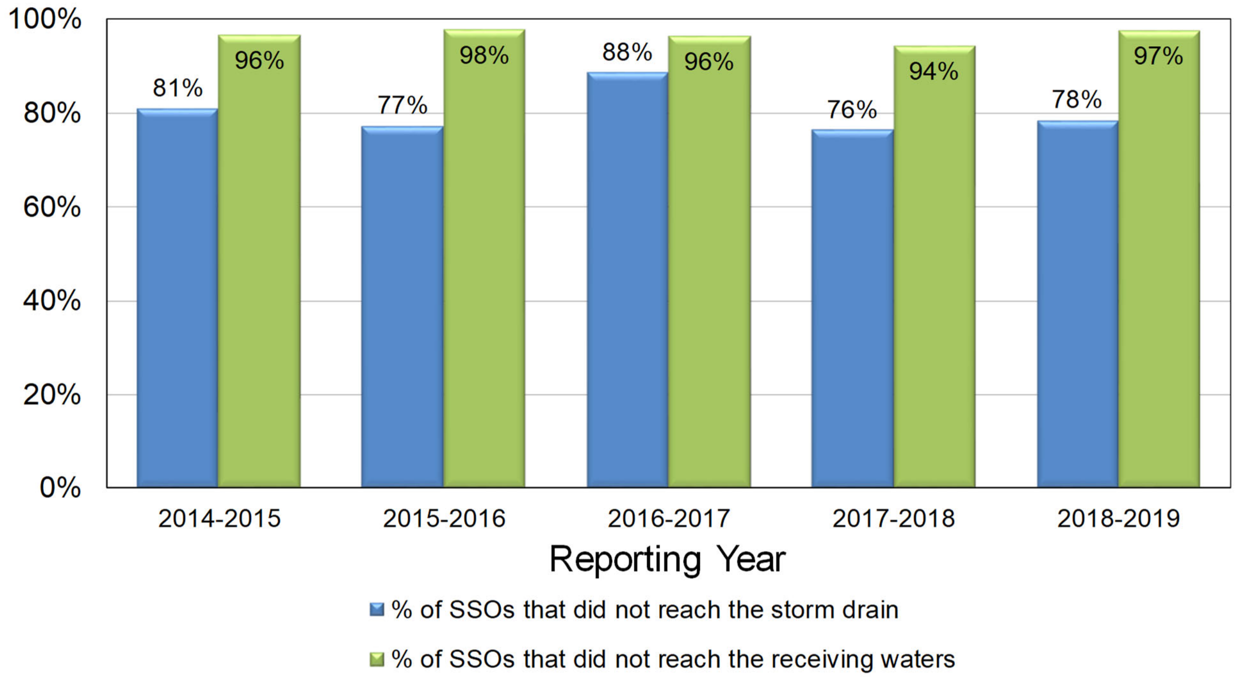


Figure 19. MO1 – Percent Sanitary Sewer Overflows Not Reaching Storm Drain or Receiving Waters (City)

6.1.3.2 Landscape and Pest Management (MO4)

Fertilizer Application – Fertilizer application data for prior years 2014-2015 and 2015-2016 may be incomplete. The City's nitrogen fertilizer use decreased between 2016-2017 and 2017-2018, with an average of 7,082 pounds per year applied between 2016-2019 (**Figure 20**). City nitrogen fertilizer application averaged six pounds per acre between 2014-2015 and 2018-2019. The City's rate of phosphorus fertilizer application remained at approximately half a pound per acre during that time period, with the exception of 2016-2017, when an increased amount was used (**Figure 21**).

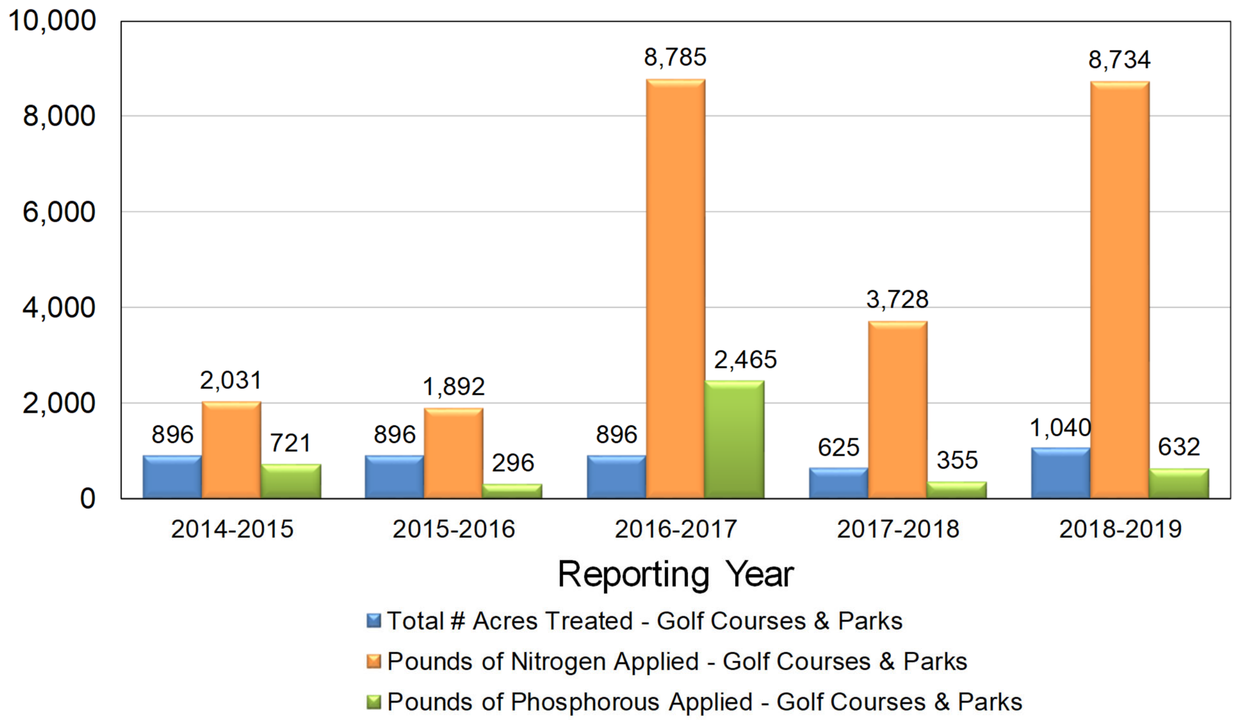


Figure 20. MO4 – Fertilizer Application (City)

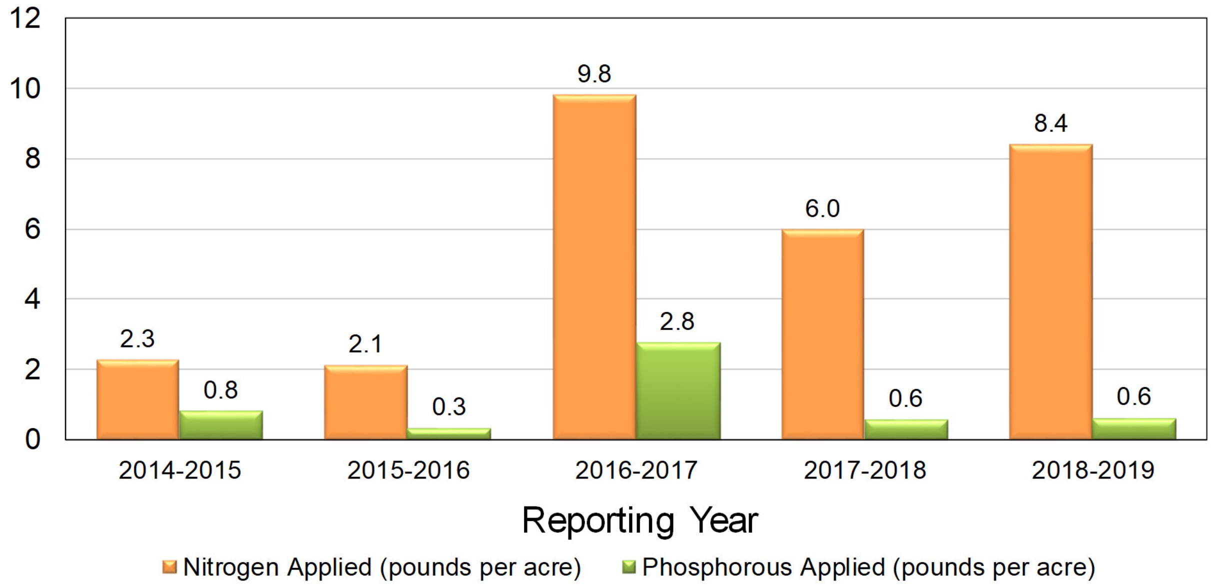


Figure 21. MO4 – Fertilizer Application per Acre (City)

6.1.3.3 Storm Drain System Maintenance (MO5)

Catch Basin Maintenance – The amount of material removed from catch basins[44] shows that the City is diverting these pollutants from the storm drain system and receiving waters. [**OL4**]

The City removed 98 tons of material from catch basins between 2014-2015 and 2018-2019, an average of 20 tons per year (**Figure 22**).

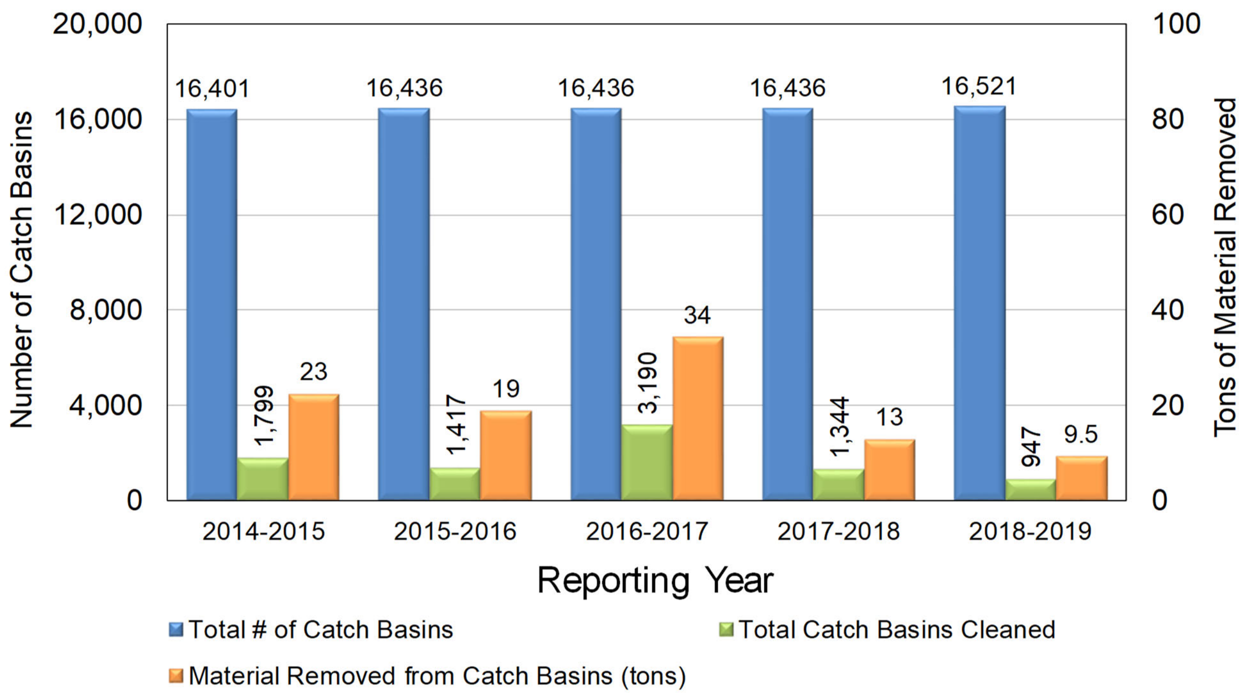


Figure 22. MO5 – Catch Basin Maintenance (City)

[44] The total number of catch basins includes all high priority catch basins and low priority manhole/catch basin combinations and BMP catch basin combinations.

Pump Station Maintenance - The amount of material removed from pump stations shows that the City is diverting these pollutants from the storm drain system and receiving waters. [**OL4**]

The City removed 263 tons of material from pump stations between 2014-2015 and 2018-2019, an average of 53 tons per year (**Figure 23**).

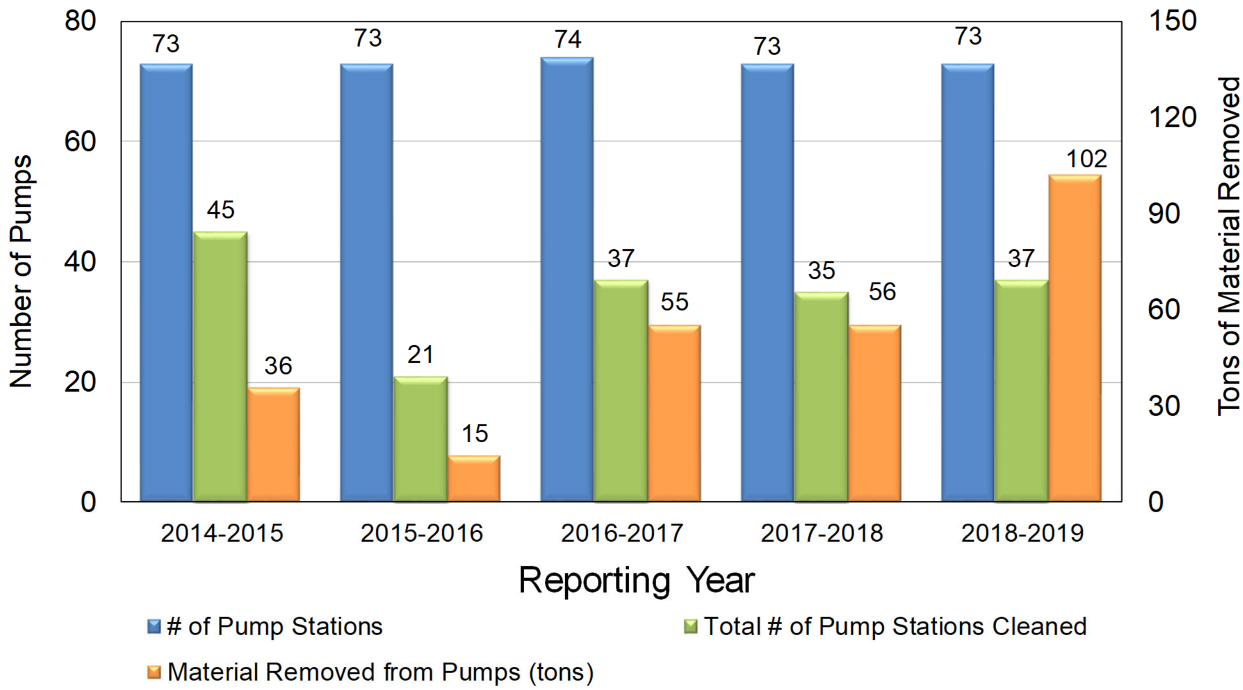


Figure 23. MO5 – Pump Station Maintenance (City)

Special Use Permits/Provisions - The City is requiring large events to address trash and debris removal by applying for and complying with special use permits. The amount of material (trash) collected from special (large) events shows the effectiveness of the program in diverting waste from stormwater. [**OL4**]

A total of 2,950 tons of waste and 36 tons of recycling has been diverted from stormwater through special use permits between 2014-2015 and 2018-2019 (**Figure 24**).

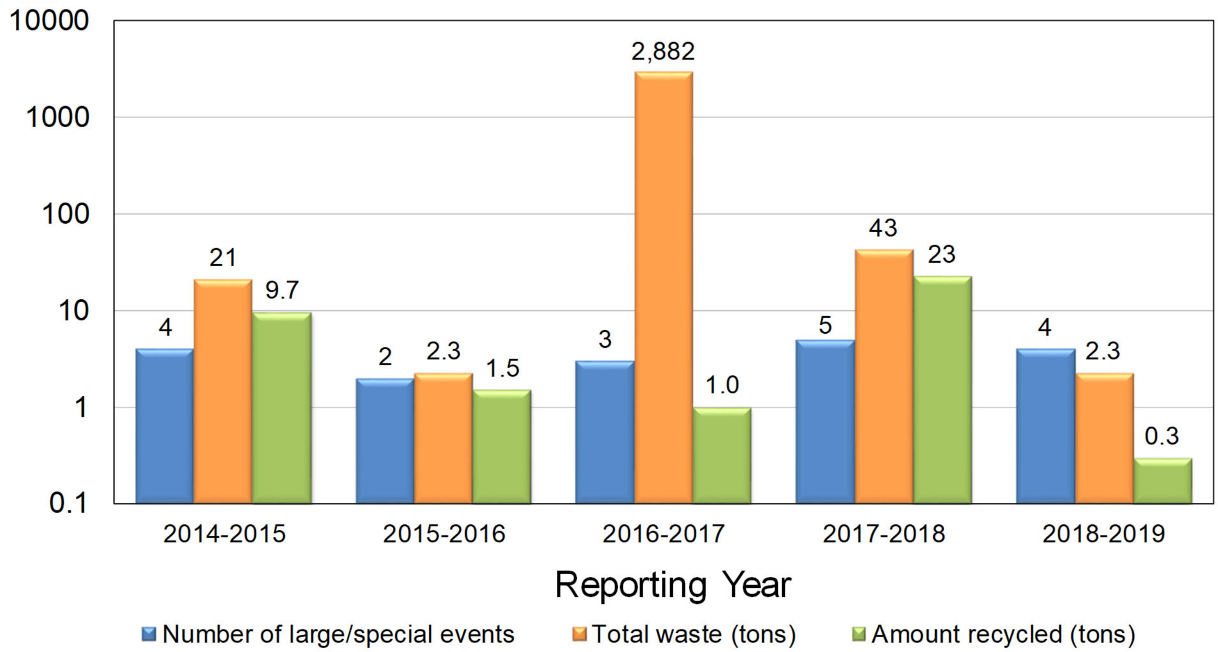


Figure 24. MO5 – Special Use Provisions

6.1.3.4 Street Cleaning and Maintenance (MO6)

The amount of material removed through street sweeping activities shows that the City is diverting these pollutants from the storm drain system and receiving waters. [**OL4**]

The City has collected 33,948 tons of debris and 294,107 tons of green waste between 2014-2015 and 2018-2019 (**Figure 25**).

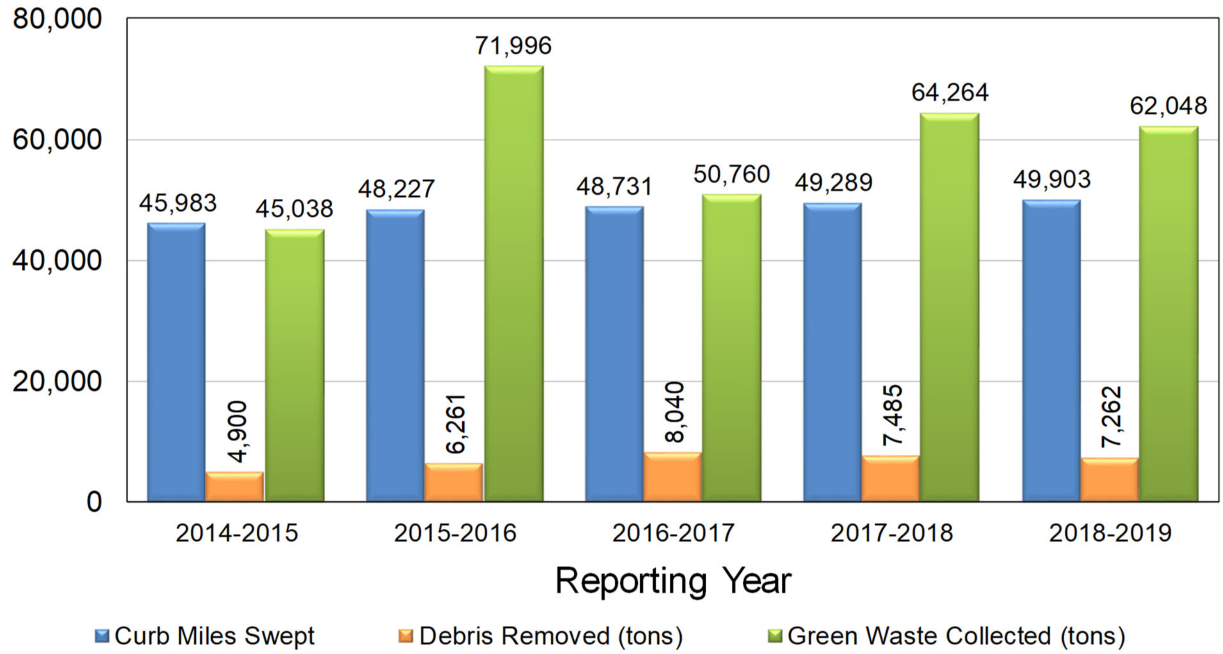


Figure 25. MO6 – Street Sweeping (City)

6.1.4 Industrial and Commercial Program Effectiveness Assessment

The effectiveness of the City's programmatic activities associated with the Industrial and Commercial Program Control Measures is assessed below.

6.1.4.1 Facility Inventory (IC1) and Prioritization and Inspection (IC2)

Industrial and Commercial Inspections – The City is proactively inspecting industrial and commercial facilities, providing outreach to increase awareness of the BMPs that should be implemented to protect stormwater quality, and determining whether these facilities are adequately implementing BMPs. [**OL2**]

In 2016-2017, the City updated its industrial facility inventory and revised its inspection criteria and reporting methods. Therefore, only inspection data collected between 2017-2019 are comparable (i.e., data prior to 2017-2018 are not shown). While the inspection criteria were being updated in 2016-2017, the City did not track the results of industrial inspections performed. The City inspected an average of 63 high priority industrial facilities during 2017-2018 and 2018-2019, in order to inspect all facilities at least once during the permit term. Approximately 29% of the inspected facilities required follow-up inspections between 2017-2019 (**Figure 26**).

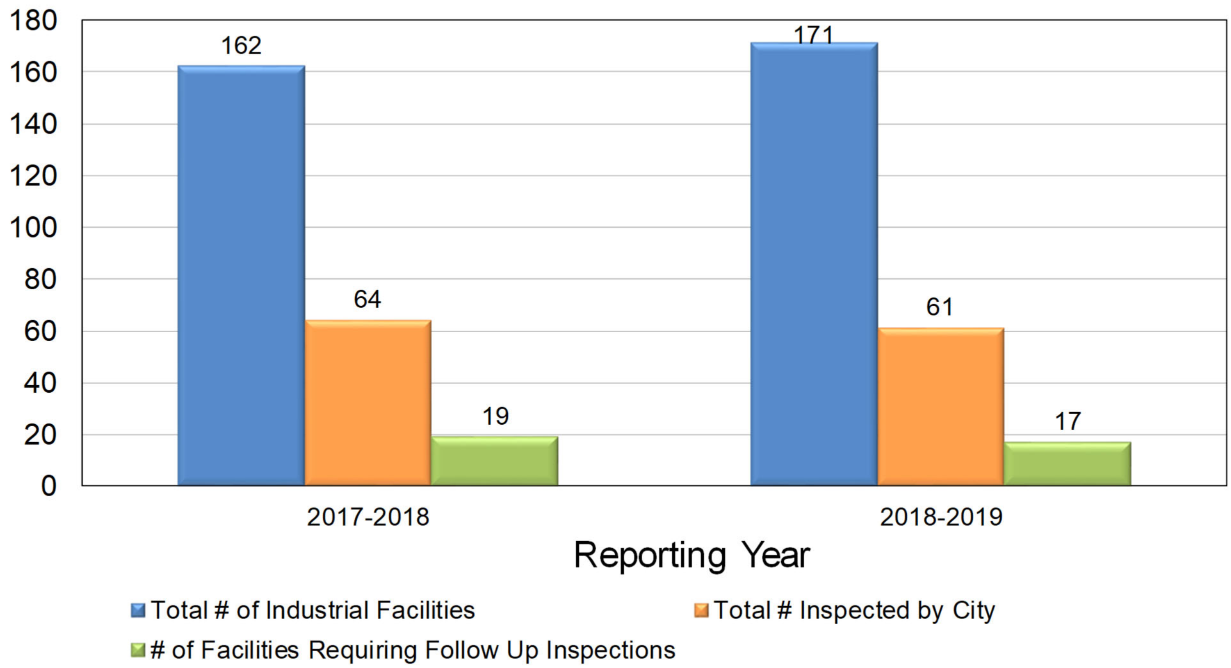


Figure 26. IC1 & IC2 – Industrial Facilities and Inspections (City)

As the City intends to inspect all industrial facilities within the permit term, the same facilities are not inspected from year to year. Therefore, the inspection results of one year are not comparable to the next, as the facilities inspected were different. Since the new inspection criteria were developed in 2016-2017, 82% of industrial facilities have had SWPPPs onsite during inspections, 54% have had adequate BMPs at initial inspections, and 40% have been in general compliance with stormwater requirements (**Figure 27**).

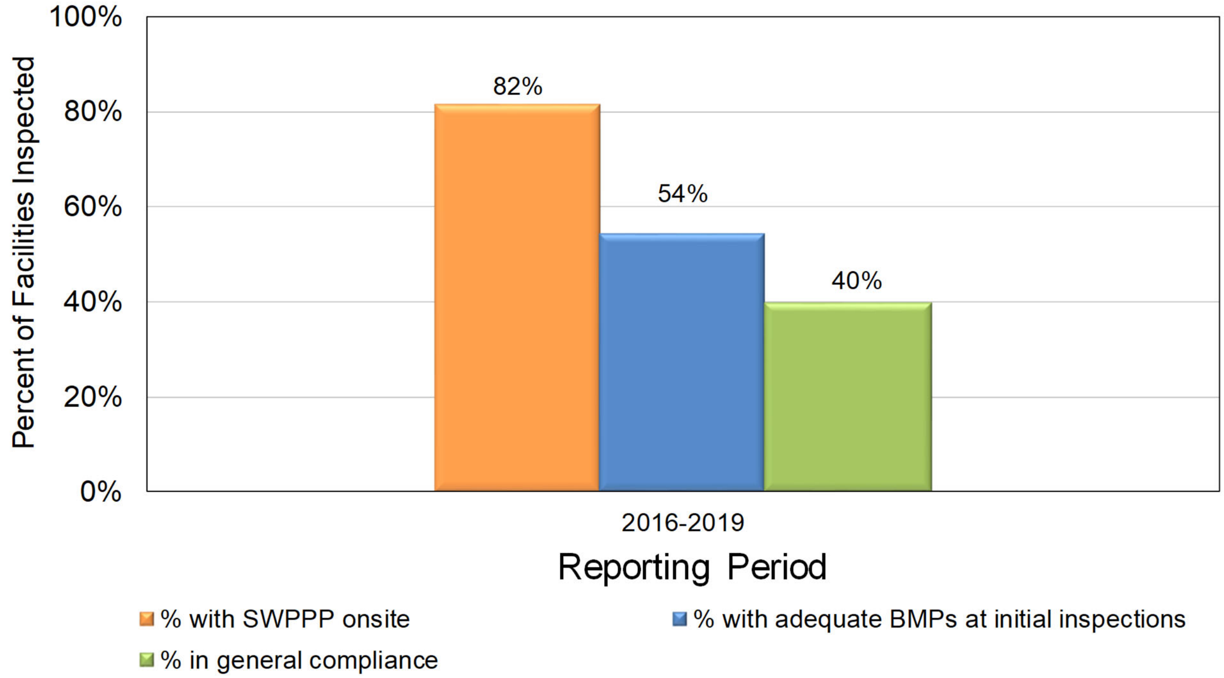


Figure 27. IC2 – Industrial Facility Inspection Results (City)

In 2016-2017, the City updated its industrial facility inventory and revised its inspection criteria and reporting methods. Therefore, only inspection data collected between 2017-2019 is comparable (i.e., data prior to 2017-2018 are not shown). Between 2016-2017 and 2018-2019, the City was adding facilities to its inventory annually, as they were verified and inspected; thus, the number of facilities reported each year represents only a portion of the total number of facilities actually within the City's jurisdiction. The City inspected an average of 351 commercial facilities between 2016-2017 and 2018-2019, in order to inspect each facility once every two years. (**Figure 28**).

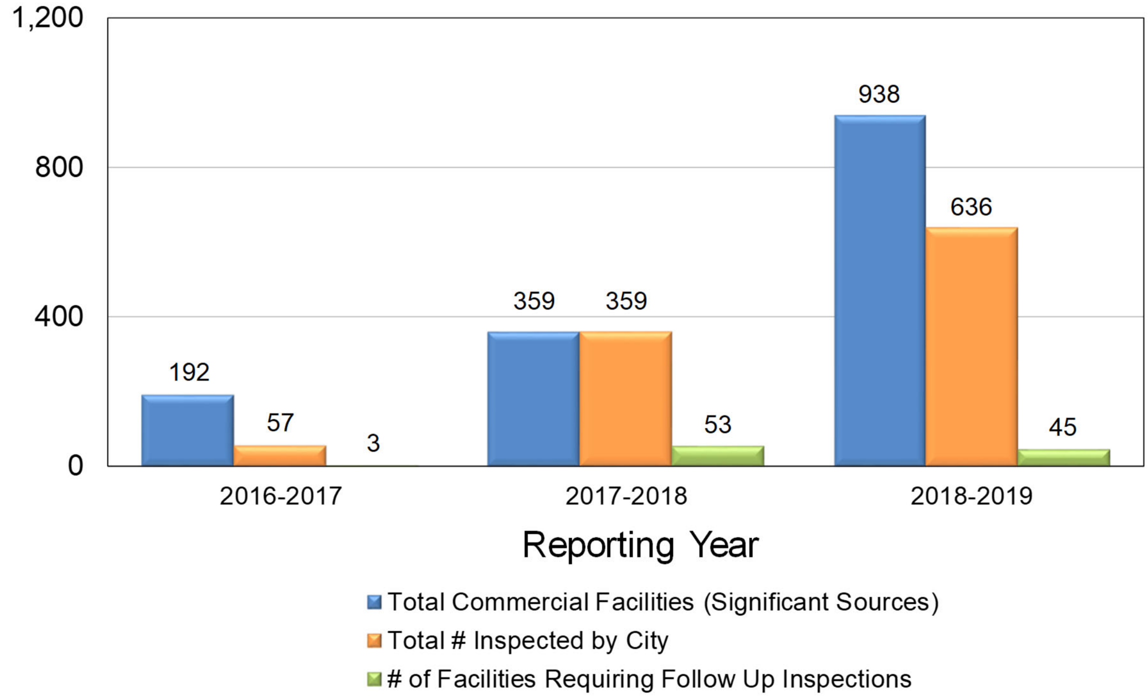


Figure 28. IC1 & IC2 – Commercial Facilities and Inspections (City)

The City inspects each commercial facility once every two years. Therefore, the inspection results are grouped into two-year periods. Since the new inspection criteria were developed in 2016-2017, very few inspections were performed during that fiscal year, so it was assumed that the time period 2016-2019 represents two years' worth of commercial facility inspections. A total of 25% of commercial facilities had adequate BMPs at initial inspections and 33% were in general compliance with stormwater requirements during the reporting period (**Figure 29**).

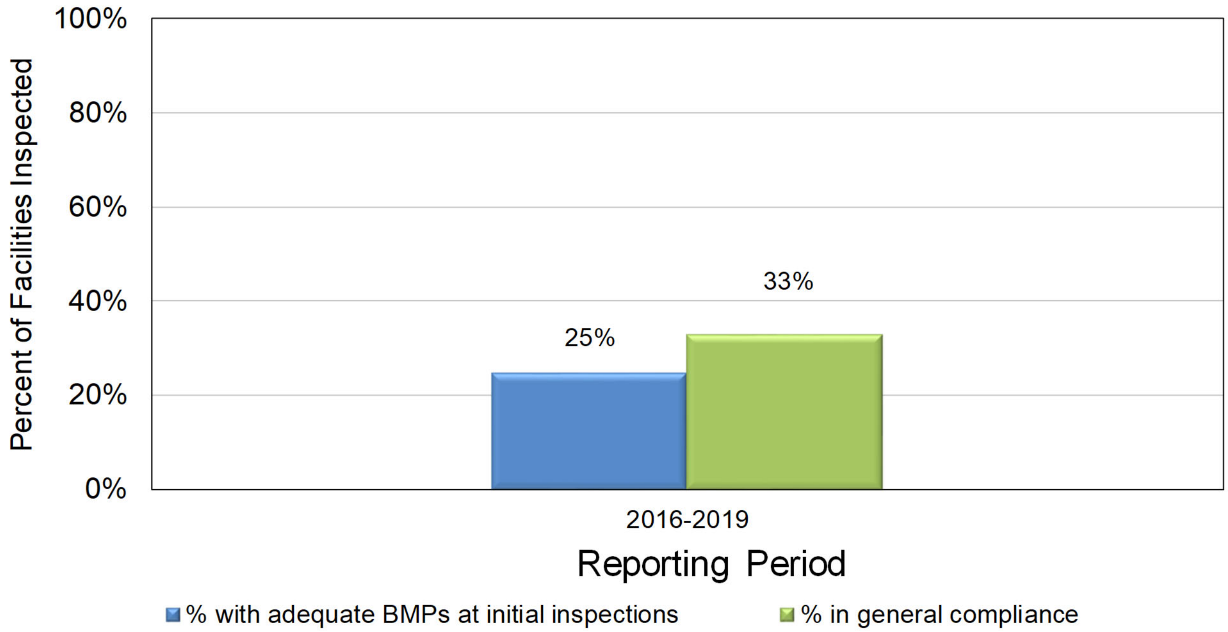


Figure 29. IC2 – Commercial Facility Inspection Results (City)

6.1.5 Construction Program Effectiveness Assessment

The effectiveness of the City's programmatic activities associated with the Construction Program Control Measures is assessed below.

6.1.5.1 Construction Site Inspections & BMP Implementation (CO5)

The City continues to work to educate construction site owners and operators as needed so that they are aware of the BMPs that are required to be implemented and maintained. [**OL2**]

Since 2015-2016, the City has been increasing the number of follow-up inspections conducted per site to inform construction site owners and operators of the need to implement sediment and erosion control BMPs (**Figure 30**).

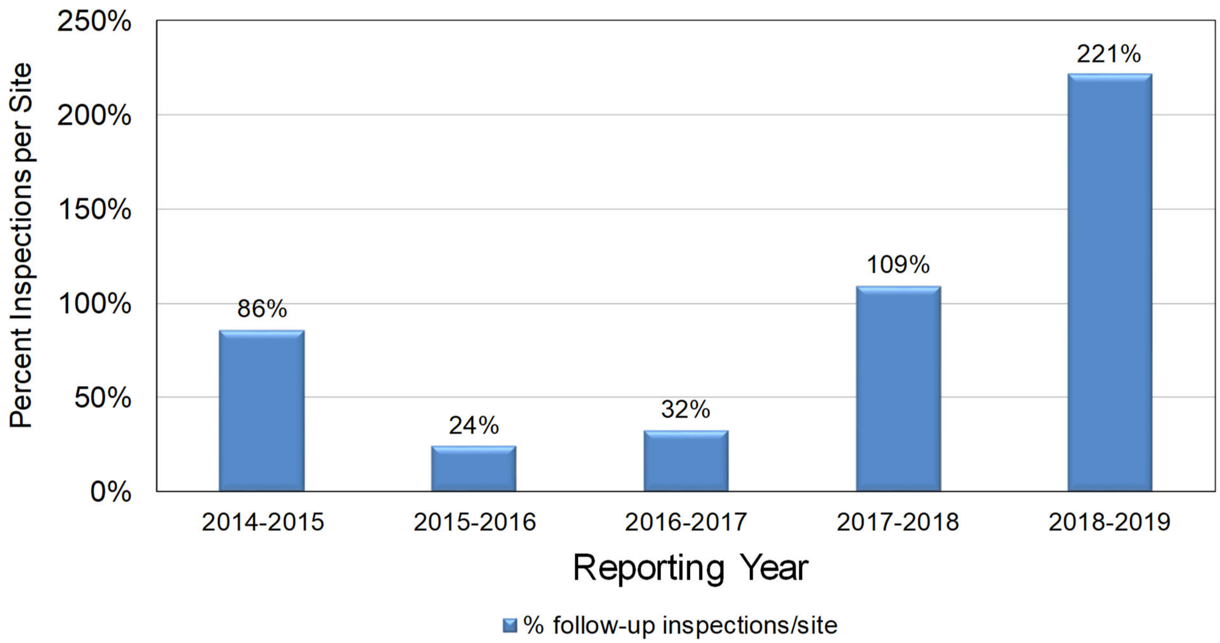


Figure 30. CO5 – Percent Follow-up Inspections (City)

6.1.5.2 Training (CO7)

The pre- and post-training surveys conducted after Construction Program training activities indicate that staff have been effectively trained and demonstrated increased understanding of the concepts presented. [**OL3**]

The City conducted a pre- and post-training survey during a staff training held in 2016-2017. Nineteen participants achieved an average of 60% correct on the pre-training survey, and 83% correct on the post-training survey, a 24% increase in understanding (**Figure 31**).

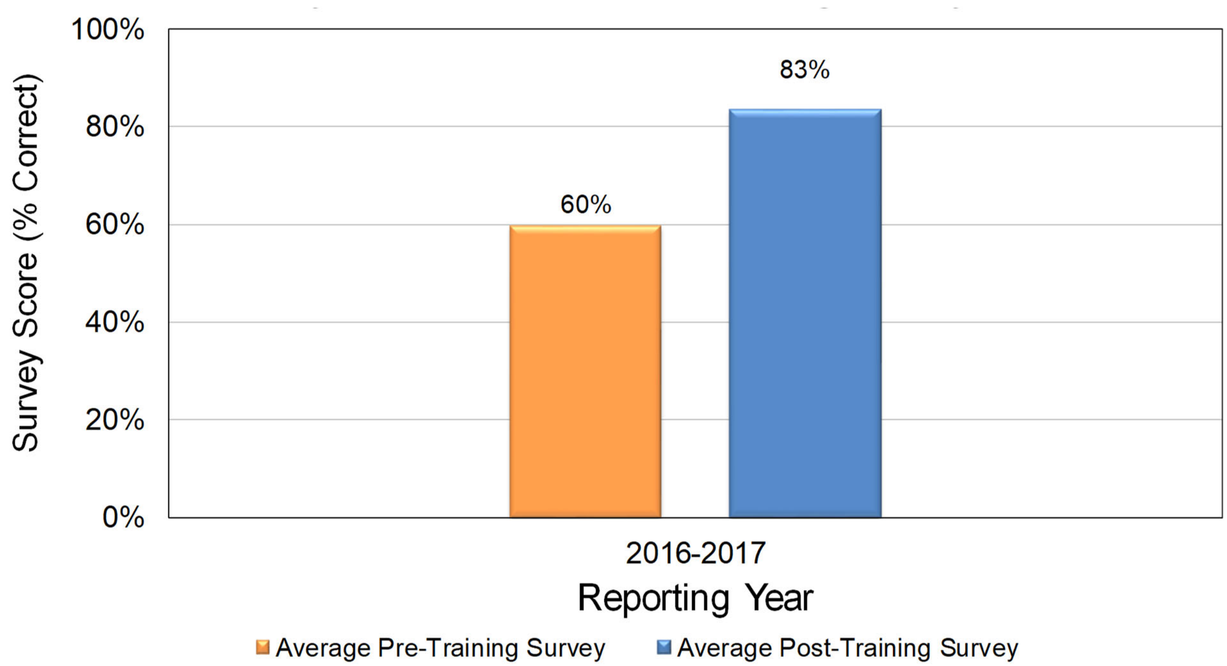


Figure 31. CO7 – Pre- and Post-Training Survey Results (City)

6.1.6 Planning and Land Development Program Effectiveness Assessment

The effectiveness of the City's programmatic activities associated with the Planning and Land Development Program Control Measures is assessed below.

6.1.6.1 Maintenance Agreement and Transfer (LD4)

The City programs have been requiring compliance with the SWQCCP; the owners of completed priority projects with post-construction BMPs installed have executed the appropriate maintenance agreements with the City. [**OL2**]

Since 2016-2017, all completed priority projects with post-construction BMPs in the City have executed maintenance agreements (**Figure 32**).

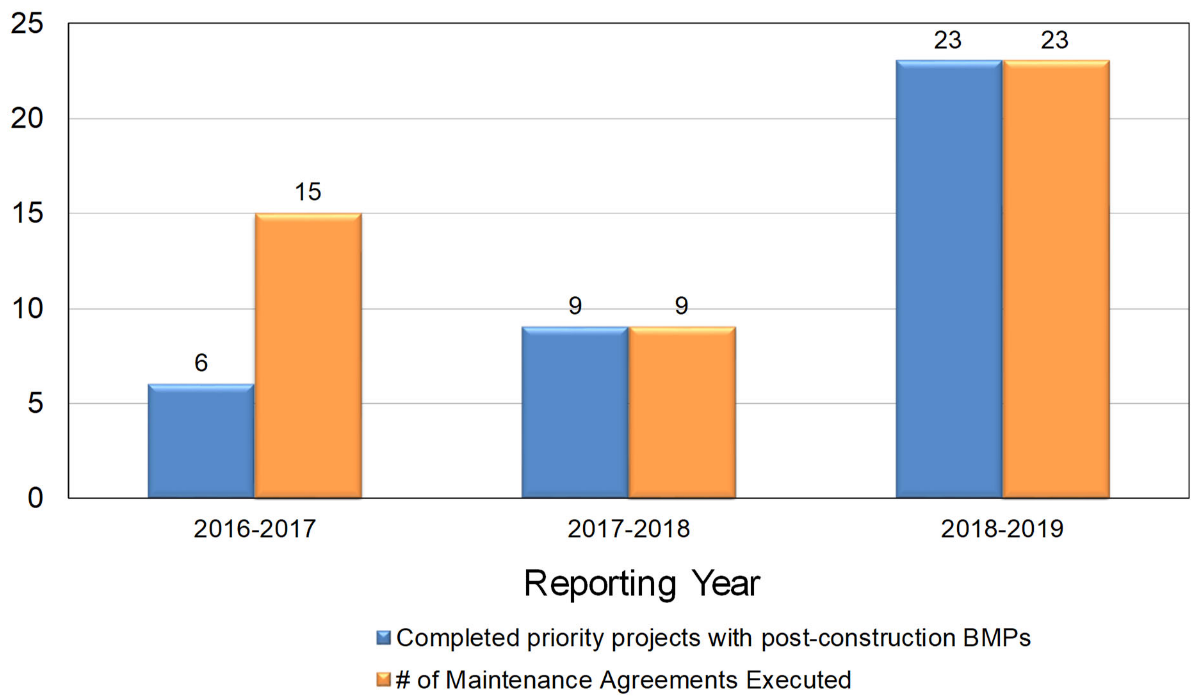


Figure 32. LD4 – Post-Construction BMPs (City)

6.2 COUNTY EFFECTIVENESS ASSESSMENT

6.2.1 Illicit Discharge Program Effectiveness Assessment

The effectiveness of the County's programmatic activities associated with the Illicit Discharge Program Control Measures is assessed below.

6.2.1.1 Detection of Illicit Discharges and Illegal Connections (ID1)

Public Reporting - The public is aware of the available reporting phone number and website and has provided notifications/complaints through these systems. [**OL2**]

The County received hotline calls regarding illicit discharges between 2014-2015 and 2018-2019 (**Figure 33**). The number of calls varied from year to year.

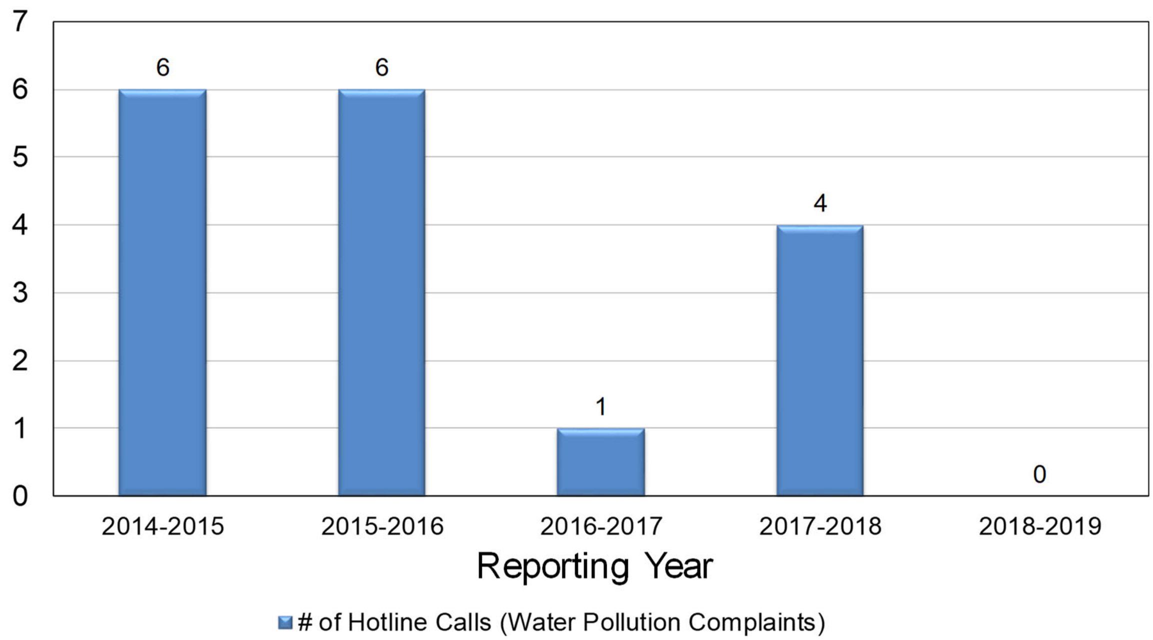


Figure 33. ID1 – Number of IDDE Complaints from Hotline (County)

Field Crew Inspections – With few exceptions, the awareness of field inspectors regarding what constitutes a problematic water pollution incident, based on the percent of potential illicit discharges identified and verified in the field, has been high in recent years. [**OL2**]

The percent of illicit discharges verified by County field crew inspections was 100% in 2015-2016 and has been high during the last two years (**Figure 34**).

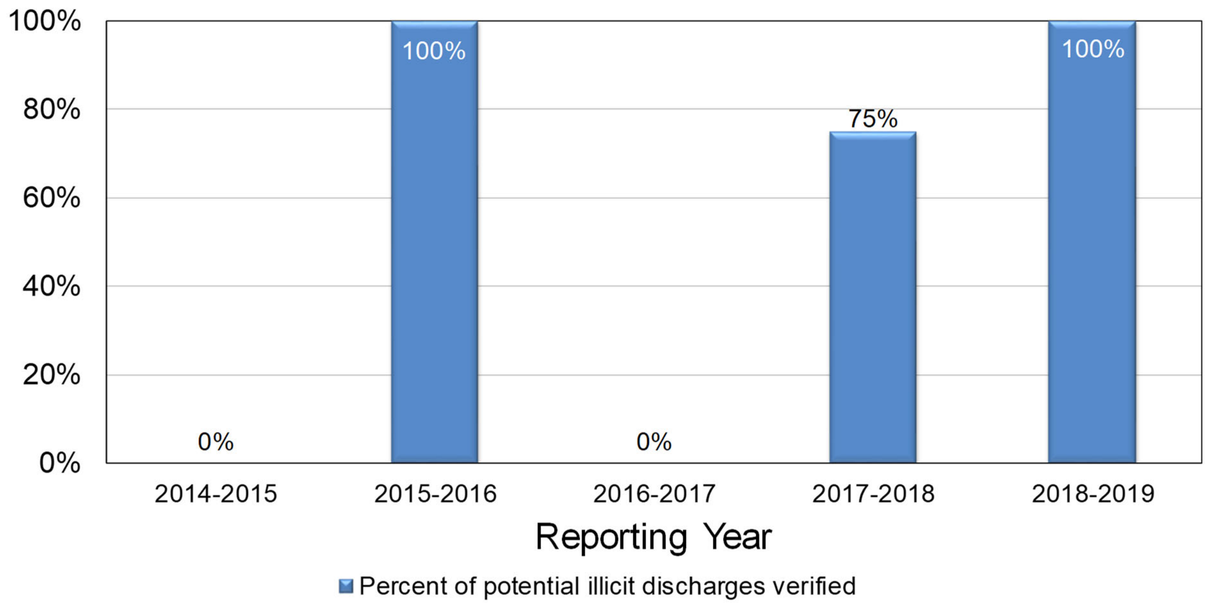


Figure 34. ID1 – Field Crew Inspections (Percent Verified) (County)

6.2.1.2 Investigation/Inspection and Follow Up (ID3)

Water Pollution Complaints – As field staff verify, characterize, and document illicit discharges, they are demonstrating awareness of the different types of materials involved, as indicated by the high percentage of illicit discharges identified using a specific waste category instead of Miscellaneous or Unidentified. [**OL2**]

The County began identifying the types of materials present in illicit discharges in 2017-2018, and thus far has identified specific waste types of each illicit discharge (**Figure 35**).

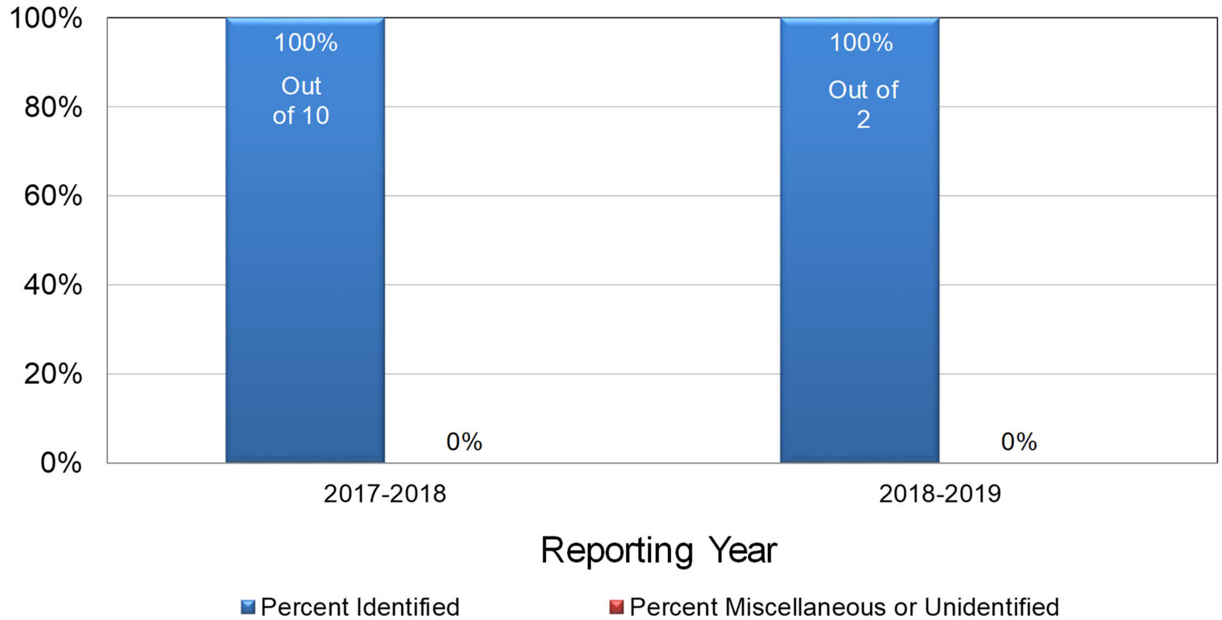


Figure 35. ID3 – Water Pollution Complaints: Percent Identified Materials (County)

6.2.2 Public Outreach Program Effectiveness Assessment

The effectiveness of the County's programmatic activities associated with the Public Outreach Program Control Measures is assessed below.

6.2.2.1 Public Participation (PO1)

Stream Cleanup Events – The public is aware of the education campaign and community events and is involved in the stormwater program. Materials are being removed from the local creeks and streams, thus reducing the amount of materials that may adversely impact the local waterways. [**OL2, OL4**]

The City and County organized an average of 875 volunteers per year at an average of 14 sites over the past five years, and removed 56 tons of trash/debris (**Figure 36** and **Figure 37**).

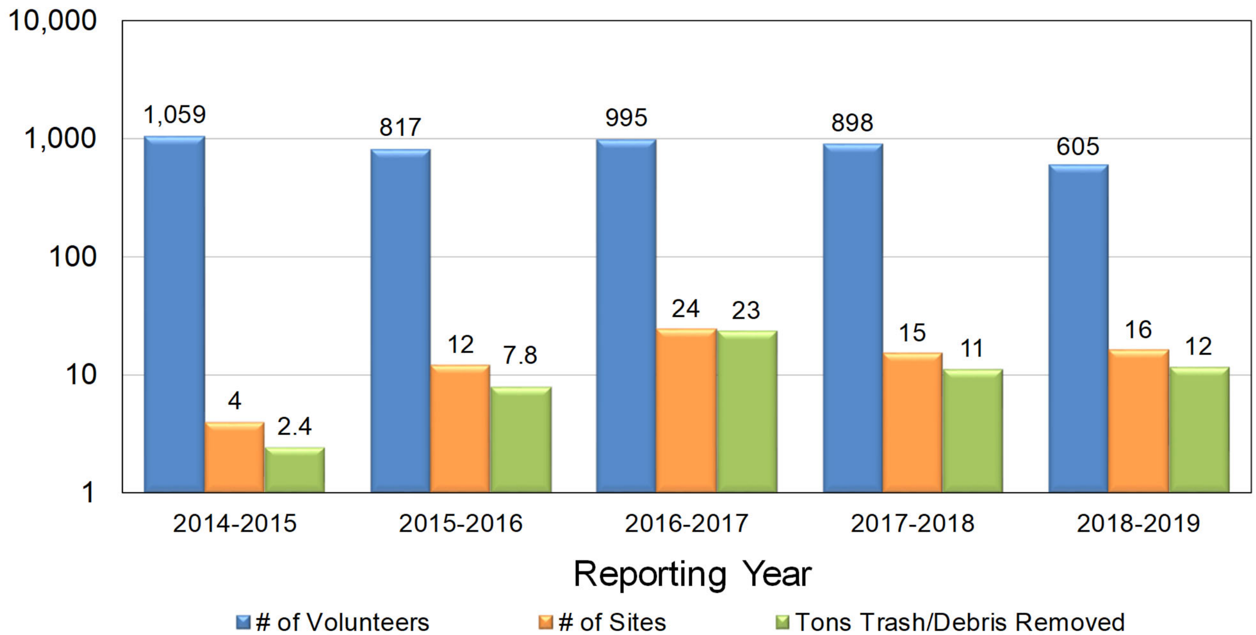


Figure 36. PO1 – Community Stream Clean Up Events

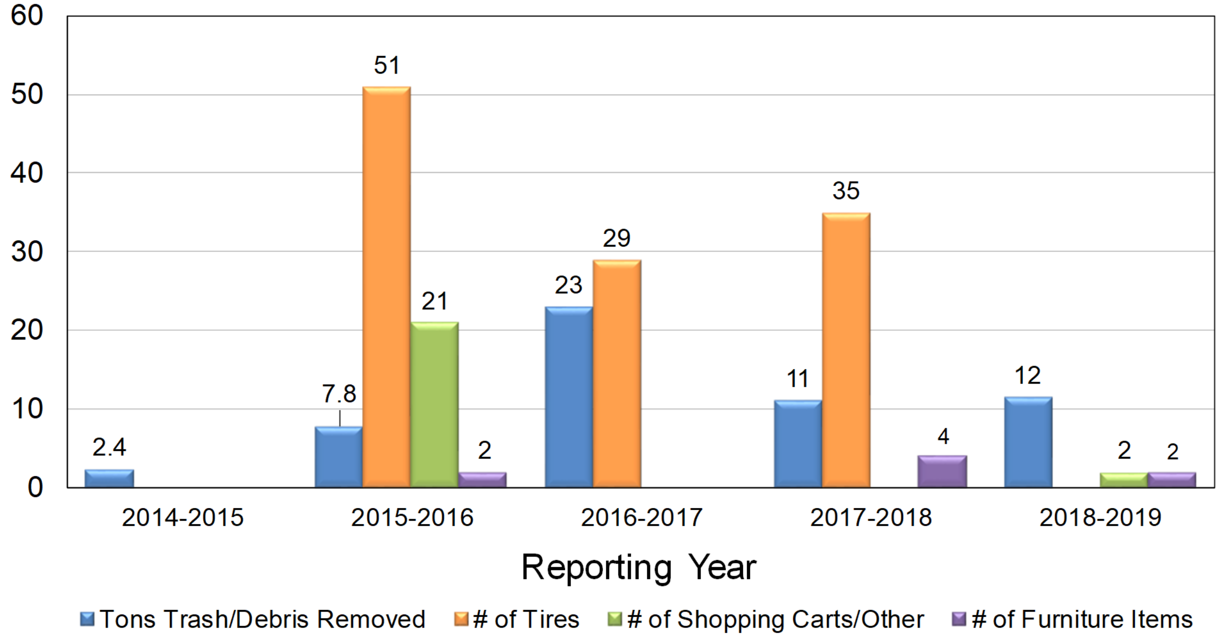


Figure 37. PO1 – Stream Clean Up Trash Removal

Used Oil and HHW Programs – The City and County have collected used oil and filters, mercury-containing products, and other household hazardous waste from their residents for proper disposal, increasing awareness and reducing the potential load of pollutants that could enter the storm drain system. Additionally, an increase in waste collected represents changing behaviors on the part of residents. [**OL2, OL3, OL4**]

Over the last five years, 1,744,518 gallons of used oil and 596,295 used oil filters (**Figure 38**) and 1,408 pounds of mercury (**Figure 39**) have been collected through the HHW Program. The amount of mercury collected annually has increased over the last five years.

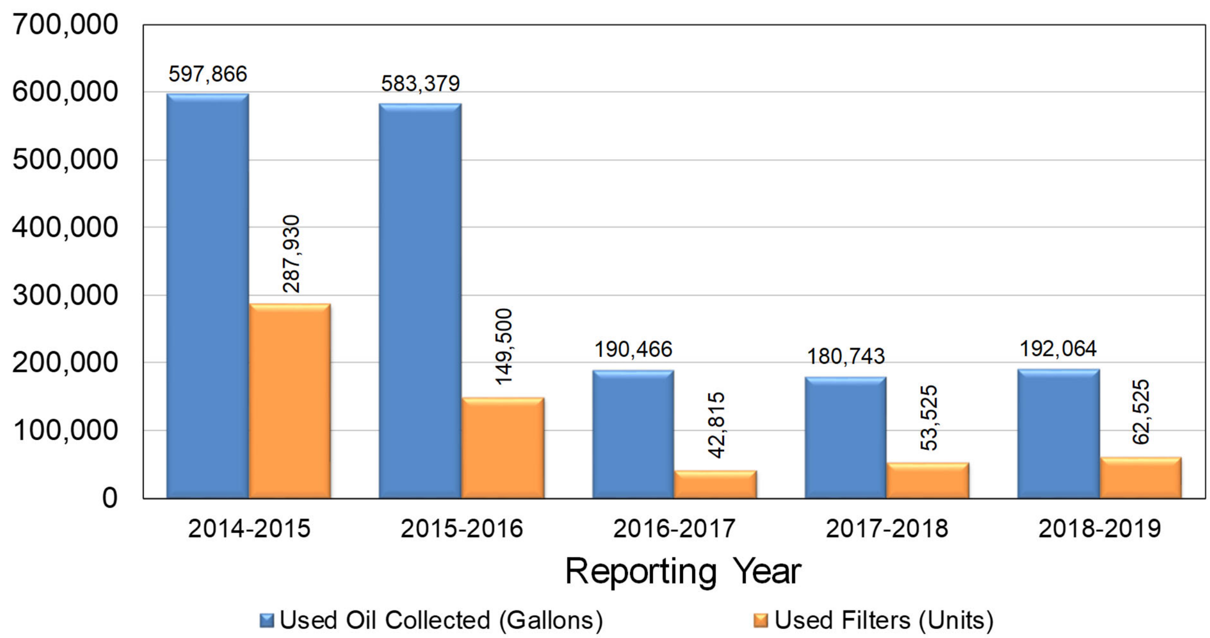


Figure 38. PO1 – HHW Used Oil & Filters Collected

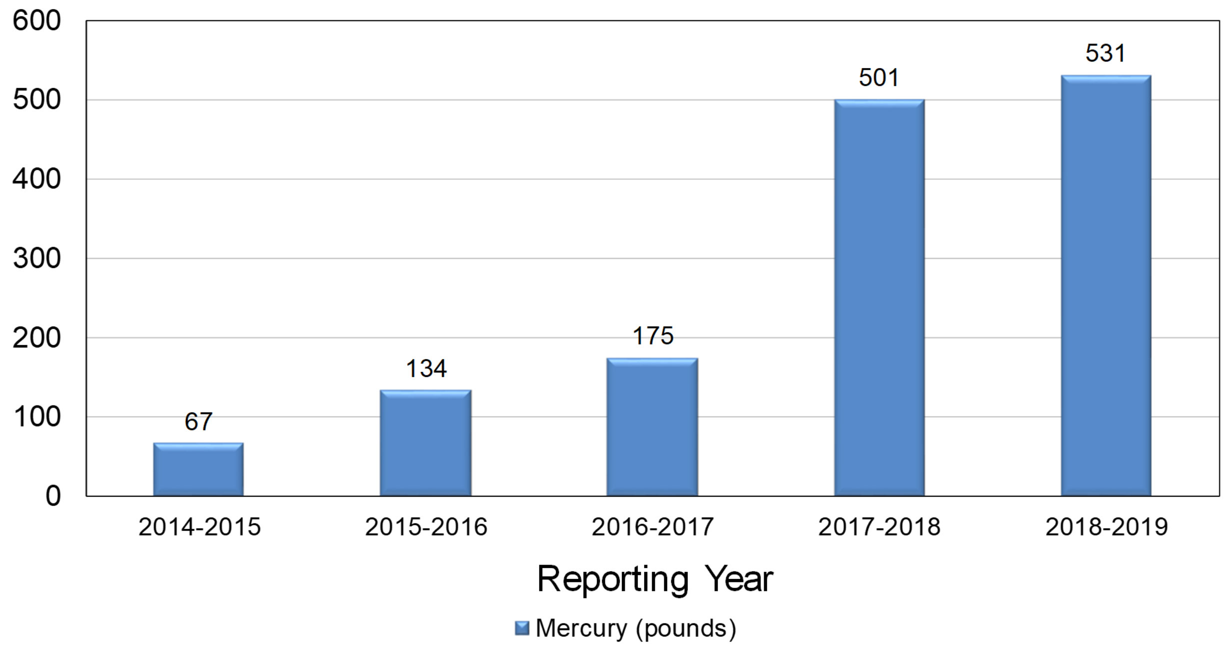


Figure 39. PO1 – HHW Mercury Collected

The City and County are raising awareness about HHW collection services and are increasing the amount of HHW that is being disposed of properly, thus reducing the potential load of pollutants that could enter the storm drain system. [**OL2, OL3, OL4**]

- Residents have properly disposed of HHW through the permanent collection facility. Since 2014-2015, these efforts have resulted in approximately 4,759,264 pounds of hazardous waste being collected and disposed of properly.
- On average, the amount of HHW properly disposed has increased by 114% between 2014-2015 and 2018-2019. This proper disposal of HHW ensures that potential impacts to the storm drain or receiving waters are prevented (**Figure 40**).

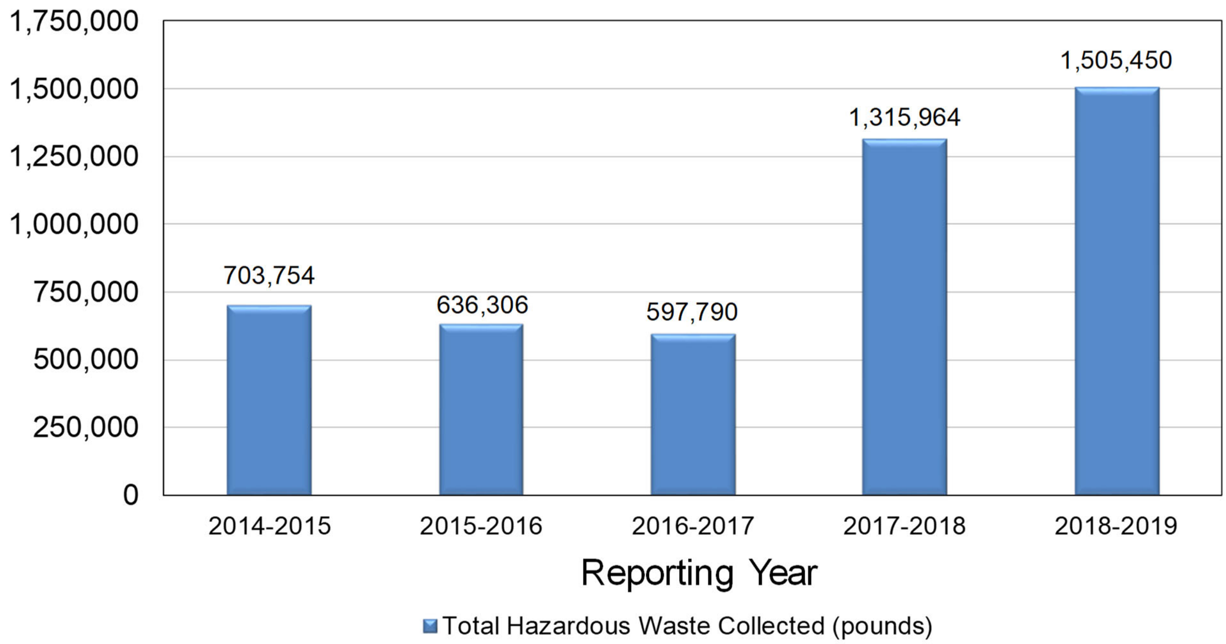


Figure 40. PO1 – Total HHW Collected

6.2.3 Municipal Operations Program Effectiveness Assessment

The effectiveness of the County's programmatic activities associated with the Municipal Operations Program Control Measures is assessed below.

6.2.3.1 Sanitary Sewer Maintenance & Overflow and Spill Response (MO1)

Implement SSO Emergency Response Plan – In general, a downward trend has been observed in the total annual number of SSOs and those reaching a storm drain or receiving waters, indicating that implementation of the SSOERP has been effective. [**OL4**]

Since 2014-2015, 25 SSOs have occurred and were responded to by the County. Of the 25 spills, three (3) reached the storm drain system, and none reached a receiving water. (**Figure 41**).

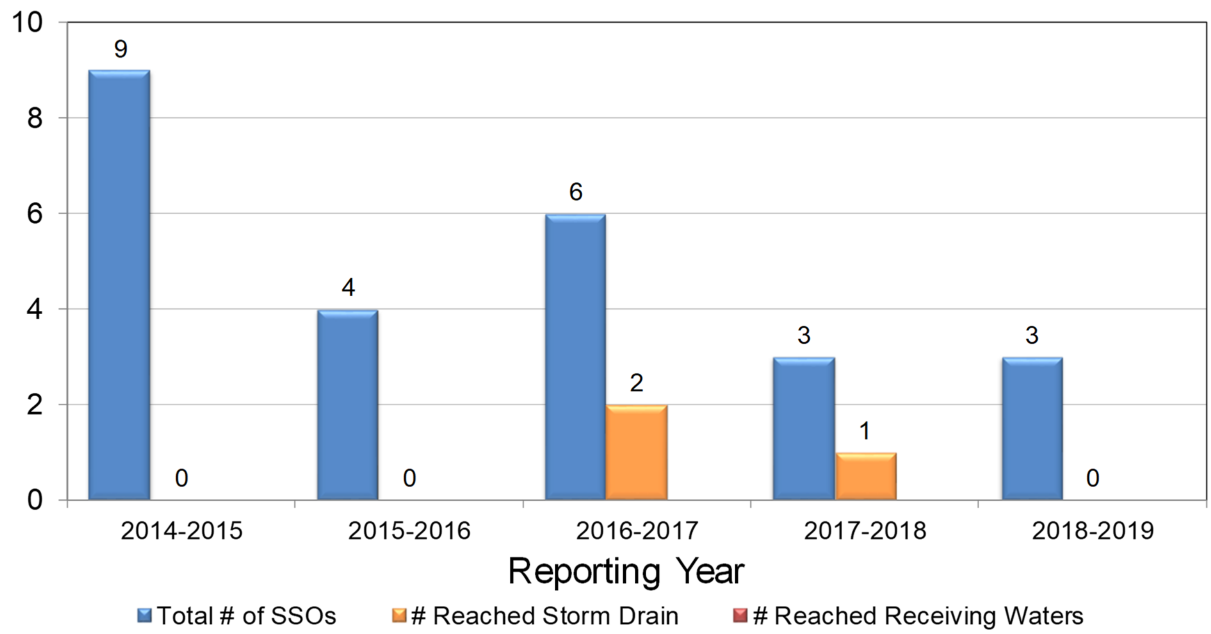


Figure 41. MO1 – Sanitary Sewer Overflows (County)

6.2.3.2 Landscape and Pest Management (MO4)

Fertilizer Application – The County has reduced the amount of fertilizer applied on municipally owned and/or operated areas, thus reducing the potential load of pollutants (i.e., oxygen-demanding substances) that could enter the storm drain system. [**OL2, OL3, OL4**]

The County's nitrogen fertilizer use decreased between 2014-2015 and 2015-2016 (**Figure 42**), as did the rate of fertilizer application per acre (**Figure 43**). The County has not applied fertilizer since 2015-2016.

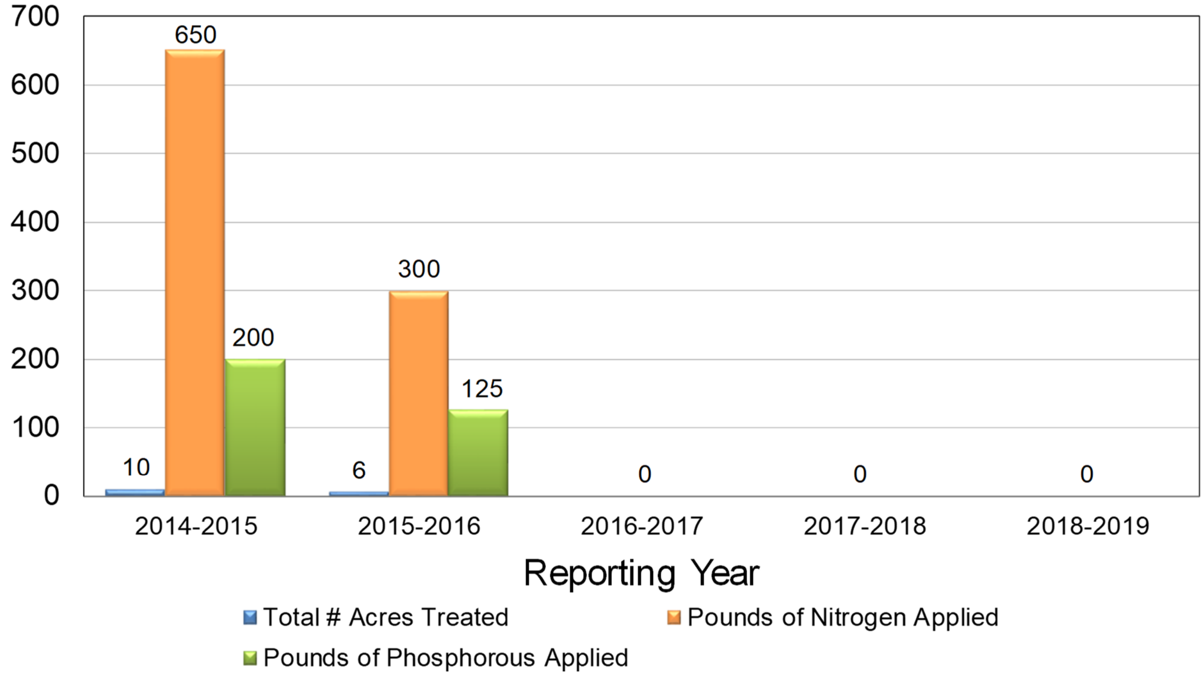


Figure 42. MO4 – Fertilizer Application (County)

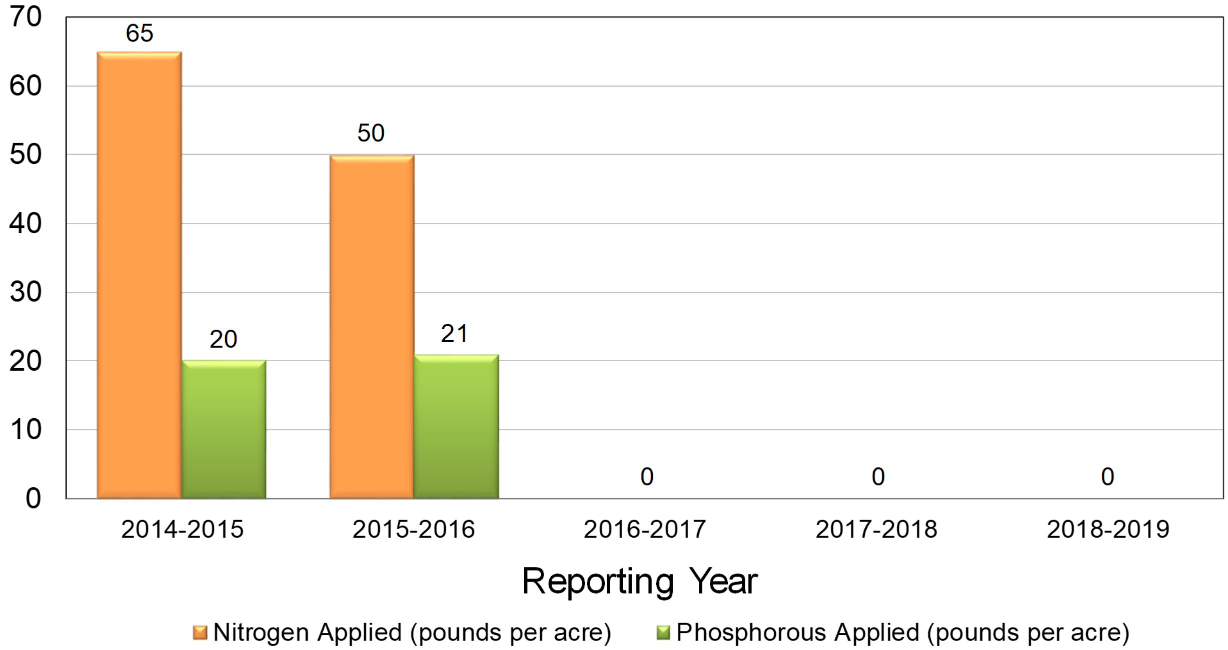
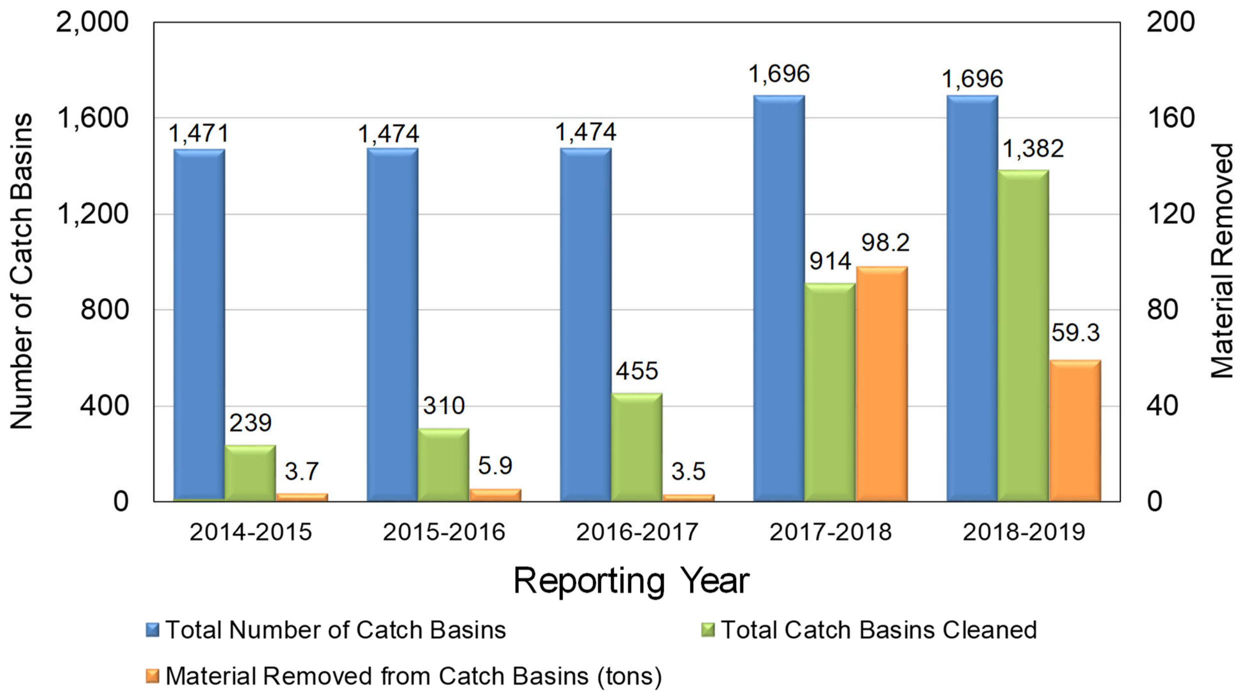


Figure 43. MO4 – Fertilizer Application per Acre (County)

6.2.3.3 Storm Drain System Maintenance (MO5)

Catch Basin Maintenance – The amount of material removed from catch basins shows that the County is diverting these pollutants from the storm drain system and receiving waters. [**OL4**]

The County removed 166 tons of material from catch basins between 2014-2015 and 2018-2019, an average of 33 tons per year (**Figure 44**).

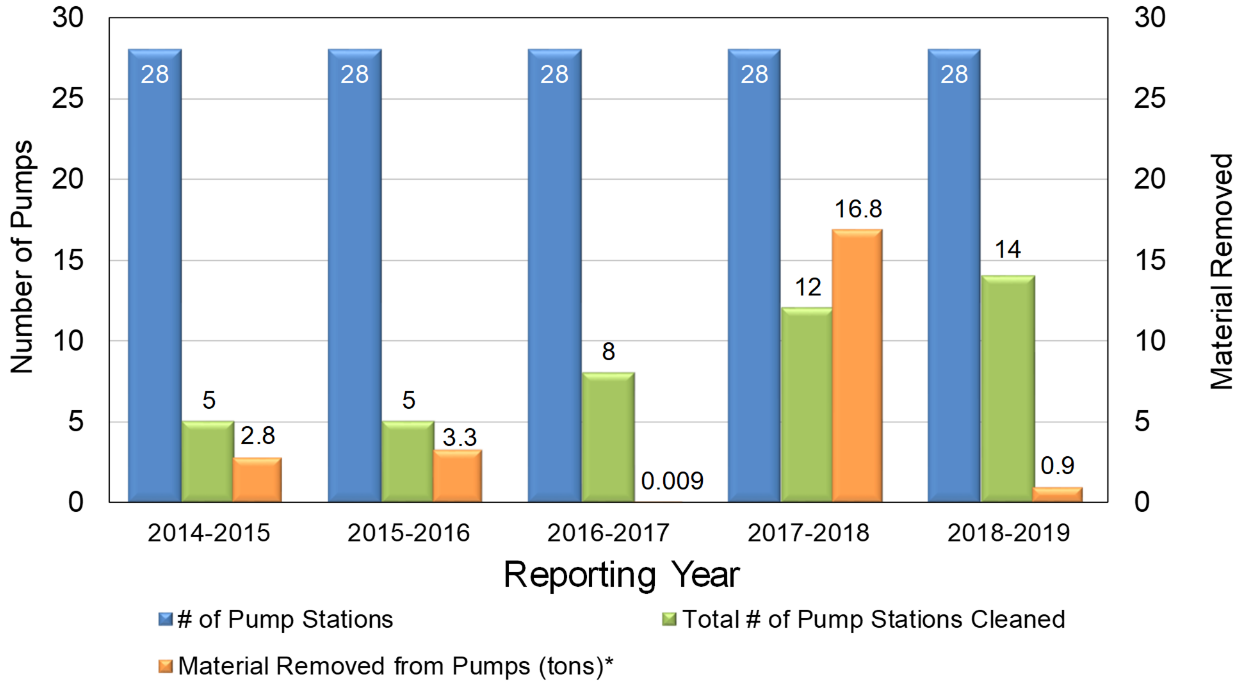


Note: The amount of material removed increased between 2016-2017 and 2017-2018 due to the use of a vactor truck, which had not been previously used due to budget constraints.

Figure 44. MO5 – Catch Basin Maintenance (County)

<u>Pump Station Maintenance</u> - The amount of material removed from pump stations shows that the County is diverting these pollutants from the storm drain system and receiving waters. [**OL4**]

The County removed 1,901 tons and 24 cubic yards of material from pump stations between 2014-2015 and 2018-2019 (**Figure 45**).



Note: The amount of material removed increased between 2016-2017 and 2017-2018 due to the use of a vactor truck, which had not been previously used due to budget constraints.

*Data were reported by the Utility Maintenance Division in cubic feet. The quantity in cubic feet was converted to tons using 27 cubic feet/cubic yard, 202 gallons/cubic yards, 2.5 pounds/gallon, and 2000 lbs/ton.

Figure 45. MO5 – Pump Station Maintenance (County)

6.2.3.4 Street Cleaning and Maintenance (MO6)

The amount of material removed through street sweeping activities shows that the County is diverting these pollutants from the storm drain system and receiving waters. [**OL4**]

The County has collected 8,069 tons of debris and 8,055 tons of green waste between 2014-2015 and 2018-2019 (**Figure 46**).

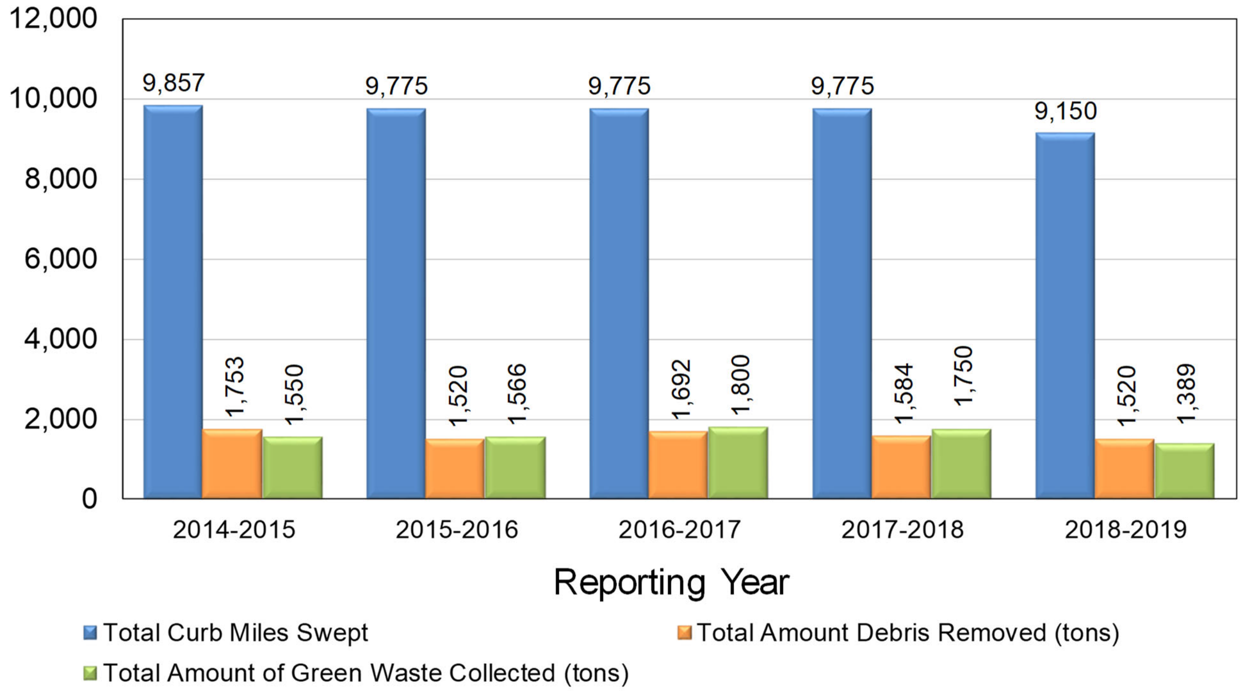


Figure 46. MO6 – Street Sweeping (County)

6.2.4 Industrial and Commercial Program Effectiveness Assessment

The effectiveness of the County's programmatic activities associated with the Industrial and Commercial Program Control Measures is assessed below.

6.2.4.1 Facility Inventory (IC1) and Prioritization and Inspection (IC2)

Industrial and Commercial Inspections – The County is proactively inspecting industrial and commercial facilities, providing outreach to increase awareness of the BMPs that should be implemented to protect stormwater quality, and determining whether these facilities are adequately implementing BMPs. The percent of industrial and commercial facilities adequately implementing BMPs has remained high over time. [**OL2, OL3**]

The County inspects its high priority industrial facilities once every two years (**Figure 47**).

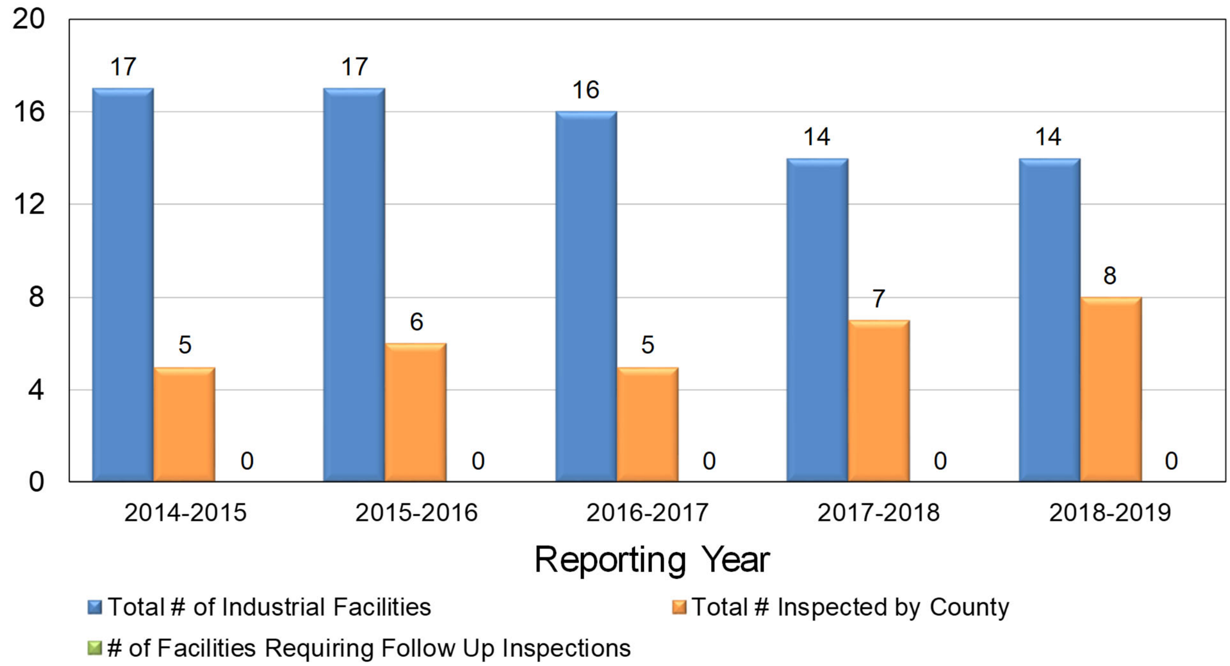


Figure 47. IC1 & IC2 – Industrial Facilities and Inspections (County)

All inspected industrial facilities were found to have SWPPPs onsite, to have adequate BMPs, and to be in general compliance (**Figure 48**).

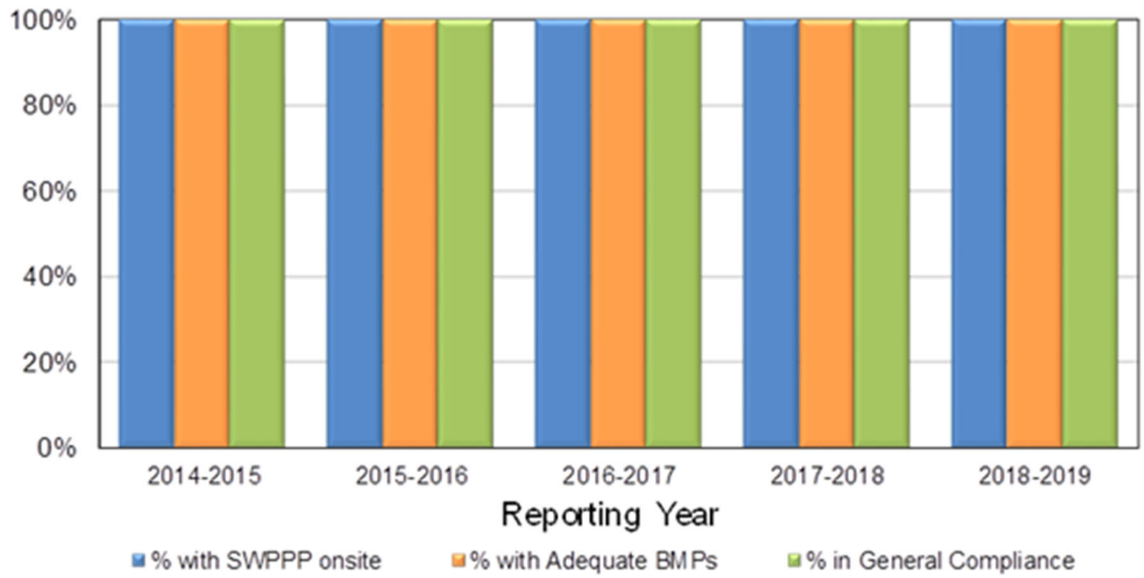


Figure 48. IC2 – Industrial Facility Inspection Results (County)

The County inspects an average of 25 high priority commercial facilities per year, in order to inspect all facilities once per permit term (**Figure 49**).

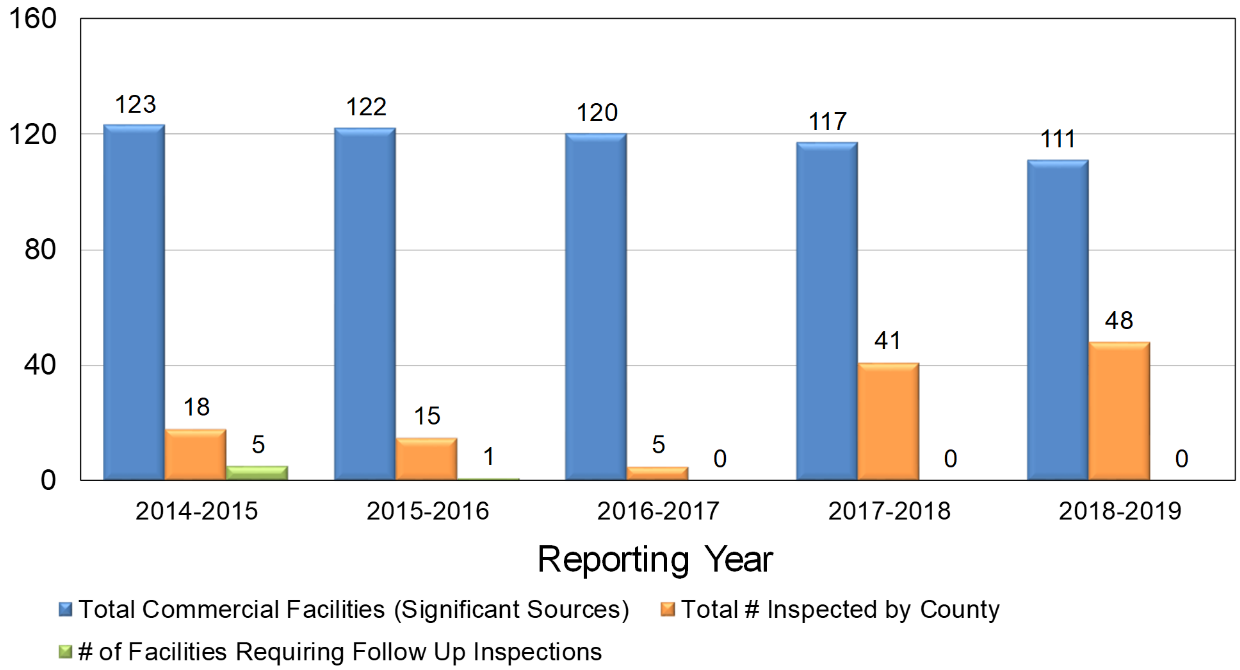


Figure 49. IC1 & IC2 – Commercial Facilities and Inspections (County)

The percent of commercial facilities with adequate BMPs and in general compliance increased in 2015-2016 and has remained at 100% since 2016-2017 (**Figure 50**).

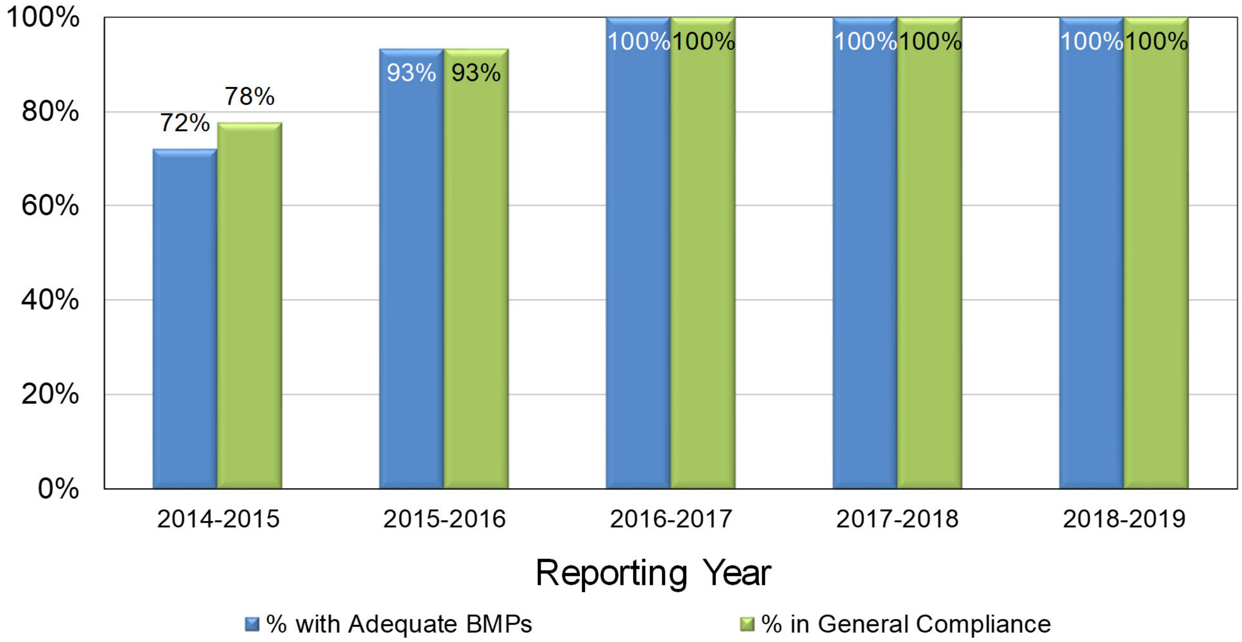


Figure 50. IC2 – Commercial Facility Inspection Results (County)

6.2.5 Construction Program Effectiveness Assessment

The effectiveness of the County's programmatic activities associated with the Construction Program Control Measures is assessed below.

6.2.5.1 Construction Site Inspections & BMP Implementation (CO5)

The County continues to work to educate construction site owners and operators as needed so that they are aware of the BMPs that are required to be implemented and maintained. [**OL2**]

The County had two construction sites greater than one acre in 2014-2015 and one in 2015-2016. Four follow-up inspections were conducted in 2014-2015 and none in 2015-2016. There have been no construction sites greater than one acre between 2016-2017 and 2018-2019.

6.2.5.2 Training (CO7)

The pre- and post-training surveys conducted after Construction Program training activities indicate that staff have been effectively trained and demonstrated increased understanding of the concepts presented. [**OL3**]

The County conducted a pre- and post-training survey during a staff training held in 2018-2019. Fourteen participants achieved an average of 57% correct on the pre-training survey, and 79% correct on the post-training survey, a 24% increase in understanding (**Figure 51**).

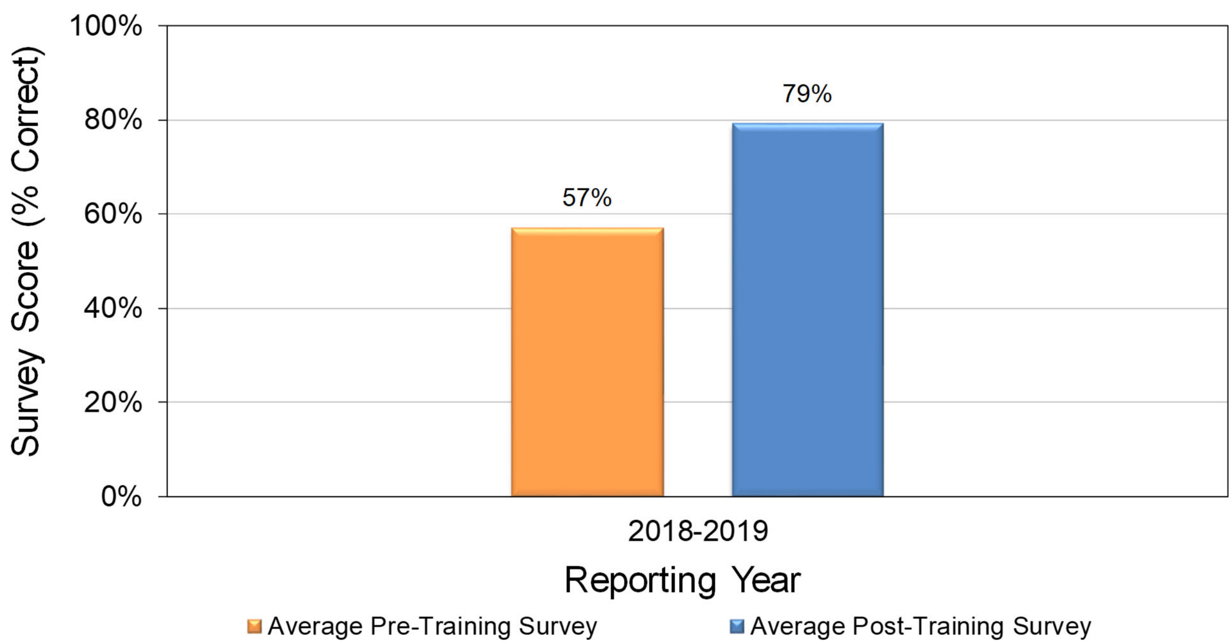


Figure 51. CO7 – Pre- and Post-Training Survey Results (CO7)

6.2.6 Planning and Land Development Program Effectiveness Assessment

The effectiveness of the County's programmatic activities associated with the Planning and Land Development Program Control Measures is assessed below.

6.2.6.1 Maintenance Agreement and Transfer (LD4)

The County programs have been requiring compliance with the SWQCCP; the owners of completed priority projects with post-construction BMPs installed have executed the appropriate maintenance agreements with the County. [**OL2**]

Since 2016-2017, all completed priority projects with post-construction BMPs in the County have executed maintenance agreements (**Figure 52**).

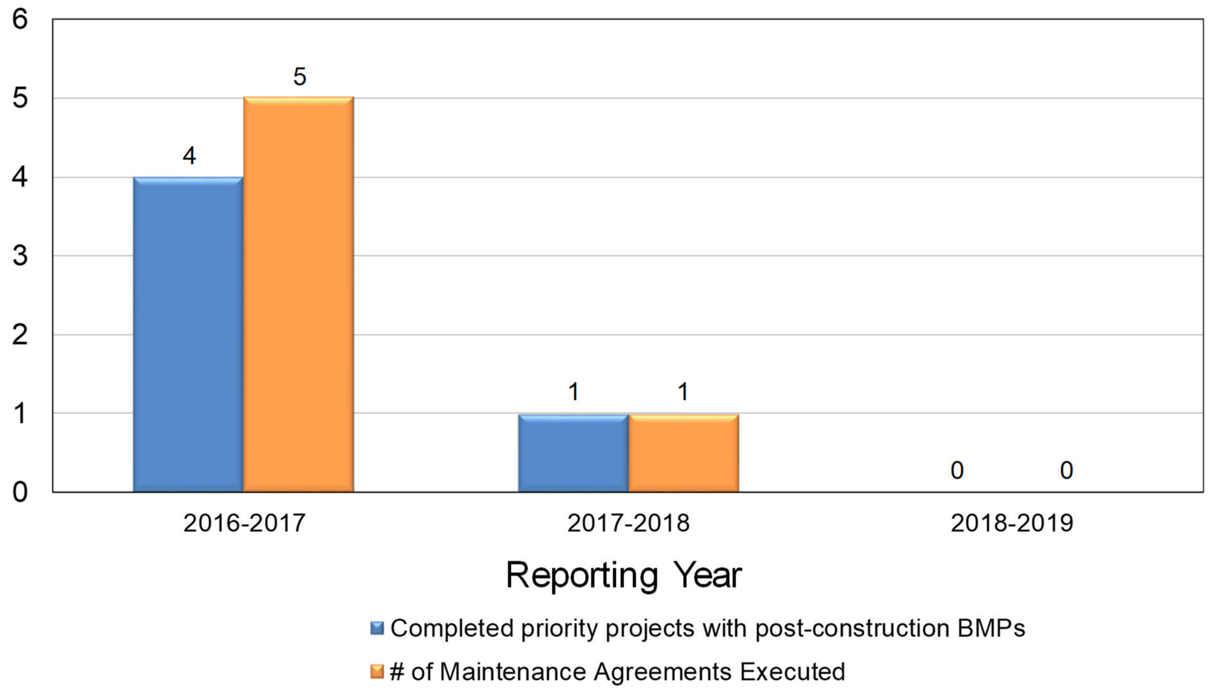


Figure 52. LD4 – Post-Construction BMPs (County)

This page intentionally left blank for printing purposes

7 Proposed SWMP Modifications

As a part of the annual reporting process, the City and the County have qualitatively evaluated the effectiveness of the stormwater program during the Permit term, as well as the experience that staff has had in implementing the program, to identify potential modifications.

Modifications to the monitoring approach have been identified, as follows:

- **Removal of Mormon Slough:** The previously approved monitoring approach included Mormon Slough, along with five other water bodies. It is proposed that Mormon Slough be removed from the monitoring program for the following reasons:
    - Mormon Slough has a small drainageshed, and stretches of Mormon Slough remain dry for days to months at a time during the winter and early spring. Overall, the slough is very shallow. As such, it is not a representative urban waterbody.
    - Mormon Slough has a substantial homeless population, which presents a safety risk for monitoring staff.
    - Mormon Slough has a mixed-use watershed with residential, commercial, and industrial land uses. The land uses and associated stormwater inputs are similar to Duck Creek and are captured by the inclusion of Duck Creek in the monitoring program.
- **Pyrethroids Basin Plan Amendment Monitoring at Five-Mile Slough:** The Central Valley Pyrethroids Basin Plan Amendment (BPA) became effective February 19, 2019. The BPA established a Pyrethroids Control Program, including a conditional prohibition of discharge. The conditional prohibition applies to SUA waterbodies. The BPA includes monitoring requirements for waterbodies subject to the conditional prohibition, and additional pyrethroid monitoring will be included in the monitoring program to comply with these requirements. Two types of monitoring are required: baseline and trend.
    - Baseline Monitoring: One year of representative Baseline Monitoring is required to be completed by October 19, 2021. This Baseline Monitoring will be conducted at Five-Mile Slough during 2020-2021 monitoring.
    - Trend Monitoring: Trend monitoring is intended to be conducted once every five years and will be conducted when Five-Mile Slough is next monitored (anticipated for 2027-2028).

In addition, the City and the County previously identified key program modifications in the June 2012 ROWD. These modifications will be incorporated into the revised SWMP and corresponding Work Plan prior to the submittal to the Regional Water Board (anticipated in 2020).

This page intentionally left blank for printing purposes

Appendix A
Work Plan as submitted November 1, 2016

This page intentionally left blank for printing purposes

City of Stockton and County of San Joaquin SWMP Annual Work Plan

ID	Task Name	Q3	Q4	Q1	Q2
1	**Section 1 - Program Management**				
2	**Program Coordination**				
3	Review/revise SWMP as needed				
4	Co-permittees meet quarterly				
5	Participate in internal quarterly Stormwater Program Meetings				
6	Participate in statewide stormwater-related meetings, conferences, and stakeholder groups as needed				
7	Review/revise MOUs as necessary				
8	Establish, review, and revise cooperative agreements as needed				
9	**Fiscal Analysis**				
10	Review and revise the Fiscal Analysis reporting format as needed				
11	**Legal Authority**				
12	Review the legal authority as needed				

City of Stockton and County of San Joaquin SWMP Annual Work Plan

ID	Task Name	Q3	Q4	Q1	Q2
13	**Section 2 - Illicit Discharges Program Element (ID)**				
14	**ID1 - Detection of Illicit Discharges and Illegal Connections**				
15	Public Reporting				
16	Maintain and advertise Hotline				
17	Coordinate with other agencies and departments				
18	Field Crew Inspections				
19	Continue field observations for IDIC				
20	**ID2 - Illegal Connection Identification and Elimination**				
21	Investigate and eliminate illegal connections				
22	Coordinate with Planning and Land Development program				
23	Coordinate with Construction program				
24	**ID3 - Investigation/Inspection and Follow Up**				
25	Respond to illicit discharges				
26	Maintain contractual services for incident clean-up				
27	Maintain Illicit Discharges Database				
28	**ID4 - Enforcement**				
29	Implement progressive enforcement policy and procedures				
30	Track enforcement actions in Illicit Discharges Database				
31	**ID5 - Training**				
32	Conduct training				

ID	Task Name	Q3	Q4	Q1	Q2
33	**Section 3 - Public Outreach (PO)**				
34	**PO1 - Public Participation**				
35	Implement Storm Drain Marker Program				
36	Organize, support, and/or participate in stream cleanup events				
37	Promote Used Oil and Household Hazardous Waste Programs				
38	Coordinate with Household Hazardous Waste program for pesticide disposal				
39	**PO2 - Hotline**				
40	Maintain 24-hr hotline number				
41	Promote/publicize the 24-hr hotline				
42	**PO3 - Public Outreach Implementation**				
43	Update Website as needed				
44	Implement pet waste outreach program				
45	Track installation of pet waste bag dispensing stations				
46	Participate in community-wide events throughout the year				
47	Conduct mixed media campaigns				
48	Provide community relations				
49	Implement pesticide outreach efforts for staff, residents, retail stores, and PCOs				
50	**PO4 - Public School Education**				
51	Continue to identify opportunities to reach out to school age children				

ID	Task Name	Q3	Q4	Q1	Q2
52	Section 4 - Municipal Operations (MO)				
53	**MO1 - Sanitary Sewer Maintenance & Overflow and Spill Response**				
54	Implement the Sanitary Sewer Overflow Emergency Response Plan (SSOERP)				
55	Review the SSOERP and revise as changes occur				
56	**MO2 - Construction Requirements for Municipal Capital Improvement Projects**				
57	Review CIP designs to ensure specifications and notes are included				
58	Require submission of NOI for CIPs greater than or equal to one acre				
59	If a priority project, develop in conformance with the SWQCCP				
60	Improve interdepartamental communication to facilitate accurate recordkeeping and reporting of data				
61	**MO3 - Pollution Prevention at City Facilities**				
62	Assess facilities to determine if they require coverage under the General Industrial Permit				
63	Implement SWPPP/FPPP for Corporation Yard and other facilities as needed				
64	Review CIP projects for compliance with general stormwater requirements, including review for vehicle or equipment wash areas				
65	**MO4 - Landscape and Pest Management**				
66	Implement pesticide and fertilizer application protocol at park sites, landscaped medians, and golf courses				
67	Implement IPM program				
68	Maintain and expand internal inventory on pesticide use and track Parks Division reported pesticide use				
69	Implement Landscaping Standards				
70	**MO5 - Storm Drain System Maintenance**				
71	Implement storm drain system mapping				
72	Review/revise prioritization for catch basin cleaning as needed				
73	Maintain and annually update Catch Basin Database				
74	Implement catch basin maintenance program				
75	Implement pump station maintenance program				
76	Implement detention basin maintenance program				
77	Implement notification procedures for ID/IC and missing catch basin markers or illegible stencils				
78	Require large events and venues to address trash and debris removal, including containerization and street sweeping as appropriate				

ID	Task Name	Q3	Q4	Q1	Q2
79	**MO6 - Street Cleaning and Maintenance**				
80	Implement street sweeping program				
81	Review/revise prioritization of streets for street sweeping program as needed				
82	Implement green waste collection program				
83	Implement Maintenance Staff Guide -- Road Maintenance and Small Construction BMPs				
84	**MO7 - Training**				
85	Conduct training				
86	**Section 5 - Industrial and Commercial Program Element (IC)**				
87	**IC1 - Facility Inventory**				
88	Internal audit of database				
89	Maintain and annually update the inventory and database				
90	Map the industrial and commercial facilities on an annual basis				
91	Implement and track a self-certification program for carpet cleaners				
92	**IC2 - Prioritization and Inspection**				
93	Prioritization				
94	Prioritize facilities as necessary				
95	Inspections				
96	Review/revise industrial inspection checklists as needed				
97	Conduct inspections				
98	Conduct follow-up inspections as needed				
99	**IC3 - BMP Implementation**				
100	Review/revise BMP fact sheets for high priority facilities as needed				
101	Distribute BMP Fact Sheets				
102	Implement outreach efforts to carpet cleaners				
103	**IC4 - Enforcement**				
104	Implement progressive enforcement and referral policy and procedures				
105	Track enforcement actions in the industrial/commercial database				
106	Implement procedures for Regional Water Board based complaints				
107	Review and Revise Industrial General Permit referral policy as needed				
108	**IC5 - Training**				
109	Conduct training				

ID	Task Name	Q3	Q4	Q1	Q2
110	**Section 6 - Construction (CO)**				
111	**CO1 - Municipal Code for Construction Sites**				
112	**CO2 - Plan Review and Approval Process**				
113	Review grading and building permit applications for SWPPP requirements				
	Review erosion control plans				
114	Distribute the Plan & Permit Application Review Procedure handout				
115	**CO3 - Construction Projects Inventory**				
116	Maintain and update the Construction Project Database				
117	**CO4 - Construction Outreach**				
118	Distribute appropriate BMP fact sheets during inspections				
119	**CO5 - Construction Site Inspections & BMP Implementation**				
120	Inspect construction sites >=1 acre monthly				
121	**CO6 - Enforcement**				
122	Implement progressive enforcement policy				
123	Track enforcement actions using the construction database				
124	**CO7 - Training**				
125	Conduct training				

ID	Task Name	Q3	Q4	Q1	Q2
126	Section 7 - Planning and Land Development (LD)				
127	**LD1 - Incorporation of Water Quality Protection Principles into City Procedures and Policies**				
128	Revise General Plan as needed				
129	**LD2 - New Development Standards**				
130	Require priority projects to comply with the revised SWQCCP				
131	**LD3 - Plan Review Sign-off**				
132	Revise Post-Construction Plan Review Database as needed				
133	Use Post-Construction Plan Review Database				
134	Review project plans and grading plans for stormwater BMPs				
135	Track projects with post-construction treatment control BMPs				
136	Conduct inspections of completed priority projects to ensure that all approved control measures have been implemented and are being maintained				
137	**LD4 - Maintenance Agreement and Transfer**				
138	Require Stormwater Treatment Device Access and Maintenance Agreement				
139	Implement Post-Construction BMP Maintenance Oversight Protocols				
140	**LD5 - Training**				
141	Conduct training				
142	Section 8 - Monitoring and Reporting Program				
143	**Water Quality Monitoring (waterbody varies annually)**				
144	Water quality parameters as needed				
145	Sediment toxicity and sediment chemistry as needed				
146	Water column toxicity as needed				
147	**Delta Regional Monitoring Program**				
148	Section 9 - Program Implementation, Evaluation, and Reporting				
149	**Program Implementation**				
150	Update Work Plan as needed				
151	**Annual Report**				

This page intentionally left blank for printing purposes

Appendix B
2018-2019 Monitoring Results

This page intentionally left blank for printing purposes

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW35	SC-1	9/24/18	E. Coli	SM 9223B	<	10		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW35	SC-1R	9/24/18	E. Coli	SM 9223B	<	10		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW35	SC-55	9/24/18	E. Coli	SM 9223B	=	20		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW35	SC-55R	9/24/18	E. Coli	SM 9223B	=	20		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW35	SC-56	9/24/18	E. Coli	SM 9223B	=	52		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW35	SC-56R	9/24/18	E. Coli	SM 9223B	=	73		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW36	SC-1	1/30/19	E. Coli	SM 9223B	>	24196		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW36	SC-1R	1/30/19	E. Coli	SM 9223B	=	717		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW36	SC-55	1/30/19	E. Coli	SM 9223B	=	10		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW36	SC-55R	1/30/19	E. Coli	SM 9223B	=	52		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW36	SC-56	1/30/19	E. Coli	SM 9223B	=	10		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW36	SC-56R	1/30/19	E. Coli	SM 9223B	=	74		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW37	SC-1	3/18/19	E. Coli	SM 9223B	=	107.1		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW37	SC-1R	3/18/19	E. Coli	SM 9223B	=	4.1		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW37	SC-55	3/18/19	E. Coli	SM 9223B	<	1		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW37	SC-55R	3/18/19	E. Coli	SM 9223B	=	5.2		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW37	SC-56	3/18/19	E. Coli	SM 9223B	=	1		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW37	SC-56R	3/18/19	E. Coli	SM 9223B	=	4.1		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW38	SC-1	6/19/19	E. Coli	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
DW38	SC-1R	6/19/19	E. Coli	SM 9223B	=	2		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
DW38	SC-55	6/19/19	E. Coli	SM 9223B	=	8.6		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
DW38	SC-55R	6/19/19	E. Coli	SM 9223B	=	26.2		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
DW38	SC-56	6/19/19	E. Coli	SM 9223B	=	16.8		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
DW38	SC-56R	6/19/19	E. Coli	SM 9223B	=	35.5		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
SE68	SC-1	11/29/18	E. Coli	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE68	SC-1R	11/29/18	E. Coli	SM 9223B	=	488.4		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE68	SC-55	11/29/18	E. Coli	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE68	SC-55R	11/29/18	E. Coli	SM 9223B	=	1553.1		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE68	SC-56	11/29/18	E. Coli	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE68	SC-56R	11/29/18	E. Coli	SM 9223B	=	39.5		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE69	SC-1	12/16/18	E. Coli	SM 9223B	=	6488		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE69	SC-1R	12/16/18	E. Coli	SM 9223B	=	3255		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE69	SC-55	12/16/18	E. Coli	SM 9223B	=	9208		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE69	SC-55R	12/16/18	E. Coli	SM 9223B	=	1187		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE69	SC-56	12/16/18	E. Coli	SM 9223B	=	8164		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE69	SC-56R	12/16/18	E. Coli	SM 9223B	=	857		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE70	SC-1	5/15/19	E. Coli	SM 9223B	>	2420		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
SE70	SC-1R	5/15/19	E. Coli	SM 9223B	=	490		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE70	SC-55	5/15/19	E. Coli	SM 9223B	>	2420		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
SE70	SC-55R	5/15/19	E. Coli	SM 9223B	>	2420		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
SE70	SC-56	5/15/19	E. Coli	SM 9223B	>	2420		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
SE70	SC-56R	5/15/19	E. Coli	SM 9223B	=	160		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
DW35	SC-1	9/24/18	Fecal Coliform	SM 9221B	<	18		18	MPN/100ml	U	FGL Env.	9/24/18	9/28/18
DW35	SC-1R	9/24/18	Fecal Coliform	SM 9221B	=	170		18	MPN/100ml		FGL Env.	9/24/18	9/28/18
DW35	SC-55	9/24/18	Fecal Coliform	SM 9221B	=	490		18	MPN/100ml		FGL Env.	9/24/18	9/28/18
DW35	SC-55R	9/24/18	Fecal Coliform	SM 9221B	=	130		18	MPN/100ml		FGL Env.	9/24/18	9/28/18
DW35	SC-56	9/24/18	Fecal Coliform	SM 9221B	=	330		18	MPN/100ml		FGL Env.	9/24/18	9/26/18
DW35	SC-56R	9/24/18	Fecal Coliform	SM 9221B	=	68		18	MPN/100ml		FGL Env.	9/24/18	9/27/18
DW36	SC-1	1/30/19	Fecal Coliform	SM 9221B	=	790000		18000	MPN/100ml		FGL Env.	1/30/19	2/1/19
DW36	SC-1R	1/30/19	Fecal Coliform	SM 9221B	=	1700		18	MPN/100ml		FGL Env.	1/30/19	2/2/19
DW36	SC-55	1/30/19	Fecal Coliform	SM 9221B	=	45		18	MPN/100ml		FGL Env.	1/30/19	2/2/19
DW36	SC-55R	1/30/19	Fecal Coliform	SM 9221B	=	110		18	MPN/100ml		FGL Env.	1/30/19	2/3/19
DW36	SC-56	1/30/19	Fecal Coliform	SM 9221B	=	40		18	MPN/100ml		FGL Env.	1/30/19	2/2/19
DW36	SC-56R	1/30/19	Fecal Coliform	SM 9221B	=	20		18	MPN/100ml		FGL Env.	1/30/19	2/2/19
DW37	SC-1	3/18/19	Fecal Coliform	SM 9221B	=	1200		18	MPN/100ml		FGL Env.	3/18/19	3/22/19
DW37	SC-1R	3/18/19	Fecal Coliform	SM 9221B	=	110		18	MPN/100ml		FGL Env.	3/18/19	3/22/19
DW37	SC-55	3/18/19	Fecal Coliform	SM 9221B	<	18		18	MPN/100ml	U	FGL Env.	3/18/19	3/21/19
DW37	SC-55R	3/18/19	Fecal Coliform	SM 9221B	=	45		18	MPN/100ml		FGL Env.	3/18/19	3/21/19
DW37	SC-56	3/18/19	Fecal Coliform	SM 9221B	=	68		18	MPN/100ml		FGL Env.	3/18/19	3/21/19
DW37	SC-56R	3/18/19	Fecal Coliform	SM 9221B	=	230		18	MPN/100ml		FGL Env.	3/18/19	3/21/19
DW38	SC-1	6/19/19	Fecal Coliform	SM 9221B	=	79000		1800	MPN/100ml		FGL Env.	6/19/19	6/22/19
DW38	SC-1R	6/19/19	Fecal Coliform	SM 9221B	=	78		18	MPN/100ml		FGL Env.	6/19/19	6/22/19
DW38	SC-55	6/19/19	Fecal Coliform	SM 9221B	=	78		18	MPN/100ml	U	FGL Env.	6/19/19	6/22/19
DW38	SC-55R	6/19/19	Fecal Coliform	SM 9221B	=	330		18	MPN/100ml		FGL Env.	6/19/19	6/22/19
DW38	SC-56	6/19/19	Fecal Coliform	SM 9221B	=	22000		180	MPN/100ml		FGL Env.	6/19/19	6/22/19
DW38	SC-56R	6/19/19	Fecal Coliform	SM 9221B	=	230		18	MPN/100ml		FGL Env.	6/19/19	6/22/19
SE68	SC-1	11/29/18	Fecal Coliform	SM 9221B	=	230000		18000	MPN/100ml		FGL Env.	11/29/18	12/3/18
SE68	SC-1R	11/29/18	Fecal Coliform	SM 9221B	=	130000		1800	MPN/100ml		FGL Env.	11/29/18	12/3/18
SE68	SC-55	11/29/18	Fecal Coliform	SM 9221B	=	79000		1800	MPN/100ml		FGL Env.	11/29/18	12/2/18
SE68	SC-55R	11/29/18	Fecal Coliform	SM 9221B	=	230000		18000	MPN/100ml		FGL Env.	11/29/18	12/2/18
SE68	SC-56	11/29/18	Fecal Coliform	SM 9221B	=	490000		18000	MPN/100ml		FGL Env.	11/29/18	12/3/18
SE68	SC-56R	11/29/18	Fecal Coliform	SM 9221B	=	4900		180	MPN/100ml		FGL Env.	11/29/18	12/2/18
SE69	SC-1	12/16/18	Fecal Coliform	SM 9221B	=	7900		180	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE69	SC-1R	12/16/18	Fecal Coliform	SM 9221B	=	17000		180	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE69	SC-55	12/16/18	Fecal Coliform	SM 9221B	=	11000		180	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE69	SC-55R	12/16/18	Fecal Coliform	SM 9221B	=	2300		180	MPN/100ml		FGL Env.	12/16/18	12/19/18

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE69	SC-56	12/16/18	Fecal Coliform	SM 9221B	=	33000		1800	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE69	SC-56R	12/16/18	Fecal Coliform	SM 9221B	=	1300		18	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE70	SC-1	5/15/19	Fecal Coliform	SM 9221B	=	13000000		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-1R	5/15/19	Fecal Coliform	SM 9221B	=	6300		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-55	5/15/19	Fecal Coliform	SM 9221B	=	3500000		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-55R	5/15/19	Fecal Coliform	SM 9221B	=	110000		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-56	5/15/19	Fecal Coliform	SM 9221B	=	130000		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-56R	5/15/19	Fecal Coliform	SM 9221B	=	3300		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
DW35	SC-1	9/24/18	Total Coliform	SM 9221B	=	320		18	MPN/100ml		FGL Env.	9/24/18	9/28/18
DW35	SC-1	9/24/18	Total Coliform	SM 9223B	=	7701		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW35	SC-1R	9/24/18	Total Coliform	SM 9221B	=	700		18	MPN/100ml		FGL Env.	9/24/18	9/28/18
DW35	SC-1R	9/24/18	Total Coliform	SM 9223B	=	8164		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW35	SC-55	9/24/18	Total Coliform	SM 9221B	=	13000		180	MPN/100ml		FGL Env.	9/24/18	9/28/18
DW35	SC-55	9/24/18	Total Coliform	SM 9223B	>	24196		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW35	SC-55R	9/24/18	Total Coliform	SM 9221B	=	1700		18	MPN/100ml		FGL Env.	9/24/18	9/28/18
DW35	SC-55R	9/24/18	Total Coliform	SM 9223B	=	14136		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW35	SC-56	9/24/18	Total Coliform	SM 9221B	=	23000		1800	MPN/100ml		FGL Env.	9/24/18	9/26/18
DW35	SC-56	9/24/18	Total Coliform	SM 9223B	=	24196		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW35	SC-56R	9/24/18	Total Coliform	SM 9221B	=	700		18	MPN/100ml		FGL Env.	9/24/18	9/27/18
DW35	SC-56R	9/24/18	Total Coliform	SM 9223B	=	4106		10	MPN/100ml		FGL Env.	9/24/18	9/25/18
DW36	SC-1	1/30/19	Total Coliform	SM 9221B	=	2300000		180000	MPN/100ml		FGL Env.	1/30/19	2/1/19
DW36	SC-1	1/30/19	Total Coliform	SM 9223B	>	24196		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW36	SC-1R	1/30/19	Total Coliform	SM 9221B	=	7900		180	MPN/100ml		FGL Env.	1/30/19	2/2/19
DW36	SC-1R	1/30/19	Total Coliform	SM 9223B	=	12033		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW36	SC-55	1/30/19	Total Coliform	SM 9221B	=	2200		18	MPN/100ml		FGL Env.	1/30/19	2/2/19
DW36	SC-55	1/30/19	Total Coliform	SM 9223B	=	6488		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW36	SC-55R	1/30/19	Total Coliform	SM 9221B	=	1100		18	MPN/100ml		FGL Env.	1/30/19	2/3/19
DW36	SC-55R	1/30/19	Total Coliform	SM 9223B	=	959		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW36	SC-56	1/30/19	Total Coliform	SM 9221B	=	2200		18	MPN/100ml		FGL Env.	1/30/19	2/2/19
DW36	SC-56	1/30/19	Total Coliform	SM 9223B	=	19863		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW36	SC-56R	1/30/19	Total Coliform	SM 9221B	=	140		18	MPN/100ml		FGL Env.	1/30/19	2/2/19
DW36	SC-56R	1/30/19	Total Coliform	SM 9223B	=	884		10	MPN/100ml		FGL Env.	1/30/19	1/31/19
DW37	SC-1	3/18/19	Total Coliform	SM 9221B	=	11000		180	MPN/100ml		FGL Env.	3/18/19	3/22/19
DW37	SC-1	3/18/19	Total Coliform	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW37	SC-1R	3/18/19	Total Coliform	SM 9221B	=	1700		18	MPN/100ml		FGL Env.	3/18/19	3/22/19
DW37	SC-1R	3/18/19	Total Coliform	SM 9223B	=	165.8		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW37	SC-55	3/18/19	Total Coliform	SM 9221B	=	2300		180	MPN/100ml		FGL Env.	3/18/19	3/21/19
DW37	SC-55	3/18/19	Total Coliform	SM 9223B	=	307.6		1	MPN/100ml		FGL Env.	3/18/19	3/19/19

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW37	SC-55R	3/18/19	Total Coliform	SM 9221B	=	1300		18	MPN/100ml		FGL Env.	3/18/19	3/21/19
DW37	SC-55R	3/18/19	Total Coliform	SM 9223B	=	110.6		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW37	SC-56	3/18/19	Total Coliform	SM 9221B	=	1300		18	MPN/100ml		FGL Env.	3/18/19	3/21/19
DW37	SC-56	3/18/19	Total Coliform	SM 9223B	=	153.9		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW37	SC-56R	3/18/19	Total Coliform	SM 9221B	=	1300		18	MPN/100ml		FGL Env.	3/18/19	3/21/19
DW37	SC-56R	3/18/19	Total Coliform	SM 9223B	=	72.7		1	MPN/100ml		FGL Env.	3/18/19	3/19/19
DW38	SC-1	6/19/19	Total Coliform	SM 9221B	=	130000		1800	MPN/100ml		FGL Env.	6/19/19	6/22/19
DW38	SC-1	6/19/19	Total Coliform	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
DW38	SC-1R	6/19/19	Total Coliform	SM 9221B	=	1400		18	MPN/100ml		FGL Env.	6/19/19	6/22/19
DW38	SC-1R	6/19/19	Total Coliform	SM 9223B	=	1413.6		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
DW38	SC-55	6/19/19	Total Coliform	SM 9221B	=	1200		18	MPN/100ml		FGL Env.	6/19/19	6/22/19
DW38	SC-55	6/19/19	Total Coliform	SM 9223B	=	727		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
DW38	SC-55R	6/19/19	Total Coliform	SM 9221B	=	1200		18	MPN/100ml		FGL Env.	6/19/19	6/22/19
DW38	SC-55R	6/19/19	Total Coliform	SM 9223B	=	613.1		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
DW38	SC-56	6/19/19	Total Coliform	SM 9221B	=	70000		1800	MPN/100ml		FGL Env.	6/19/19	6/22/19
DW38	SC-56	6/19/19	Total Coliform	SM 9223B	>	2149.6		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
DW38	SC-56R	6/19/19	Total Coliform	SM 9221B	=	790		18	MPN/100ml		FGL Env.	6/19/19	6/22/19
DW38	SC-56R	6/19/19	Total Coliform	SM 9223B	=	344.8		1	MPN/100ml		FGL Env.	6/19/19	6/20/19
SE68	SC-1	11/29/18	Total Coliform	SM 9221B	=	790000		18000	MPN/100ml		FGL Env.	11/29/18	12/3/18
SE68	SC-1	11/29/18	Total Coliform	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE68	SC-1R	11/29/18	Total Coliform	SM 9221B	=	130000		1800	MPN/100ml		FGL Env.	11/29/18	12/3/18
SE68	SC-1R	11/29/18	Total Coliform	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE68	SC-55	11/29/18	Total Coliform	SM 9221B	=	790000		18000	MPN/100ml		FGL Env.	11/29/18	12/2/18
SE68	SC-55	11/29/18	Total Coliform	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE68	SC-55R	11/29/18	Total Coliform	SM 9221B	=	1700000		18000	MPN/100ml		FGL Env.	11/29/18	12/2/18
SE68	SC-55R	11/29/18	Total Coliform	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE68	SC-56	11/29/18	Total Coliform	SM 9221B	=	1300000		18000	MPN/100ml		FGL Env.	11/29/18	12/3/18
SE68	SC-56	11/29/18	Total Coliform	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE68	SC-56R	11/29/18	Total Coliform	SM 9221B	=	23000		1800	MPN/100ml		FGL Env.	11/29/18	12/2/18
SE68	SC-56R	11/29/18	Total Coliform	SM 9223B	>	2419.6		1	MPN/100ml		FGL Env.	11/29/18	11/30/18
SE69	SC-1	12/16/18	Total Coliform	SM 9221B	=	330000		18000	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE69	SC-1	12/16/18	Total Coliform	SM 9223B	>	24196		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE69	SC-1R	12/16/18	Total Coliform	SM 9221B	=	230000		18000	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE69	SC-1R	12/16/18	Total Coliform	SM 9223B	>	24196		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE69	SC-55	12/16/18	Total Coliform	SM 9221B	=	330000		18000	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE69	SC-55	12/16/18	Total Coliform	SM 9223B	>	24196		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE69	SC-55R	12/16/18	Total Coliform	SM 9221B	=	49000		1800	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE69	SC-55R	12/16/18	Total Coliform	SM 9223B	>	24196		10	MPN/100ml		FGL Env.	12/16/18	12/17/18

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE69	SC-56	12/16/18	Total Coliform	SM 9221B	=	490000		18000	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE69	SC-56	12/16/18	Total Coliform	SM 9223B	>	24196		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE69	SC-56R	12/16/18	Total Coliform	SM 9221B	=	11000		180	MPN/100ml		FGL Env.	12/16/18	12/19/18
SE69	SC-56R	12/16/18	Total Coliform	SM 9223B	=	12033		10	MPN/100ml		FGL Env.	12/16/18	12/17/18
SE70	SC-1	5/15/19	Total Coliform	SM 9221B	=	16000000		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-1	5/15/19	Total Coliform	SM 9223B	>	2420		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
SE70	SC-1R	5/15/19	Total Coliform	SM 9221B	=	6300		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-1R	5/15/19	Total Coliform	SM 9223B	>	2420		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
SE70	SC-55	5/15/19	Total Coliform	SM 9221B	=	54000000		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-55	5/15/19	Total Coliform	SM 9223B	>	2420		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
SE70	SC-55R	5/15/19	Total Coliform	SM 9221B	=	490000		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-55R	5/15/19	Total Coliform	SM 9223B	>	2420		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
SE70	SC-56	5/15/19	Total Coliform	SM 9221B	=	220000		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-56	5/15/19	Total Coliform	SM 9223B	>	2420		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
SE70	SC-56R	5/15/19	Total Coliform	SM 9221B	=	33000		2	MPN/100ml		GeoAnalytical	5/16/19	5/19/19
SE70	SC-56R	5/15/19	Total Coliform	SM 9223B	>	2420		1	MPN/100ml		GeoAnalytical	5/16/19	5/17/19
DW35	SC-1	9/24/18	DO - Field		=	6.4		0.01	mg/L		Field		
DW35	SC-1R	9/24/18	DO - Field		=	7.1		0.01	mg/L		Field		
DW35	SC-55	9/24/18	DO - Field		=	3.78		0.01	mg/L		Field		
DW35	SC-55R	9/24/18	DO - Field		=	7.16		0.01	mg/L		Field		
DW35	SC-56	9/24/18	DO - Field		=	2.56		0.01	mg/L		Field		
DW35	SC-56R	9/24/18	DO - Field		=	8.06		0.01	mg/L		Field		
DW36	SC-1	1/30/19	DO - Field		=	8.66		0.01	mg/L		Field		
DW36	SC-1R	1/30/19	DO - Field		=	9.48		0.01	mg/L		Field		
DW36	SC-55	1/30/19	DO - Field		=	5.12		0.01	mg/L		Field		
DW36	SC-55R	1/30/19	DO - Field		=	7.67		0.01	mg/L		Field		
DW36	SC-56	1/30/19	DO - Field		=	5.17		0.01	mg/L		Field		
DW36	SC-56R	1/30/19	DO - Field		=	7.58		0.01	mg/L		Field		
DW37	SC-1	3/18/19	DO - Field		=	7.74		0.01	mg/L		Field		
DW37	SC-1R	3/18/19	DO - Field		=	12.24		0.01	mg/L		Field		
DW37	SC-55	3/18/19	DO - Field		=	7.94		0.01	mg/L		Field		
DW37	SC-55R	3/18/19	DO - Field		=	10.29		0.01	mg/L		Field		
DW37	SC-56	3/18/19	DO - Field		=	5.21		0.01	mg/L		Field		
DW37	SC-56R	3/18/19	DO - Field		=	10.07		0.01	mg/L		Field		
DW38	SC-1	6/19/19	DO - Field		=	6		0.01	mg/L		Field		
DW38	SC-1R	6/19/19	DO - Field		=	6.29		0.01	mg/L		Field		
DW38	SC-55	6/19/19	DO - Field		=	4.04		0.01	mg/L		Field		
DW38	SC-55R	6/19/19	DO - Field		=	6.6		0.01	mg/L		Field		

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW38	SC-56	6/19/19	DO - Field		=	3.08		0.01	mg/L		Field		
DW38	SC-56R	6/19/19	DO - Field		=	8.08		0.01	mg/L		Field		
SE68	NE-RAIN	11/29/18	DO - Field		=	11.49		0.01	mg/L		Field		
SE68	NW-RAIN	11/29/18	DO - Field		=	9.58		0.01	mg/L		Field		
SE68	SC-1	11/29/18	DO - Field		=	10.18		0.01	mg/L		Field		
SE68	SC-1R	11/29/18	DO - Field		=	10.25		0.01	mg/L		Field		
SE68	SC-55	11/29/18	DO - Field		=	7.75		0.01	mg/L		Field		
SE68	SC-55R	11/29/18	DO - Field		=	6.04		0.01	mg/L		Field		
SE68	SC-56	11/29/18	DO - Field		=	8.33		0.01	mg/L		Field		
SE68	SC-56R	11/29/18	DO - Field		=	6.86		0.01	mg/L		Field		
SE68	SC-RAIN	11/29/18	DO - Field		=	10.77		0.01	mg/L		Field		
SE69	NE-RAIN	12/17/18	DO - Field		=	10.67		0.01	mg/L		Field		
SE69	NW-RAIN	12/16/18	DO - Field		=	10.24		0.01	mg/L		Field		
SE69	SC-1	12/16/18	DO - Field		=	8.49		0.01	mg/L		Field		
SE69	SC-1R	12/16/18	DO - Field		=	6.51		0.01	mg/L		Field		
SE69	SC-55	12/16/18	DO - Field		=	9.82		0.01	mg/L		Field		
SE69	SC-55R	12/16/18	DO - Field		=	5.06		0.01	mg/L		Field		
SE69	SC-56	12/16/18	DO - Field		=	8.12		0.01	mg/L		Field		
SE69	SC-56R	12/16/18	DO - Field		=	7.13		0.01	mg/L		Field		
SE69	SC-RAIN	12/16/18	DO - Field		=	7.93		0.01	mg/L		Field		
SE70	NE-RAIN	5/16/19	DO - Field		=	6.99		0.01	mg/L		Field		
SE70	NW-RAIN	5/16/19	DO - Field		=	9.27		0.01	mg/L		Field		
SE70	SC-1	5/15/19	DO - Field		=	8.03		0.01	mg/L		Field		
SE70	SC-1R	5/15/19	DO - Field		=	7.75		0.01	mg/L		Field		
SE70	SC-55	5/15/19	DO - Field		=	5.8		0.01	mg/L		Field		
SE70	SC-55R	5/15/19	DO - Field		=	6.42		0.01	mg/L		Field		
SE70	SC-56	5/15/19	DO - Field		=	5.86		0.01	mg/L		Field		
SE70	SC-56R	5/15/19	DO - Field		=	7.4		0.01	mg/L		Field		
SE70	SC-RAIN	5/16/19	DO - Field		=	8.3		0.01	mg/L		Field		
DW35	SC-1	9/24/18	Oil and Grease	1664A	=	3.94	1.5	3	mg/L		FGL Env.	10/3/18	10/4/18
DW35	SC-1R	9/24/18	Oil and Grease	1664A	=	3.49	1.5	3	mg/L		FGL Env.	10/3/18	10/4/18
DW36	SC-1	1/30/19	Oil and Grease	1664A	<	1.9	1.9	3	mg/L	ND, U	FGL Env.	2/11/19	2/13/19
DW36	SC-1R	1/30/19	Oil and Grease	1664A	=	3.04	1.9	3	mg/L		FGL Env.	2/11/19	2/13/19
DW37	SC-1	3/18/19	Oil and Grease	1664A	<	1.9	1.9	3	mg/L	ND, U	FGL Env.	4/3/19	4/4/19
DW37	SC-1R	3/18/19	Oil and Grease	1664A	<	1.9	1.9	3	mg/L	ND, U	FGL Env.	4/3/19	4/4/19
DW38	SC-1	6/19/19	Oil and Grease	1664A	=	5.44	1.9	3	mg/L		FGL Env.	6/27/19	7/1/19
DW38	SC-1R	6/19/19	Oil and Grease	1664A	=	4.78	1.9	3	mg/L		FGL Env.	6/27/19	7/1/19
SE68	SC-1	11/29/18	Oil and Grease	1664A	=	3.19	1.9	3	mg/L		FGL Env.	12/6/18	12/8/18

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE68	SC-1R	11/29/18	Oil and Grease	1664A	=	4.11	1.9	3	mg/L		FGL Env.	12/6/18	12/10/18
SE69	SC-1	12/16/18	Oil and Grease	1664A	=	5.56	1.9	3	mg/L		FGL Env.	1/2/19	1/3/19
SE69	SC-1R	12/16/18	Oil and Grease	1664A	=	4.12	1.9	3	mg/L		FGL Env.	1/2/19	1/3/19
SE70	SC-1	5/15/19	Oil and Grease	1664A	=	2.34	1.9	3	mg/L	J	FGL Env.	5/29/19	5/30/19
SE70	SC-1R	5/15/19	Oil and Grease	1664A	=	2.56	1.9	3	mg/L	J	FGL Env.	5/29/19	5/30/19
DW35	SC-1	9/24/18	pH - Field		=	7.89		0-14	pH Units		Field		
DW35	SC-1R	9/24/18	pH - Field		=	8.22		0-14	pH Units		Field		
DW35	SC-55	9/24/18	pH - Field		=	7.4		0-14	pH Units		Field		
DW35	SC-55R	9/24/18	pH - Field		=	7.98		0-14	pH Units		Field		
DW35	SC-56	9/24/18	pH - Field		=	7.63		0-14	pH Units		Field		
DW35	SC-56R	9/24/18	pH - Field		=	8.2		0-14	pH Units		Field		
DW36	SC-1	1/30/19	pH - Field		=	8.26		0-14	pH Units		Field		
DW36	SC-1R	1/30/19	pH - Field		=	8.39		0-14	pH Units		Field		
DW36	SC-55	1/30/19	pH - Field		=	7.61		0-14	pH Units		Field		
DW36	SC-55R	1/30/19	pH - Field		=	7.64		0-14	pH Units		Field		
DW36	SC-56	1/30/19	pH - Field		=	7.32		0-14	pH Units		Field		
DW36	SC-56R	1/30/19	pH - Field		=	7.65		0-14	pH Units		Field		
DW37	SC-1	3/18/19	pH - Field		=	7.22		0-14	pH Units		Field		
DW37	SC-1R	3/18/19	pH - Field		=	8.4		0-14	pH Units		Field		
DW37	SC-55	3/18/19	pH - Field		=	7.96		0-14	pH Units		Field		
DW37	SC-55R	3/18/19	pH - Field		=	8.27		0-14	pH Units		Field		
DW37	SC-56	3/18/19	pH - Field		=	7.59		0-14	pH Units		Field		
DW37	SC-56R	3/18/19	pH - Field		=	8.27		0-14	pH Units		Field		
DW38	SC-1	6/19/19	pH - Field		=	7.6		0-14	pH Units		Field		
DW38	SC-1R	6/19/19	pH - Field		=	7.92		0-14	pH Units		Field		
DW38	SC-55	6/19/19	pH - Field		=	7.59		0-14	pH Units		Field		
DW38	SC-55R	6/19/19	pH - Field		=	8.09		0-14	pH Units		Field		
DW38	SC-56	6/19/19	pH - Field		=	7.41		0-14	pH Units		Field		
DW38	SC-56R	6/19/19	pH - Field		=	8.12		0-14	pH Units		Field		
SE68	NE-RAIN	11/29/18	pH - Field		=	7.14		0-14	pH Units		Field		
SE68	NW-RAIN	11/29/18	pH - Field		=	8.05		0-14	pH Units		Field		
SE68	SC-1	11/29/18	pH - Field		=	6.77		0-14	pH Units		Field		
SE68	SC-1R	11/29/18	pH - Field		=	6.77		0-14	pH Units		Field		
SE68	SC-55	11/29/18	pH - Field		=	6.82		0-14	pH Units		Field		
SE68	SC-55R	11/29/18	pH - Field		=	7.08		0-14	pH Units		Field		
SE68	SC-56	11/29/18	pH - Field		=	7.09		0-14	pH Units		Field		
SE68	SC-56R	11/29/18	pH - Field		=	7.44		0-14	pH Units		Field		
SE68	SC-RAIN	11/29/18	pH - Field		=	5.47		0-14	pH Units		Field		

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE69	NE-RAIN	12/17/18	pH - Field		=	6.89		0-14	pH Units		Field		
SE69	NW-RAIN	12/16/18	pH - Field		=	7.46		0-14	pH Units		Field		
SE69	SC-1	12/16/18	pH - Field		=	7.63		0-14	pH Units		Field		
SE69	SC-1R	12/16/18	pH - Field		=	7.03		0-14	pH Units		Field		
SE69	SC-55	12/16/18	pH - Field		=	6.93		0-14	pH Units		Field		
SE69	SC-55R	12/16/18	pH - Field		=	7.06		0-14	pH Units		Field		
SE69	SC-56	12/16/18	pH - Field		=	7.36		0-14	pH Units		Field		
SE69	SC-56R	12/16/18	pH - Field		=	7.21		0-14	pH Units		Field		
SE69	SC-RAIN	12/16/18	pH - Field		=	6.98		0-14	pH Units		Field		
SE70	NE-RAIN	5/16/19	pH - Field		=	6.79		0-14	pH Units		Field		
SE70	NW-RAIN	5/16/19	pH - Field		=	6.89		0-14	pH Units		Field		
SE70	SC-1	5/15/19	pH - Field		=	7.3		0-14	pH Units		Field		
SE70	SC-1R	5/15/19	pH - Field		=	8.17		0-14	pH Units		Field		
SE70	SC-55	5/15/19	pH - Field		=	7.19		0-14	pH Units		Field		
SE70	SC-55R	5/15/19	pH - Field		=	7.7		0-14	pH Units		Field		
SE70	SC-56	5/15/19	pH - Field		=	7.38		0-14	pH Units		Field		
SE70	SC-56R	5/15/19	pH - Field		=	7.81		0-14	pH Units		Field		
SE70	SC-RAIN	5/16/19	pH - Field		=	7.98		0-14	pH Units		Field		
DW35	SC-1	9/24/18	Temperature - Field		=	22.2		0.01	°C		Field		
DW35	SC-1R	9/24/18	Temperature - Field		=	23.4		0.01	°C		Field		
DW35	SC-55	9/24/18	Temperature - Field		=	25.5		0.01	°C		Field		
DW35	SC-55R	9/24/18	Temperature - Field		=	24.6		0.01	°C		Field		
DW35	SC-56	9/24/18	Temperature - Field		=	25.3		0.01	°C		Field		
DW35	SC-56R	9/24/18	Temperature - Field		=	25.9		0.01	°C		Field		
DW36	SC-1	1/30/19	Temperature - Field		=	18.7		0.01	°C		Field		
DW36	SC-1R	1/30/19	Temperature - Field		=	15.3		0.01	°C		Field		
DW36	SC-55	1/30/19	Temperature - Field		=	14.7		0.01	°C		Field		
DW36	SC-55R	1/30/19	Temperature - Field		=	13.4		0.01	°C		Field		
DW36	SC-56	1/30/19	Temperature - Field		=	15.3		0.01	°C		Field		
DW36	SC-56R	1/30/19	Temperature - Field		=	13.4		0.01	°C		Field		
DW37	SC-1	3/18/19	Temperature - Field		=	17.1		0.01	°C		Field		
DW37	SC-1R	3/18/19	Temperature - Field		=	16.9		0.01	°C		Field		
DW37	SC-55	3/18/19	Temperature - Field		=	16.4		0.01	°C		Field		
DW37	SC-55R	3/18/19	Temperature - Field		=	17		0.01	°C		Field		
DW37	SC-56	3/18/19	Temperature - Field		=	17.8		0.01	°C		Field		
DW37	SC-56R	3/18/19	Temperature - Field		=	17.7		0.01	°C		Field		
DW38	SC-1	6/19/19	Temperature - Field		=	24.2		0.01	°C		Field		
DW38	SC-1R	6/19/19	Temperature - Field		=	27.7		0.01	°C		Field		

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW38	SC-55	6/19/19	Temperature - Field		=	23.3		0.01	°C		Field		
DW38	SC-55R	6/19/19	Temperature - Field		=	29.2		0.01	°C		Field		
DW38	SC-56	6/19/19	Temperature - Field		=	23		0.01	°C		Field		
DW38	SC-56R	6/19/19	Temperature - Field		=	27.3		0.01	°C		Field		
SE68	NE-RAIN	11/29/18	Temperature - Field		=	14.6		0.01	°C		Field		
SE68	NW-RAIN	11/29/18	Temperature - Field		=	14.5		0.01	°C		Field		
SE68	SC-1	11/29/18	Temperature - Field		=	14.7		0.01	°C		Field		
SE68	SC-1R	11/29/18	Temperature - Field		=	13.8		0.01	°C		Field		
SE68	SC-55	11/29/18	Temperature - Field		=	14.7		0.01	°C		Field		
SE68	SC-55R	11/29/18	Temperature - Field		=	13.7		0.01	°C		Field		
SE68	SC-56	11/29/18	Temperature - Field		=	14.5		0.01	°C		Field		
SE68	SC-56R	11/29/18	Temperature - Field		=	13.1		0.01	°C		Field		
SE68	SC-RAIN	11/29/18	Temperature - Field		=	12.1		0.01	°C		Field		
SE69	NE-RAIN	12/17/18	Temperature - Field		=	11.3		0.01	°C		Field		
SE69	NW-RAIN	12/16/18	Temperature - Field		=	12		0.01	°C		Field		
SE69	SC-1	12/16/18	Temperature - Field		=	13.3		0.01	°C		Field		
SE69	SC-1R	12/16/18	Temperature - Field		=	11.5		0.01	°C		Field		
SE69	SC-55	12/16/18	Temperature - Field		=	13		0.01	°C		Field		
SE69	SC-55R	12/16/18	Temperature - Field		=	11.3		0.01	°C		Field		
SE69	SC-56	12/16/18	Temperature - Field		=	13.2		0.01	°C		Field		
SE69	SC-56R	12/16/18	Temperature - Field		=	11.2		0.01	°C		Field		
SE69	SC-RAIN	12/16/18	Temperature - Field		=	12.4		0.01	°C		Field		
SE70	NE-RAIN	5/16/19	Temperature - Field		=	23.9		0.01	°C		Field		
SE70	NW-RAIN	5/16/19	Temperature - Field		=	20.9		0.01	°C		Field		
SE70	SC-1	5/15/19	Temperature - Field		=	19.9		0.01	°C		Field		
SE70	SC-1R	5/15/19	Temperature - Field		=	20.9		0.01	°C		Field		
SE70	SC-55	5/15/19	Temperature - Field		=	19.9		0.01	°C		Field		
SE70	SC-55R	5/15/19	Temperature - Field		=	20.1		0.01	°C		Field		
SE70	SC-56	5/15/19	Temperature - Field		=	19.1		0.01	°C		Field		
SE70	SC-56R	5/15/19	Temperature - Field		=	18.6		0.01	°C		Field		
SE70	SC-RAIN	5/16/19	Temperature - Field		=	22		0.01	°C		Field		
DW35	SC-1	9/24/18	Alkalinity (as CaCO3)	2320B	=	110	1.1	10	mg/L		FGL Env.	9/25/17	9/25/18
DW35	SC-1R	9/24/18	Alkalinity (as CaCO3)	2320B	=	106	1.1	10	mg/L		FGL Env.	9/25/18	9/25/18
DW36	SC-1	1/30/19	Alkalinity (as CaCO3)	2320B	=	330	1.1	10	mg/L		FGL Env.	2/5/19	2/5/19
DW36	SC-1R	1/30/19	Alkalinity (as CaCO3)	2320B	=	71.3	1.1	10	mg/L		FGL Env.	2/5/19	2/5/19
DW37	SC-1	3/18/19	Alkalinity (as CaCO3)	2320B	=	249	1.1	10	mg/L		FGL Env.	3/20/19	3/20/19
DW37	SC-1R	3/18/19	Alkalinity (as CaCO3)	2320B	=	77.3	1.1	10	mg/L		FGL Env.	3/20/19	3/20/19
DW38	SC-1	6/19/19	Alkalinity (as CaCO3)	2320B	=	165	1.1	10	mg/L		FGL Env.	6/26/19	6/26/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW38	SC-1R	6/19/19	Alkalinity (as CaCO3)	2320B	=	62.5	1.1	10	mg/L		FGL Env.	6/26/19	6/26/19
SE68	SC-1	11/29/18	Alkalinity (as CaCO3)	2320B	=	18.8	1.1	10	mg/L		FGL Env.	12/3/18	12/3/18
SE68	SC-1R	11/29/18	Alkalinity (as CaCO3)	2320B	=	49.9	1.1	10	mg/L		FGL Env.	12/3/18	12/3/18
SE69	SC-1	12/16/18	Alkalinity (as CaCO3)	2320B	=	14	1.1	10	mg/L		FGL Env.	12/19/18	12/19/18
SE69	SC-1R	12/16/18	Alkalinity (as CaCO3)	2320B	=	62.7	1.1	10	mg/L		FGL Env.	12/19/18	12/19/18
SE70	SC-1	5/15/19	Alkalinity (as CaCO3)	2320B	=	36.7	1.1	10	mg/L		FGL Env.	5/21/19	5/21/19
SE70	SC-1R	5/15/19	Alkalinity (as CaCO3)	2320B	=	106	1.1	10	mg/L		FGL Env.	5/21/19	5/21/19
DW35	SC-1	9/24/18	Ammonia Nitrogen	4500NH3G	<	0.072	0.072	0.2	mg/L	ND, U	FGL Env.	10/1/17	10/1/18
DW35	SC-1R	9/24/18	Ammonia Nitrogen	4500NH3G	<	0.072	0.072	0.2	mg/L	ND, U	FGL Env.	10/1/18	10/1/18
DW36	SC-1	1/30/19	Ammonia Nitrogen	4500NH3G	=	0.537	0.072	0.2	mg/L		FGL Env.	2/4/19	2/4/19
DW36	SC-1R	1/30/19	Ammonia Nitrogen	4500NH3G	<	0.072	0.072	0.2	mg/L	ND, U	FGL Env.	2/4/19	2/4/19
DW37	SC-1	3/18/19	Ammonia Nitrogen	4500NH3G	<	0.072	0.072	0.2	mg/L	ND, U	FGL Env.	3/25/19	3/25/19
DW37	SC-1R	3/18/19	Ammonia Nitrogen	4500NH3G	<	0.072	0.072	0.2	mg/L	ND, U	FGL Env.	3/25/19	3/25/19
DW38	SC-1	6/19/19	Ammonia Nitrogen	4500NH3G	<	0.036	0.036	0.2	mg/L	ND, U	FGL Env.	6/24/19	6/24/19
DW38	SC-1R	6/19/19	Ammonia Nitrogen	4500NH3G	<	0.036	0.036	0.2	mg/L	ND, U	FGL Env.	6/24/19	6/24/19
SE68	SC-1	11/29/18	Ammonia Nitrogen	4500NH3G	=	0.417	0.072	0.2	mg/L		FGL Env.	12/3/18	12/3/18
SE68	SC-1R	11/29/18	Ammonia Nitrogen	4500NH3G	=	0.237	0.072	0.2	mg/L		FGL Env.	12/3/18	12/3/18
SE69	SC-1	12/16/18	Ammonia Nitrogen	4500NH3G	=	0.694	0.072	0.2	mg/L		FGL Env.	12/24/18	12/24/18
SE69	SC-1R	12/16/18	Ammonia Nitrogen	4500NH3G	=	0.724	0.072	0.2	mg/L		FGL Env.	12/24/18	12/24/18
SE70	SC-1	5/15/19	Ammonia Nitrogen	4500NH3G	=	0.983	0.072	0.2	mg/L		FGL Env.	5/20/19	5/20/19
SE70	SC-1R	5/15/19	Ammonia Nitrogen	4500NH3G	<	0.072	0.072	0.2	mg/L	U, ND	FGL Env.	5/20/19	5/20/19
DW35	SC-1	9/24/18	Bicarbonate	2320B	=	134	1.1	10	mg/L		FGL Env.	9/25/17	9/25/18
DW35	SC-1R	9/24/18	Bicarbonate	2320B	=	129	1.1	10	mg/L		FGL Env.	9/25/18	9/25/18
DW36	SC-1	1/30/19	Bicarbonate	2320B	=	403	1.1	10	mg/L		FGL Env.	2/5/19	2/5/19
DW36	SC-1R	1/30/19	Bicarbonate	2320B	=	86.9	1.1	10	mg/L		FGL Env.	2/5/19	2/5/19
DW37	SC-1	3/18/19	Bicarbonate	2320B	=	304	1.1	10	mg/L		FGL Env.	3/20/19	3/20/19
DW37	SC-1R	3/18/19	Bicarbonate	2320B	=	94.4	1.1	10	mg/L		FGL Env.	3/20/19	3/20/19
DW38	SC-1	6/19/19	Bicarbonate	2320B	=	201	1.1	10	mg/L		FGL Env.	6/26/19	6/26/19
DW38	SC-1R	6/19/19	Bicarbonate	2320B	=	76.1	1.1	10	mg/L		FGL Env.	6/26/19	6/26/19
SE68	SC-1	11/29/18	Bicarbonate	2320B	=	22.9	1.1	10	mg/L		FGL Env.	12/3/18	12/3/18
SE68	SC-1R	11/29/18	Bicarbonate	2320B	=	61	1.1	10	mg/L		FGL Env.	12/3/18	12/3/18
SE69	SC-1	12/16/18	Bicarbonate	2320B	=	17.1	1.1	10	mg/L		FGL Env.	12/19/18	12/19/18
SE69	SC-1R	12/16/18	Bicarbonate	2320B	=	76.6	1.1	10	mg/L		FGL Env.	12/19/18	12/19/18
SE70	SC-1	5/15/19	Bicarbonate	2320B	=	44.9	1.1	10	mg/L		FGL Env.	5/21/19	5/21/19
SE70	SC-1R	5/15/19	Bicarbonate	2320B	=	130	1.1	10	mg/L		FGL Env.	5/21/19	5/21/19
DW35	SC-1	9/24/18	BOD	5210B	=	3.9	0.19	2	mg/L	I	FGL Env.	9/24/18	9/29/18
DW35	SC-1R	9/24/18	BOD	5210B	=	4.6	0.19	2	mg/L	I	FGL Env.	9/24/18	9/29/18
DW36	SC-1	1/30/19	BOD	5210B	=	4.7	0.19	2	mg/L	I	FGL Env.	1/31/19	2/5/19

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW36	SC-1R	1/30/19	BOD	5210B	=	6.5	0.19	2	mg/L	I	FGL Env.	1/31/19	2/5/19
DW37	SC-1	3/18/19	BOD	5210B	=	0.8	0.19	2	mg/L	J	FGL Env.	3/19/19	3/24/19
DW37	SC-1R	3/18/19	BOD	5210B	=	6.9	0.19	2	mg/L		FGL Env.	3/19/19	3/24/19
DW38	SC-1	6/19/19	BOD	5210B	=	3.4	0.19	2	mg/L		FGL Env.	6/20/19	6/25/19
DW38	SC-1R	6/19/19	BOD	5210B	=	3.2	0.19	2	mg/L		FGL Env.	6/20/19	6/25/19
SE68	SC-1	11/29/18	BOD	5210B	=	33.8	0.19	17	mg/L		FGL Env.	11/29/18	12/4/18
SE68	SC-1R	11/29/18	BOD	5210B	=	5.8	0.19	2	mg/L		FGL Env.	11/29/18	12/4/18
SE69	SC-1	12/16/18	BOD	5210B	=	24.6	0.19	8.7	mg/L	I	FGL Env.	12/17/18	12/22/18
SE69	SC-1R	12/16/18	BOD	5210B	=	8.58	0.19	4.3	mg/L	I	FGL Env.	12/17/18	12/22/18
SE70	SC-1	5/15/19	BOD	5210B	=	29.2	0.19	8.7	mg/L	I	FGL Env.	5/16/19	5/21/19
SE70	SC-1R	5/15/19	BOD	5210B	=	5.8	0.19	2	mg/L	I	FGL Env.	5/16/19	5/21/19
DW35	SC-1	9/24/18	Carbonate	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	9/25/17	9/25/18
DW35	SC-1R	9/24/18	Carbonate	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	9/25/18	9/25/18
DW36	SC-1	1/30/19	Carbonate	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	2/5/19	2/5/19
DW36	SC-1R	1/30/19	Carbonate	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	2/5/19	2/5/19
DW37	SC-1	3/18/19	Carbonate	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	3/20/19	3/20/19
DW37	SC-1R	3/18/19	Carbonate	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	3/20/19	3/20/19
DW38	SC-1	6/19/19	Carbonate	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	6/26/19	6/26/19
DW38	SC-1R	6/19/19	Carbonate	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	6/26/19	6/26/19
SE68	SC-1	11/29/18	Carbonate	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	12/3/18	12/3/18
SE68	SC-1R	11/29/18	Carbonate	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	12/3/18	12/3/18
SE69	SC-1	12/16/18	Carbonate	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	12/19/18	12/19/18
SE69	SC-1R	12/16/18	Carbonate	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	12/19/18	12/19/18
SE70	SC-1	5/15/19	Carbonate	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	5/21/19	5/21/19
SE70	SC-1R	5/15/19	Carbonate	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	5/21/19	5/21/19
DW35	SC-1	9/24/18	COD	5220D	=	15.3	4.4	20	mg/L	Jb	FGL Env.	9/28/18	9/28/18
DW35	SC-1R	9/24/18	COD	5220D	=	39.8	4.4	20	mg/L		FGL Env.	10/5/18	10/5/18
DW36	SC-1	1/30/19	COD	5220D	<	7.9	7.9	20	mg/L	ND, Ub	FGL Env.	2/4/19	2/4/19
DW36	SC-1R	1/30/19	COD	5220D	=	11.8	7.9	20	mg/L	Jb	FGL Env.	2/4/19	2/4/19
DW37	SC-1	3/18/19	COD	5220D	<	7.9	7.9	20	mg/L	ND, Uhb	FGL Env.	3/25/19	3/25/19
DW37	SC-1R	3/18/19	COD	5220D	=	16.8	7.9	20	mg/L	Jhb	FGL Env.	3/25/19	3/25/19
DW38	SC-1	6/19/19	COD	5220D	=	13.9	7.9	20	mg/L	J	FGL Env.	6/24/19	6/24/19
DW38	SC-1R	6/19/19	COD	5220D	<	7.9	7.9	20	mg/L	ND, U	FGL Env.	6/24/19	6/24/19
SE68	SC-1	11/29/18	COD	5220D	=	109	7.9	20	mg/L	b	FGL Env.	12/17/18	12/17/18
SE68	SC-1R	11/29/18	COD	5220D	=	24.2	7.9	20	mg/L	b	FGL Env.	12/10/18	12/10/18
SE69	SC-1	12/16/18	COD	5220D	=	81.6	7.9	20	mg/L	b	FGL Env.	1/2/19	1/2/19
SE69	SC-1R	12/16/18	COD	5220D	=	21.7	7.9	20	mg/L	b	FGL Env.	1/2/19	1/2/19
SE70	SC-1	5/15/19	COD	5220D	=	140	7.9	20	mg/L		FGL Env.	5/20/19	5/20/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE70	SC-1R	5/15/19	COD	5220D	=	34.1	7.9	20	mg/L		FGL Env.	5/29/19	5/29/19
DW35	SC-1	9/24/18	EC - Field		=	840		1	µS/cm		Field		
DW35	SC-1R	9/24/18	EC - Field		=	908		1	µS/cm		Field		
DW35	SC-55	9/24/18	EC - Field		=	991		1	µS/cm		Field		
DW35	SC-55R	9/24/18	EC - Field		=	930		1	µS/cm		Field		
DW35	SC-56	9/24/18	EC - Field		=	302		1	µS/cm		Field		
DW35	SC-56R	9/24/18	EC - Field		=	937		1	µS/cm		Field		
DW36	SC-1	1/30/19	EC - Field		=	977		1	µS/cm		Field		
DW36	SC-1R	1/30/19	EC - Field		=	372.3		1	µS/cm		Field		
DW36	SC-55	1/30/19	EC - Field		=	693		1	µS/cm		Field		
DW36	SC-55R	1/30/19	EC - Field		=	451.6		1	µS/cm		Field		
DW36	SC-56	1/30/19	EC - Field		=	391.7		1	µS/cm		Field		
DW36	SC-56R	1/30/19	EC - Field		=	608.2		1	µS/cm		Field		
DW37	SC-1	3/18/19	EC - Field		=	750		1	µS/cm		Field		
DW37	SC-1R	3/18/19	EC - Field		=	761		1	µS/cm		Field		
DW37	SC-55	3/18/19	EC - Field		=	582.1		1	µS/cm		Field		
DW37	SC-55R	3/18/19	EC - Field		=	277.4		1	µS/cm		Field		
DW37	SC-56	3/18/19	EC - Field		=	1165		1	µS/cm		Field		
DW37	SC-56R	3/18/19	EC - Field		=	278.1		1	µS/cm		Field		
DW38	SC-1	6/19/19	EC - Field		=	543		1	µS/cm		Field		
DW38	SC-1R	6/19/19	EC - Field		=	225.1		1	µS/cm		Field		
DW38	SC-55	6/19/19	EC - Field		=	317.5		1	µS/cm		Field		
DW38	SC-55R	6/19/19	EC - Field		=	183		1	µS/cm		Field		
DW38	SC-56	6/19/19	EC - Field		=	466.5		1	µS/cm		Field		
DW38	SC-56R	6/19/19	EC - Field		=	150.5		1	µS/cm		Field		
SE68	NE-RAIN	11/29/18	EC - Field		=	15.2		1	µS/cm		Field		
SE68	NW-RAIN	11/29/18	EC - Field		=	12.5		1	µS/cm		Field		
SE68	SC-1	11/29/18	EC - Field		=	83.1		1	µS/cm		Field		
SE68	SC-1R	11/29/18	EC - Field		=	268.6		1	µS/cm		Field		
SE68	SC-55	11/29/18	EC - Field		=	66.4		1	µS/cm		Field		
SE68	SC-55R	11/29/18	EC - Field		=	321.5		1	µS/cm		Field		
SE68	SC-56	11/29/18	EC - Field		=	81.3		1	µS/cm		Field		
SE68	SC-56R	11/29/18	EC - Field		=	586.8		1	µS/cm		Field		
SE68	SC-RAIN	11/29/18	EC - Field		=	9.6		1	µS/cm		Field		
SE69	NE-RAIN	12/17/18	EC - Field		=	2		1	µS/cm		Field		
SE69	NW-RAIN	12/16/18	EC - Field		=	4		1	µS/cm		Field		
SE69	SC-1	12/16/18	EC - Field		=	76.9		1	µS/cm		Field		
SE69	SC-1R	12/16/18	EC - Field		=	320.8		1	µS/cm		Field		

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE69	SC-55	12/16/18	EC - Field		=	74		1	µS/cm		Field		
SE69	SC-55R	12/16/18	EC - Field		=	385		1	µS/cm		Field		
SE69	SC-56	12/16/18	EC - Field		=	67		1	µS/cm		Field		
SE69	SC-56R	12/16/18	EC - Field		=	667		1	µS/cm		Field		
SE69	SC-RAIN	12/16/18	EC - Field		=	5.4		1	µS/cm		Field		
SE70	NE-RAIN	5/16/19	EC - Field		=	9.6		1	µS/cm		Field		
SE70	NW-RAIN	5/16/19	EC - Field		=	9.5		1	µS/cm		Field		
SE70	SC-1	5/15/19	EC - Field		=	134.7		1	µS/cm		Field		
SE70	SC-1R	5/15/19	EC - Field		=	388.2		1	µS/cm		Field		
SE70	SC-55	5/15/19	EC - Field		=	282.7		1	µS/cm		Field		
SE70	SC-55R	5/15/19	EC - Field		=	314.7		1	µS/cm		Field		
SE70	SC-56	5/15/19	EC - Field		=	462.5		1	µS/cm		Field		
SE70	SC-56R	5/15/19	EC - Field		=	249.7		1	µS/cm		Field		
SE70	SC-RAIN	5/16/19	EC - Field		=	10.7		1	µS/cm		Field		
DW35	SC-1	9/24/18	Hydroxide	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	9/25/17	9/25/18
DW35	SC-1R	9/24/18	Hydroxide	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	9/25/18	9/25/18
DW36	SC-1	1/30/19	Hydroxide	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	2/5/19	2/5/19
DW36	SC-1R	1/30/19	Hydroxide	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	2/5/19	2/5/19
DW37	SC-1	3/18/19	Hydroxide	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	3/20/19	3/20/19
DW37	SC-1R	3/18/19	Hydroxide	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	3/20/19	3/20/19
DW38	SC-1	6/19/19	Hydroxide	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	6/26/19	6/26/19
DW38	SC-1R	6/19/19	Hydroxide	2320B	<	1.1	1.1	10	mg/L	ND, U	FGL Env.	6/26/19	6/26/19
SE68	SC-1	11/29/18	Hydroxide	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	12/3/18	12/3/18
SE68	SC-1R	11/29/18	Hydroxide	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	12/3/18	12/3/18
SE69	SC-1	12/16/18	Hydroxide	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	12/19/18	12/19/18
SE69	SC-1R	12/16/18	Hydroxide	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	12/19/18	12/19/18
SE70	SC-1	5/15/19	Hydroxide	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	5/21/19	5/21/19
SE70	SC-1R	5/15/19	Hydroxide	2320B	<	1.1	1.1	10	mg/L	U, ND	FGL Env.	5/21/19	5/21/19
DW35	SC-1	9/24/18	Nitrogen, Total Kjeldahl	EPA351.2	=	0.855	0.32	0.5	mg/L	1b	FGL Env.	10/2/18	10/2/18
DW35	SC-1R	9/24/18	Nitrogen, Total Kjeldahl	EPA351.2	=	0.917	0.32	0.5	mg/L		FGL Env.	10/3/18	10/4/18
DW36	SC-1	1/30/19	Nitrogen, Total Kjeldahl	EPA351.2	<	0.32	0.32	0.5	mg/L	ND, Ub	FGL Env.	2/1/19	2/4/19
DW36	SC-1R	1/30/19	Nitrogen, Total Kjeldahl	EPA351.2	<	0.32	0.32	0.5	mg/L	ND, Ub	FGL Env.	2/1/19	2/4/19
DW37	SC-1	3/18/19	Nitrogen, Total Kjeldahl	EPA351.2	<	0.32	0.32	0.5	mg/L	ND, U	FGL Env.	3/20/19	3/22/19
DW37	SC-1R	3/18/19	Nitrogen, Total Kjeldahl	EPA351.2	=	0.576	0.32	0.5	mg/L		FGL Env.	3/20/19	3/22/19
DW38	SC-1	6/19/19	Nitrogen, Total Kjeldahl	EPA351.2	=	0.353	0.32	0.5	mg/L	J	FGL Env.	6/25/19	6/27/19
DW38	SC-1R	6/19/19	Nitrogen, Total Kjeldahl	EPA351.2	=	0.619	0.32	0.5	mg/L		FGL Env.	6/25/19	6/27/19
SE68	SC-1	11/29/18	Nitrogen, Total Kjeldahl	EPA351.2	=	1.71	0.32	0.5	mg/L	1	FGL Env.	12/4/18	12/4/18
SE68	SC-1R	11/29/18	Nitrogen, Total Kjeldahl	EPA351.2	=	0.471	0.32	0.5	mg/L	J1	FGL Env.	12/4/18	12/4/18

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE69	SC-1	12/16/18	Nitrogen, Total Kjeldahl	EPA351.2	=	1.23	0.32	0.5	mg/L		FGL Env.	12/19/18	12/20/18
SE69	SC-1R	12/16/18	Nitrogen, Total Kjeldahl	EPA351.2	=	0.905	0.32	0.5	mg/L		FGL Env.	12/19/18	12/20/18
SE70	SC-1	5/15/19	Nitrogen, Total Kjeldahl	EPA351.2	=	3.78	0.32	0.5	mg/L		FGL Env.	5/21/19	5/22/19
SE70	SC-1R	5/15/19	Nitrogen, Total Kjeldahl	EPA351.2	=	3.05	0.32	0.5	mg/L		FGL Env.	5/21/19	5/22/19
DW35	SC-1	9/24/18	Solids, Total Suspended (TSS)	2540D	=	23.7	0.019	2	mg/L	f	FGL Env.	9/24/18	9/25/18
DW35	SC-1R	9/24/18	Solids, Total Suspended (TSS)	2540D	=	21.3	0.019	2	mg/L	f	FGL Env.	9/24/18	9/25/18
DW36	SC-1	1/30/19	Solids, Total Suspended (TSS)	2540D	=	7.62	0.019	1.1	mg/L		FGL Env.	1/30/19	1/31/19
DW36	SC-1R	1/30/19	Solids, Total Suspended (TSS)	2540D	=	10.1	0.019	1.3	mg/L		FGL Env.	1/30/19	1/31/19
DW37	SC-1	3/18/19	Solids, Total Suspended (TSS)	2540D	=	1.5	0.019	1.1	mg/L	fb	FGL Env.	3/19/19	3/20/19
DW37	SC-1R	3/18/19	Solids, Total Suspended (TSS)	2540D	=	20.6	0.019	5.6	mg/L	fb	FGL Env.	3/19/19	3/20/19
DW38	SC-1	6/19/19	Solids, Total Suspended (TSS)	2540D	=	6.97	0.019	1.1	mg/L	b	FGL Env.	6/19/19	6/20/19
DW38	SC-1R	6/19/19	Solids, Total Suspended (TSS)	2540D	=	18.3	0.019	2.4	mg/L	b	FGL Env.	6/19/19	6/20/19
SE68	SC-1	11/29/18	Solids, Total Suspended (TSS)	2540D	=	69.4	0.019	5	mg/L	b	FGL Env.	11/30/18	12/1/18
SE68	SC-1R	11/29/18	Solids, Total Suspended (TSS)	2540D	=	13.1	0.019	2.2	mg/L	b	FGL Env.	11/30/18	12/1/18
SE69	SC-1	12/16/18	Solids, Total Suspended (TSS)	2540D	=	44.7	0.019	3.3	mg/L	b	FGL Env.	12/17/18	12/18/18
SE69	SC-1R	12/16/18	Solids, Total Suspended (TSS)	2540D	=	17.4	0.019	1.8	mg/L	b	FGL Env.	12/17/18	12/18/18
SE70	SC-1	5/15/19	Solids, Total Suspended (TSS)	2540D	=	52.7	0.019	6.7	mg/L		FGL Env.	5/16/19	5/17/19
SE70	SC-1R	5/15/19	Solids, Total Suspended (TSS)	2540D	=	43.6	0.019	10	mg/L		FGL Env.	5/16/19	5/17/19
DW35	SC-1	9/24/18	Specific Conductance	2510B	=	962	0.16	1	umhos/cm	b	FGL Env.	9/26/18	9/26/18
DW35	SC-1R	9/24/18	Specific Conductance	2510B	=	947	0.16	1	umhos/cm	b	FGL Env.	9/26/18	9/26/18
DW36	SC-1	1/30/19	Specific Conductance	2510B	=	1010	0.16	1	umhos/cm		FGL Env.	2/4/19	2/4/19
DW36	SC-1R	1/30/19	Specific Conductance	2510B	=	401	0.16	1	umhos/cm		FGL Env.	2/4/19	2/4/19
DW37	SC-1	3/18/19	Specific Conductance	2510B	=	780	0.16	1	umhos/cm	b	FGL Env.	3/20/19	3/20/19
DW37	SC-1R	3/18/19	Specific Conductance	2510B	=	265	0.16	1	umhos/cm	b	FGL Env.	3/20/19	3/20/19
DW38	SC-1	6/19/19	Specific Conductance	2510B	=	524	0.16	1	umhos/cm		FGL Env.	6/27/19	6/27/19
DW38	SC-1R	6/19/19	Specific Conductance	2510B	=	213	0.16	1	umhos/cm		FGL Env.	6/25/19	6/25/19
SE68	SC-1	11/29/18	Specific Conductance	2510B	=	61.1	0.16	1	umhos/cm	b	FGL Env.	12/3/18	12/3/18
SE68	SC-1R	11/29/18	Specific Conductance	2510B	=	263	0.16	1	umhos/cm	b	FGL Env.	12/3/18	12/3/18
SE69	SC-1	12/16/18	Specific Conductance	2510B	=	60.5	0.16	1	umhos/cm		FGL Env.	12/19/18	12/19/18
SE69	SC-1R	12/16/18	Specific Conductance	2510B	=	344	0.16	1	umhos/cm		FGL Env.	12/19/18	12/19/18
SE70	SC-1	5/15/19	Specific Conductance	2510B	=	130	0.16	1	umhos/cm		FGL Env.	5/17/19	5/17/19
SE70	SC-1R	5/15/19	Specific Conductance	2510B	=	409	0.16	1	umhos/cm		FGL Env.	5/17/19	5/17/19
DW35	SC-1	9/24/18	TOC	5310C	=	1.73	0.15	0.5	mg/L		FGL Env.	9/27/18	9/27/18
DW35	SC-1R	9/24/18	TOC	5310C	=	2.16	0.15	0.5	mg/L		FGL Env.	9/27/18	9/27/18
DW36	SC-1	1/30/19	TOC	5310C	=	1.01	0.15	0.5	mg/L		FGL Env.	2/4/19	2/4/19
DW36	SC-1R	1/30/19	TOC	5310C	=	2.53	0.15	0.5	mg/L		FGL Env.	2/4/19	2/5/19
DW37	SC-1	3/18/19	TOC	5310C	=	1.3	0.15	0.5	mg/L		FGL Env.	4/1/19	4/1/19
DW37	SC-1R	3/18/19	TOC	5310C	=	3.58	0.15	0.5	mg/L		FGL Env.	4/1/19	4/1/19

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW38	SC-1	6/19/19	TOC	5310C	=	3.49	0.15	0.5	mg/L	B	FGL Env.	7/15/19	7/15/19
DW38	SC-1R	6/19/19	TOC	5310C	=	4.42	0.15	0.5	mg/L	B	FGL Env.	7/15/19	7/15/19
SE68	SC-1	11/29/18	TOC	5310C	=	14.6	0.15	0.5	mg/L		FGL Env.	12/3/18	12/4/18
SE68	SC-1R	11/29/18	TOC	5310C	=	5.96	0.15	0.5	mg/L		FGL Env.	12/3/18	12/4/18
SE69	SC-1	12/16/18	TOC	5310C	=	16.7	0.15	0.5	mg/L		FGL Env.	12/24/18	12/24/18
SE69	SC-1R	12/16/18	TOC	5310C	=	7.49	0.15	0.5	mg/L		FGL Env.	12/24/18	12/24/18
SE70	SC-1	5/15/19	TOC	5310C	=	26.6	0.15	0.5	mg/L		FGL Env.	5/28/19	5/28/19
SE70	SC-1R	5/15/19	TOC	5310C	=	3.55	0.15	0.5	mg/L		FGL Env.	5/28/19	5/28/19
DW35	SC-1	9/24/18	Total Dissolved Solids (TFR)	2540CE	=	538	5.8	20	mg/L	b	FGL Env.	9/26/18	9/27/18
DW35	SC-1R	9/24/18	Total Dissolved Solids (TFR)	2540CE	=	518	5.8	20	mg/L	b	FGL Env.	9/26/18	9/27/18
DW36	SC-1	1/30/19	Total Dissolved Solids (TFR)	2540CE	=	635	5.8	20	mg/L		FGL Env.	2/1/19	2/4/19
DW36	SC-1R	1/30/19	Total Dissolved Solids (TFR)	2540CE	=	175	5.8	20	mg/L		FGL Env.	2/1/19	2/4/19
DW37	SC-1	3/18/19	Total Dissolved Solids (TFR)	2540CE	=	499	5.8	20	mg/L		FGL Env.	3/20/19	3/21/19
DW37	SC-1R	3/18/19	Total Dissolved Solids (TFR)	2540CE	=	143	5.8	20	mg/L		FGL Env.	3/20/19	3/21/19
DW38	SC-1	6/19/19	Total Dissolved Solids (TFR)	2540CE	=	300	5.8	20	mg/L	b	FGL Env.	6/21/19	6/24/19
DW38	SC-1R	6/19/19	Total Dissolved Solids (TFR)	2540CE	=	108	5.8	20	mg/L	b	FGL Env.	6/21/19	6/24/19
SE68	SC-1	11/29/18	Total Dissolved Solids (TFR)	2540C	=	50.2	5.8	20	mg/L		FGL Env.	12/3/18	12/4/18
SE68	SC-1R	11/29/18	Total Dissolved Solids (TFR)	2540C	=	117	5.8	20	mg/L	Ib	FGL Env.	12/3/18	12/4/18
SE69	SC-1	12/16/18	Total Dissolved Solids (TFR)	2540C	=	52.4	5.8	11	mg/L		FGL Env.	12/19/18	12/20/18
SE69	SC-1R	12/16/18	Total Dissolved Solids (TFR)	2540C	=	181	5.8	20	mg/L		FGL Env.	12/19/18	12/20/18
SE70	SC-1	5/15/19	Total Dissolved Solids (TFR)	2540C	=	83.7	5.8	20	mg/L	b	FGL Env.	5/17/19	5/20/19
SE70	SC-1R	5/15/19	Total Dissolved Solids (TFR)	2540C	=	218	5.8	20	mg/L	b	FGL Env.	5/17/19	5/20/19
DW35	SC-1	9/24/18	Total Hardness as CaCO3	3010	=	275	0.018	2.5	mg/L	1	FGL Env.	10/1/17	10/2/18
DW35	SC-1R	9/24/18	Total Hardness as CaCO3	3010	=	156	0.018	2.5	mg/L	P	FGL Env.	9/26/18	10/2/18
DW36	SC-1	1/30/19	Total Hardness as CaCO3	3010	=	312	0.018	2.5	mg/L	h	FGL Env.	2/1/19	2/2/19
DW36	SC-1R	1/30/19	Total Hardness as CaCO3	3010	=	87.3	0.018	2.5	mg/L	h	FGL Env.	2/1/19	2/2/19
DW37	SC-1	3/18/19	Total Hardness as CaCO3	3010	=	262	0.018	2.5	mg/L		FGL Env.	3/27/19	3/29/19
DW37	SC-1R	3/18/19	Total Hardness as CaCO3	3010	=	83.1	0.018	2.5	mg/L		FGL Env.	3/27/19	3/29/19
DW38	SC-1	6/19/19	Total Hardness as CaCO3	3010	=	165	0.018	2.5	mg/L	P	FGL Env.	6/27/19	6/27/19
DW38	SC-1R	6/19/19	Total Hardness as CaCO3	3010	=	63.7	0.018	2.5	mg/L	P	FGL Env.	6/27/19	6/27/19
SE68	SC-1	11/29/18	Total Hardness as CaCO3	200.7	=	28.9	0.018	2.5	mg/L		FGL Env.	12/5/18	12/6/18
SE68	SC-1R	11/29/18	Total Hardness as CaCO3	200.7	=	56.5	0.018	2.5	mg/L		FGL Env.	12/5/18	12/6/18
SE69	SC-1	12/16/18	Total Hardness as CaCO3	200.7	=	20.9	0.018	2.5	mg/L		FGL Env.	12/28/18	12/29/18
SE69	SC-1R	12/16/18	Total Hardness as CaCO3	200.7	=	71.7	0.018	2.5	mg/L		FGL Env.	12/28/18	12/29/18
SE70	SC-1	5/15/19	Total Hardness as CaCO3	200.7	=	49.2	0.018	2.5	mg/L		FGL Env.	5/20/19	5/22/19
SE70	SC-1R	5/15/19	Total Hardness as CaCO3	200.7	=	120	0.018	2.5	mg/L		FGL Env.	5/20/19	5/22/19
DW35	SC-1	9/24/18	Turbidity	2130B	=	9.28	0.021	0.2	NTU		FGL Env.	9/24/18	9/24/18
DW35	SC-1R	9/24/18	Turbidity	2130B	=	12.7	0.021	0.2	NTU		FGL Env.	9/24/18	9/24/18

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW36	SC-1	1/30/19	Turbidity	2130B	=	1.64	0.021	0.2	NTU		FGL Env.	1/30/19	1/30/19
DW36	SC-1R	1/30/19	Turbidity	2130B	=	6.23	0.021	0.2	NTU		FGL Env.	1/30/19	1/30/19
DW37	SC-1	3/18/19	Turbidity	2130B	=	1.18	0.021	0.2	NTU		FGL Env.	3/18/19	3/18/19
DW37	SC-1R	3/18/19	Turbidity	2130B	=	8.59	0.021	0.2	NTU		FGL Env.	3/18/19	3/18/19
DW38	SC-1	6/19/19	Turbidity	2130B	=	4.66	0.048	0.2	NTU		FGL Env.	6/20/19	6/20/19
DW38	SC-1R	6/19/19	Turbidity	2130B	=	11.6	0.048	0.2	NTU		FGL Env.	6/20/19	6/20/19
SE68	SC-1	11/29/18	Turbidity	2130B	=	58.1	0.021	0.2	NTU		FGL Env.	11/29/18	11/29/18
SE68	SC-1R	11/29/18	Turbidity	2130B	=	9.38	0.021	0.2	NTU		FGL Env.	11/29/18	11/29/18
SE69	SC-1	12/16/18	Turbidity	2130B	=	36.5	0.021	0.2	NTU		FGL Env.	12/17/18	12/17/18
SE69	SC-1R	12/16/18	Turbidity	2130B	=	16	0.021	0.2	NTU		FGL Env.	12/17/18	12/17/18
SE70	SC-1	5/15/19	Turbidity	2130B	=	52.4	0.021	0.2	NTU		FGL Env.	5/16/19	5/16/19
SE70	SC-1R	5/15/19	Turbidity	2130B	=	29	0.021	0.2	NTU		FGL Env.	5/16/19	5/16/19
DW35	SC-1	9/24/18	Mercury	EPA 1631E	=	1	0.2	0.5	ng/L		Caltest	10/3/18	10/4/18
DW35	SC-1R	9/24/18	Mercury	EPA 1631E	=	1.8	0.2	0.5	ng/L		Caltest	10/3/18	10/4/18
DW35	SC-55	9/24/18	Mercury	EPA 1631E	=	22	0.2	0.5	ng/L		Caltest	10/3/18	10/4/18
DW35	SC-55R	9/24/18	Mercury	EPA 1631E	=	2.1	0.2	0.5	ng/L		Caltest	10/3/18	10/4/18
DW35	SC-56	9/24/18	Mercury	EPA 1631E	=	49	0.4	0.8	ng/L		Caltest	10/3/18	10/4/18
DW35	SC-56R	9/24/18	Mercury	EPA 1631E	=	0.86	0.2	0.5	ng/L		Caltest	10/3/18	10/4/18
DW36	SC-1	1/30/19	Mercury	EPA 1631E	=	830	0.2	0.5	ng/L	BJ	Caltest	2/4/19	2/5/19
DW36	SC-1R	1/30/19	Mercury	EPA 1631E	=	1300	0.2	0.5	ng/L	BJ	Caltest	2/4/19	2/5/19
DW36	SC-55	1/30/19	Mercury	EPA 1631E	=	76	0.4	0.8	ng/L		Caltest	2/4/19	2/5/19
DW36	SC-55R	1/30/19	Mercury	EPA 1631E	=	1.7	0.2	0.5	ng/L		Caltest	2/4/19	2/5/19
DW36	SC-56	1/30/19	Mercury	EPA 1631E	=	8	0.2	0.5	ng/L		Caltest	2/4/19	2/5/19
DW36	SC-56R	1/30/19	Mercury	EPA 1631E	=	2.6	0.2	0.5	ng/L		Caltest	2/4/19	2/5/19
DW37	SC-1	3/18/19	Mercury	EPA 1631E	=	5.3	0.2	0.5	ng/L		Caltest	3/28/19	3/29/19
DW37	SC-1R	3/18/19	Mercury	EPA 1631E	=	3.3	0.2	0.5	ng/L		Caltest	3/28/19	3/29/19
DW37	SC-55	3/18/19	Mercury	EPA 1631E	=	6.4	0.2	0.5	ng/L		Caltest	3/28/19	3/29/19
DW37	SC-55R	3/18/19	Mercury	EPA 1631E	=	2.6	0.2	0.5	ng/L		Caltest	3/28/19	3/29/19
DW37	SC-56	3/18/19	Mercury	EPA 1631E	=	6.5	0.2	0.5	ng/L		Caltest	3/28/19	3/29/19
DW37	SC-56R	3/18/19	Mercury	EPA 1631E	=	2.2	0.2	0.5	ng/L		Caltest	3/28/19	3/29/19
DW38	SC-1	6/19/19	Mercury	EPA 1631E	=	2.1	0.2	0.5	ng/L		Caltest	7/2/19	7/3/19
DW38	SC-1R	6/19/19	Mercury	EPA 1631E	=	1.6	0.2	0.5	ng/L		Caltest	7/2/19	7/3/19
DW38	SC-55	6/19/19	Mercury	EPA 1631E	=	77	0.2	0.5	ng/L		Caltest	7/2/19	7/3/19
DW38	SC-55R	6/19/19	Mercury	EPA 1631E	=	1.8	0.2	0.5	ng/L		Caltest	7/2/19	7/3/19
DW38	SC-56	6/19/19	Mercury	EPA 1631E	=	2.6	0.2	0.5	ng/L		Caltest	7/2/19	7/3/19
DW38	SC-56R	6/19/19	Mercury	EPA 1631E	=	1.6	0.2	0.5	ng/L		Caltest	7/2/19	7/3/19
SE68	NE-RAIN	11/29/18	Mercury	EPA 1631E	=	2.2	0.2	0.5	ng/L		Caltest	12/3/18	12/4/18
SE68	NW-RAIN	11/29/18	Mercury	EPA 1631E	=	1.3	0.2	0.5	ng/L		Caltest	12/3/18	12/4/18

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE68	SC-1	11/29/18	Mercury	EPA 1631E	=	7	0.2	0.5	ng/L		Caltest	12/3/18	12/4/18
SE68	SC-1R	11/29/18	Mercury	EPA 1631E	=	3.9	0.2	0.5	ng/L		Caltest	12/3/18	12/4/18
SE68	SC-55	11/29/18	Mercury	EPA 1631E	=	11	0.2	0.5	ng/L		Caltest	12/3/18	12/4/18
SE68	SC-55R	11/29/18	Mercury	EPA 1631E	=	8.7	0.2	0.5	ng/L		Caltest	12/3/18	12/4/18
SE68	SC-56	11/29/18	Mercury	EPA 1631E	=	15	0.2	0.5	ng/L		Caltest	12/3/18	12/4/18
SE68	SC-56R	11/29/18	Mercury	EPA 1631E	=	1.8	0.2	0.5	ng/L		Caltest	12/3/18	12/4/18
SE68	SC-RAIN	11/29/18	Mercury	EPA 1631E	=	1.8	0.2	0.5	ng/L		Caltest	12/3/18	12/4/18
SE69	NE-RAIN	12/17/18	Mercury	EPA 1631E	=	2.2	0.2	0.5	ng/L		Caltest	12/26/18	12/27/18
SE69	NW-RAIN	12/16/18	Mercury	EPA 1631E	=	2.6	0.2	0.5	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-1	12/16/18	Mercury	EPA 1631E	=	8.3	0.2	0.5	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-1R	12/16/18	Mercury	EPA 1631E	=	3.8	0.2	0.5	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-55	12/16/18	Mercury	EPA 1631E	=	17	0.2	0.5	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-55R	12/16/18	Mercury	EPA 1631E	=	2.3	0.2	0.5	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-56	12/16/18	Mercury	EPA 1631E	=	8.7	0.2	0.5	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-56R	12/16/18	Mercury	EPA 1631E	=	1.6	0.2	0.5	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-RAIN	12/16/18	Mercury	EPA 1631E	=	3.4	0.2	0.5	ng/L		Caltest	12/26/18	12/27/18
SE70	NE-RAIN	5/16/19	Mercury	EPA 1631E	=	4.6	0.2	0.5	ng/L		Caltest	5/27/19	5/28/19
SE70	NW-RAIN	5/16/19	Mercury	EPA 1631E	=	3.2	0.2	0.5	ng/L		Caltest	5/27/19	5/28/19
SE70	SC-1	5/15/19	Mercury	EPA 1631E	=	21	0.2	0.5	ng/L		Caltest	5/27/19	5/28/19
SE70	SC-1R	5/15/19	Mercury	EPA 1631E	=	5.4	0.2	0.5	ng/L		Caltest	5/27/19	5/28/19
SE70	SC-55	5/15/19	Mercury	EPA 1631E	=	20	0.2	0.5	ng/L		Caltest	5/27/19	5/28/19
SE70	SC-55R	5/15/19	Mercury	EPA 1631E	=	24	0.2	0.5	ng/L		Caltest	5/27/19	5/28/19
SE70	SC-56	5/15/19	Mercury	EPA 1631E	=	13	0.2	0.5	ng/L		Caltest	5/27/19	5/28/19
SE70	SC-56R	5/15/19	Mercury	EPA 1631E	=	3.3	0.2	0.5	ng/L		Caltest	5/27/19	5/28/19
SE70	SC-RAIN	5/16/19	Mercury	EPA 1631E	=	3.5	0.2	0.5	ng/L		Caltest	5/27/19	5/28/19
DW35	SC-1	9/24/18	Methyl Mercury	EPA 1630	<	20	20	50	ng/L	ND	Caltest	10/3/18	10/4/18
DW35	SC-1R	9/24/18	Methyl Mercury	EPA 1630	<	20	20	50	ng/L	ND	Caltest	10/4/18	10/4/18
DW35	SC-55	9/24/18	Methyl Mercury	EPA 1630	=	110	20	50	ng/L		Caltest	10/4/18	10/4/18
DW35	SC-55R	9/24/18	Methyl Mercury	EPA 1630	<	20	20	50	ng/L	ND	Caltest	10/4/18	10/4/18
DW35	SC-56	9/24/18	Methyl Mercury	EPA 1630	=	320	20	50	ng/L		Caltest	10/4/18	10/4/18
DW35	SC-56R	9/24/18	Methyl Mercury	EPA 1630	<	20	20	50	ng/L	ND	Caltest	10/4/18	10/4/18
DW36	SC-1	1/30/19	Methyl Mercury	EPA 1630	=	20	20	50	ng/L	J	Caltest	2/6/19	2/6/19
DW36	SC-1R	1/30/19	Methyl Mercury	EPA 1630	=	40	20	50	ng/L	J	Caltest	2/6/19	2/6/19
DW36	SC-55	1/30/19	Methyl Mercury	EPA 1630	=	100	20	50	ng/L		Caltest	2/6/19	2/6/19
DW36	SC-55R	1/30/19	Methyl Mercury	EPA 1630	=	50	20	50	ng/L		Caltest	2/6/19	2/6/19
DW36	SC-56	1/30/19	Methyl Mercury	EPA 1630	=	80	20	50	ng/L		Caltest	2/6/19	2/6/19
DW36	SC-56R	1/30/19	Methyl Mercury	EPA 1630	=	70	20	50	ng/L		Caltest	2/6/19	2/6/19
DW37	SC-1	3/18/19	Methyl Mercury	EPA 1630	=	50	20	50	ng/L		Caltest	3/29/19	3/29/19

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW37	SC-1R	3/18/19	Methyl Mercury	EPA 1630	=	60	20	50	ng/L		Caltest	3/29/19	3/29/19
DW37	SC-55	3/18/19	Methyl Mercury	EPA 1630	=	60	20	50	ng/L		Caltest	3/29/19	3/29/19
DW37	SC-55R	3/18/19	Methyl Mercury	EPA 1630	<	20	20	50	ng/L	ND	Caltest	3/29/19	3/29/19
DW37	SC-56	3/18/19	Methyl Mercury	EPA 1630	=	70	20	50	ng/L		Caltest	3/29/19	3/29/19
DW37	SC-56R	3/18/19	Methyl Mercury	EPA 1630	=	60	20	50	ng/L		Caltest	3/29/19	3/29/19
DW38	SC-1	6/19/19	Methyl Mercury	EPA 1630	=	70	20	50	ng/L		Caltest	6/25/19	6/25/19
DW38	SC-1R	6/19/19	Methyl Mercury	EPA 1630	=	40	20	50	ng/L	J	Caltest	6/25/19	6/25/19
DW38	SC-55	6/19/19	Methyl Mercury	EPA 1630	=	1000	20	50	ng/L		Caltest	6/25/19	6/25/19
DW38	SC-55R	6/19/19	Methyl Mercury	EPA 1630	=	50	20	50	ng/L		Caltest	6/25/19	6/25/19
DW38	SC-56	6/19/19	Methyl Mercury	EPA 1630	=	140	20	50	ng/L		Caltest	6/25/19	6/25/19
DW38	SC-56R	6/19/19	Methyl Mercury	EPA 1630	=	60	20	50	ng/L		Caltest	6/25/19	6/25/19
SE68	NE-RAIN	11/29/18	Methyl Mercury	EPA 1630	=	60	20	50	ng/L		Caltest	12/4/18	12/6/18
SE68	NW-RAIN	11/29/18	Methyl Mercury	EPA 1630	<	20	20	50	ng/L	ND	Caltest	12/4/18	12/6/18
SE68	SC-1	11/29/18	Methyl Mercury	EPA 1630	<	20	20	50	ng/L	ND	Caltest	12/4/18	12/6/18
SE68	SC-1R	11/29/18	Methyl Mercury	EPA 1630	=	70	20	50	ng/L		Caltest	12/4/18	12/6/18
SE68	SC-55	11/29/18	Methyl Mercury	EPA 1630	=	90	20	50	ng/L		Caltest	12/4/18	12/6/18
SE68	SC-55R	11/29/18	Methyl Mercury	EPA 1630	=	90	20	50	ng/L		Caltest	12/4/18	12/6/18
SE68	SC-56	11/29/18	Methyl Mercury	EPA 1630	=	150	20	50	ng/L		Caltest	12/4/18	12/6/18
SE68	SC-56R	11/29/18	Methyl Mercury	EPA 1630	=	30	20	50	ng/L	J	Caltest	12/4/18	12/6/18
SE68	SC-RAIN	11/29/18	Methyl Mercury	EPA 1630	=	30	20	50	ng/L	J	Caltest	12/4/18	12/6/18
SE69	NE-RAIN	12/17/18	Methyl Mercury	EPA 1630	=	40	20	50	ng/L	J	Caltest	12/26/18	12/27/18
SE69	NW-RAIN	12/16/18	Methyl Mercury	EPA 1630	=	30	20	50	ng/L	J	Caltest	12/26/18	12/27/18
SE69	SC-1	12/16/18	Methyl Mercury	EPA 1630	=	90	20	50	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-1R	12/16/18	Methyl Mercury	EPA 1630	=	70	20	50	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-55	12/16/18	Methyl Mercury	EPA 1630	=	100	20	50	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-55R	12/16/18	Methyl Mercury	EPA 1630	=	70	20	50	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-56	12/16/18	Methyl Mercury	EPA 1630	=	120	20	50	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-56R	12/16/18	Methyl Mercury	EPA 1630	=	50	20	50	ng/L		Caltest	12/26/18	12/27/18
SE69	SC-RAIN	12/16/18	Methyl Mercury	EPA 1630	=	30	20	50	ng/L	J	Caltest	12/26/18	12/27/18
SE70	NE-RAIN	5/16/19	Methyl Mercury	EPA 1630	=	40	20	50	ng/L	J	Caltest	5/29/19	5/29/19
SE70	NW-RAIN	5/16/19	Methyl Mercury	EPA 1630	=	70	20	50	ng/L		Caltest	5/29/19	5/29/19
SE70	SC-1	5/15/19	Methyl Mercury	EPA 1630	=	430	20	50	ng/L		Caltest	5/20/19	5/20/19
SE70	SC-1R	5/15/19	Methyl Mercury	EPA 1630	=	60	20	50	ng/L		Caltest	5/20/19	5/20/19
SE70	SC-55	5/15/19	Methyl Mercury	EPA 1630	=	160	20	50	ng/L		Caltest	5/20/19	5/20/19
SE70	SC-55R	5/15/19	Methyl Mercury	EPA 1630	=	160	20	50	ng/L		Caltest	5/20/19	5/20/19
SE70	SC-56	5/15/19	Methyl Mercury	EPA 1630	=	240	20	50	ng/L		Caltest	5/20/19	5/20/19
SE70	SC-56R	5/15/19	Methyl Mercury	EPA 1630	=	50	20	50	ng/L		Caltest	5/20/19	5/20/19
SE70	SC-RAIN	5/16/19	Methyl Mercury	EPA 1630	=	50	20	50	ng/L		Caltest	5/29/19	5/29/19

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW35	SC-1	9/24/18	Aluminum, Dissolved	200.8	=	4.44	0.071	10	ug/L	J	FGL Env.	9/29/17	9/29/18
DW35	SC-1R	9/24/18	Aluminum, Dissolved	200.8	=	0.427	0.071	10	ug/L	J	FGL Env.	9/29/18	9/29/18
DW36	SC-1	1/30/19	Aluminum, Dissolved	200.8	=	1.09	0.1	10	ug/L	J	FGL Env.	2/1/19	2/2/19
DW36	SC-1R	1/30/19	Aluminum, Dissolved	200.8	=	6.13	0.1	10	ug/L	J	FGL Env.	2/1/19	2/2/19
DW37	SC-1	3/18/19	Aluminum, Dissolved	200.8	=	4.9	0.1	10	ug/L	J	FGL Env.	3/25/19	3/25/19
DW37	SC-1R	3/18/19	Aluminum, Dissolved	200.8	=	1.25	0.1	10	ug/L	J	FGL Env.	3/25/19	3/25/19
DW38	SC-1	6/19/19	Aluminum, Dissolved	200.8	=	6.9	6.8	10	ug/L	J1	FGL Env.	6/25/19	6/25/19
DW38	SC-1R	6/19/19	Aluminum, Dissolved	200.8	<	6.8	6.8	10	ug/L	ND, U1	FGL Env.	6/25/19	6/25/19
SE68	SC-1	11/29/18	Aluminum, Dissolved	200.8	=	30.7	0.1	20	ug/L	h	FGL Env.	12/5/18	12/5/18
SE68	SC-1R	11/29/18	Aluminum, Dissolved	200.8	=	4.52	0.1	20	ug/L	Jh	FGL Env.	12/5/18	12/5/18
SE69	SC-1	12/16/18	Aluminum, Dissolved	200.8	=	18.9	0.1	10	ug/L		FGL Env.	12/24/18	12/26/18
SE69	SC-1R	12/16/18	Aluminum, Dissolved	200.8	=	2.75	0.1	10	ug/L	J	FGL Env.	12/24/18	12/26/18
SE70	SC-1	5/15/19	Aluminum, Dissolved	200.8	=	22.2	6.8	10	ug/L	h	FGL Env.	5/23/19	5/23/19
SE70	SC-1R	5/15/19	Aluminum, Dissolved	200.8	<	6.8	6.8	10	ug/L	U, ND	FGL Env.	5/22/19	5/22/19
DW35	SC-1	9/24/18	Aluminum, Total	3010	=	78.6	0.05	10	ug/L	P	FGL Env.	9/26/17	10/1/18
DW35	SC-1R	9/24/18	Aluminum, Total	3010	=	523	0.05	20	ug/L	P	FGL Env.	9/26/18	10/2/18
DW36	SC-1	1/30/19	Aluminum, Total	3010	=	310	0.05	10	ug/L	P	FGL Env.	2/4/19	2/7/19
DW36	SC-1R	1/30/19	Aluminum, Total	3010	=	149	0.05	10	ug/L	P	FGL Env.	2/4/19	2/7/19
DW37	SC-1	3/18/19	Aluminum, Total	3010	=	93.8	0.05	10	ug/L	P	FGL Env.	3/20/19	3/27/19
DW37	SC-1R	3/18/19	Aluminum, Total	3010	=	323	0.05	10	ug/L	P	FGL Env.	3/20/19	3/27/19
DW38	SC-1	6/19/19	Aluminum, Total	3010	=	171	0.05	200	ug/L	JP	FGL Env.	6/27/19	7/4/19
DW38	SC-1R	6/19/19	Aluminum, Total	3010	=	570	0.05	200	ug/L	P	FGL Env.	6/27/19	7/4/19
SE68	SC-1	11/29/18	Aluminum, Total	200.8	=	3610	0.05	250	ug/L	1P	FGL Env.	12/6/18	12/10/18
SE68	SC-1R	11/29/18	Aluminum, Total	200.8	=	558	0.05	50	ug/L	1P	FGL Env.	12/6/18	12/10/18
SE69	SC-1	12/16/18	Aluminum, Total	200.8	=	1590	0.05	100	ug/L	hP	FGL Env.	1/3/19	1/14/19
SE69	SC-1R	12/16/18	Aluminum, Total	200.8	=	198	0.05	50	ug/L	hP	FGL Env.	1/3/19	1/14/19
SE70	SC-1	5/15/19	Aluminum, Total	200.8	=	2880	0.05	100	ug/L	P	FGL Env.	5/20/19	5/30/19
SE70	SC-1R	5/15/19	Aluminum, Total	200.8	=	1230	0.05	50	ug/L	P	FGL Env.	5/20/19	5/30/19
DW35	SC-1	9/24/18	Copper, Dissolved	200.8	=	8.02	0.038	1	ug/L		FGL Env.	9/29/17	9/29/18
DW35	SC-1R	9/24/18	Copper, Dissolved	200.8	=	7.99	0.38	1	ug/L		FGL Env.	9/29/18	9/29/18
DW36	SC-1	1/30/19	Copper, Dissolved	200.8	=	1.76	0.066	1	ug/L		FGL Env.	2/1/19	2/2/19
DW36	SC-1R	1/30/19	Copper, Dissolved	200.8	=	1.6	0.066	1	ug/L		FGL Env.	2/1/19	2/2/19
DW37	SC-1	3/18/19	Copper, Dissolved	200.8	=	1.38	0.066	1	ug/L		FGL Env.	3/25/19	3/25/19
DW37	SC-1R	3/18/19	Copper, Dissolved	200.8	=	1.56	0.066	1	ug/L		FGL Env.	3/25/19	3/25/19
DW38	SC-1	6/19/19	Copper, Dissolved	200.8	=	1.52	0.34	1	ug/L	1	FGL Env.	6/25/19	6/25/19
DW38	SC-1R	6/19/19	Copper, Dissolved	200.8	=	1.26	0.34	1	ug/L	1	FGL Env.	6/25/19	6/25/19
SE68	SC-1	11/29/18	Copper, Dissolved	200.8	=	5.44	0.066	1	ug/L	1	FGL Env.	12/3/18	12/4/18
SE68	SC-1R	11/29/18	Copper, Dissolved	200.8	=	3.84	0.066	1	ug/L	1	FGL Env.	12/3/18	12/4/18

City of Stockton and County of San Joaquin
Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE69	SC-1	12/16/18	Copper, Dissolved	200.8	=	4.84	0.066	1	ug/L		FGL Env.	12/24/18	12/26/18
SE69	SC-1R	12/16/18	Copper, Dissolved	200.8	=	2.58	0.066	1	ug/L		FGL Env.	12/24/18	12/26/18
SE70	SC-1	5/15/19	Copper, Dissolved	200.8	=	9.62	0.34	1	ug/L		FGL Env.	5/22/19	5/22/19
SE70	SC-1R	5/15/19	Copper, Dissolved	200.8	=	1.48	0.34	1	ug/L		FGL Env.	5/22/19	5/22/19
DW35	SC-1	9/24/18	Copper, Total	3010	=	3.15	0.071	1	ug/L		FGL Env.	9/26/17	10/1/18
DW35	SC-1R	9/24/18	Copper, Total	3010	=	3.67	0.071	1	ug/L		FGL Env.	9/26/18	10/1/18
DW36	SC-1	1/30/19	Copper, Total	3010	=	4.21	0.071	1	ug/L		FGL Env.	2/4/19	2/7/19
DW36	SC-1R	1/30/19	Copper, Total	3010	=	2.88	0.071	1	ug/L		FGL Env.	2/4/19	2/7/19
DW37	SC-1	3/18/19	Copper, Total	3010	=	3.76	0.071	1	ug/L		FGL Env.	3/20/19	3/27/19
DW37	SC-1R	3/18/19	Copper, Total	3010	=	3.96	0.071	1	ug/L		FGL Env.	3/20/19	3/27/19
DW38	SC-1	6/19/19	Copper, Total	3010	=	6.42	0.012	5	ug/L		FGL Env.	6/27/19	6/27/19
DW38	SC-1R	6/19/19	Copper, Total	3010	=	5.46	0.012	5	ug/L		FGL Env.	6/27/19	6/27/19
SE68	SC-1	11/29/18	Copper, Total	200.8	=	43.9	0.071	2	ug/L		FGL Env.	12/6/18	12/8/18
SE68	SC-1R	11/29/18	Copper, Total	200.8	=	5.42	0.071	1	ug/L		FGL Env.	12/6/18	12/6/18
SE69	SC-1	12/16/18	Copper, Total	200.8	=	14.8	0.071	1	ug/L		FGL Env.	1/3/19	1/13/19
SE69	SC-1R	12/16/18	Copper, Total	200.8	=	6.89	0.071	1	ug/L		FGL Env.	1/3/19	1/13/19
SE70	SC-1	5/15/19	Copper, Total	200.8	=	34.7	0.071	1	ug/L	P	FGL Env.	5/20/19	5/28/19
SE70	SC-1R	5/15/19	Copper, Total	200.8	=	5.74	0.071	1	ug/L	P	FGL Env.	5/20/19	5/28/19
DW35	SC-1	9/24/18	Iron, Total	3010	=	124	1.4	50	ug/L		FGL Env.	10/1/17	10/2/18
DW35	SC-1R	9/24/18	Iron, Total	3010	=	791	1.4	50	ug/L		FGL Env.	9/26/18	10/2/18
DW36	SC-1	1/30/19	Iron, Total	3010	=	550	1.4	50	ug/L	h	FGL Env.	2/1/19	2/2/19
DW36	SC-1R	1/30/19	Iron, Total	3010	=	579	1.4	50	ug/L	h	FGL Env.	2/1/19	2/2/19
DW37	SC-1	3/18/19	Iron, Total	3010	=	158	1.4	50	ug/L		FGL Env.	3/27/19	3/29/19
DW37	SC-1R	3/18/19	Iron, Total	3010	=	571	1.4	50	ug/L		FGL Env.	3/27/19	3/29/19
DW38	SC-1	6/19/19	Iron, Total	3010	=	180	1.4	50	ug/L		FGL Env.	6/27/19	6/27/19
DW38	SC-1R	6/19/19	Iron, Total	3010	=	608	1.4	50	ug/L		FGL Env.	6/27/19	6/27/19
SE68	SC-1	11/29/18	Iron, Total	200.7	=	2680	1.4	50	ug/L		FGL Env.	12/5/18	12/6/18
SE68	SC-1R	11/29/18	Iron, Total	200.7	=	557	1.4	50	ug/L		FGL Env.	12/5/18	12/6/18
SE69	SC-1	12/16/18	Iron, Total	200.7	=	2000	1.4	50	ug/L		FGL Env.	12/28/18	12/29/18
SE69	SC-1R	12/16/18	Iron, Total	200.7	=	789	1.4	50	ug/L		FGL Env.	12/28/18	12/29/18
SE70	SC-1	5/15/19	Iron, Total	200.7	=	4000	1.4	50	ug/L		FGL Env.	5/20/19	5/22/19
SE70	SC-1R	5/15/19	Iron, Total	200.7	=	1550	1.4	50	ug/L		FGL Env.	5/20/19	5/22/19
DW35	SC-1	9/24/18	Lead, Dissolved	200.8	<	0.036	0.036	0.2	ug/L	ND, U	FGL Env.	9/29/17	9/29/18
DW35	SC-1R	9/24/18	Lead, Dissolved	200.8	<	0.36	0.36	0.2	ug/L	ND, U	FGL Env.	9/29/18	9/29/18
DW36	SC-1	1/30/19	Lead, Dissolved	200.8	=	0.015	0.015	0.2	ug/L	J	FGL Env.	2/1/19	2/2/19
DW36	SC-1R	1/30/19	Lead, Dissolved	200.8	=	0.071	0.015	0.2	ug/L	J	FGL Env.	2/1/19	2/2/19
DW37	SC-1	3/18/19	Lead, Dissolved	200.8	<	0.015	0.015	0.2	ug/L	ND, U	FGL Env.	3/25/19	3/25/19
DW37	SC-1R	3/18/19	Lead, Dissolved	200.8	=	0.027	0.015	0.2	ug/L	J	FGL Env.	3/25/19	3/25/19

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW38	SC-1	6/19/19	Lead, Dissolved	200.8	<	0.09	0.09	0.2	ug/L	ND, U1	FGL Env.	6/25/19	6/25/19
DW38	SC-1R	6/19/19	Lead, Dissolved	200.8	<	0.09	0.09	0.2	ug/L	ND	FGL Env.	6/25/19	6/25/19
SE68	SC-1	11/29/18	Lead, Dissolved	200.8	=	0.908	0.015	0.2	ug/L	1	FGL Env.	12/3/18	12/4/18
SE68	SC-1R	11/29/18	Lead, Dissolved	200.8	=	0.132	0.015	0.2	ug/L	J1	FGL Env.	12/3/18	12/4/18
SE69	SC-1	12/16/18	Lead, Dissolved	200.8	=	0.322	0.015	0.2	ug/L	J	FGL Env.	12/24/18	12/26/18
SE69	SC-1R	12/16/18	Lead, Dissolved	200.8	=	0.208	0.015	0.2	ug/L	J	FGL Env.	12/24/18	12/26/18
SE70	SC-1	5/15/19	Lead, Dissolved	200.8	=	0.577	0.09	0.2	ug/L		FGL Env.	5/22/19	5/22/19
SE70	SC-1R	5/15/19	Lead, Dissolved	200.8	<	0.09	0.09	0.2	ug/L	U, ND	FGL Env.	5/22/19	5/22/19
DW35	SC-1	9/24/18	Lead, Total	3010	=	0.769	0.013	0.2	ug/L		FGL Env.	9/26/17	10/1/18
DW35	SC-1R	9/24/18	Lead, Total	3010	=	2.59	0.013	0.2	ug/L		FGL Env.	9/26/18	10/1/18
DW36	SC-1	1/30/19	Lead, Total	3010	=	2.62	0.013	0.2	ug/L		FGL Env.	2/4/19	2/7/19
DW36	SC-1R	1/30/19	Lead, Total	3010	=	0.817	0.013	0.2	ug/L		FGL Env.	2/4/19	2/7/19
DW37	SC-1	3/18/19	Lead, Total	3010	=	1.1	0.013	0.2	ug/L		FGL Env.	3/20/19	3/27/19
DW37	SC-1R	3/18/19	Lead, Total	3010	=	1.78	0.013	0.2	ug/L		FGL Env.	3/20/19	3/27/19
DW38	SC-1	6/19/19	Lead, Total	3010	=	1.1	0.016	1	ug/L		FGL Env.	6/27/19	6/27/19
DW38	SC-1R	6/19/19	Lead, Total	3010	=	2.2	0.016	1	ug/L		FGL Env.	6/27/19	6/27/19
SE68	SC-1	11/29/18	Lead, Total	200.8	=	15.7	0.013	0.4	ug/L		FGL Env.	12/6/18	12/8/18
SE68	SC-1R	11/29/18	Lead, Total	200.8	=	2.27	0.013	0.2	ug/L		FGL Env.	12/6/18	12/6/18
SE69	SC-1	12/16/18	Lead, Total	200.8	=	8	0.013	0.2	ug/L		FGL Env.	1/3/19	1/13/19
SE69	SC-1R	12/16/18	Lead, Total	200.8	=	3.42	0.013	0.2	ug/L		FGL Env.	1/3/19	1/13/19
SE70	SC-1	5/15/19	Lead, Total	200.8	=	21.3	0.013	0.2	ug/L		FGL Env.	5/20/19	5/28/19
SE70	SC-1R	5/15/19	Lead, Total	200.8	=	4.04	0.013	0.2	ug/L		FGL Env.	5/20/19	5/28/19
DW35	SC-1	9/24/18	Zinc, Total	3010	=	28.7	0.1	10	ug/L	P	FGL Env.	9/26/17	10/1/18
DW35	SC-1R	9/24/18	Zinc, Total	3010	=	12.4	0.1	10	ug/L	P	FGL Env.	9/26/18	10/1/18
DW36	SC-1	1/30/19	Zinc, Total	3010	=	51.1	0.1	10	ug/L		FGL Env.	2/4/19	2/7/19
DW36	SC-1R	1/30/19	Zinc, Total	3010	=	27.3	0.1	10	ug/L		FGL Env.	2/4/19	2/7/19
DW37	SC-1	3/18/19	Zinc, Total	3010	=	63.5	0.1	10	ug/L		FGL Env.	3/20/19	3/27/19
DW37	SC-1R	3/18/19	Zinc, Total	3010	=	38.6	0.1	10	ug/L		FGL Env.	3/20/19	3/27/19
DW38	SC-1	6/19/19	Zinc, Total	3010	=	72.8	0.11	50	ug/L	P	FGL Env.	6/27/19	6/27/19
DW38	SC-1R	6/19/19	Zinc, Total	3010	=	67.9	0.11	50	ug/L	P	FGL Env.	6/27/19	6/27/19
SE68	SC-1	11/29/18	Zinc, Total	200.8	=	295	0.1	250	ug/L		FGL Env.	12/6/18	12/10/18
SE68	SC-1R	11/29/18	Zinc, Total	200.8	=	26.4	0.1	10	ug/L		FGL Env.	12/6/18	12/6/18
SE69	SC-1	12/16/18	Zinc, Total	200.8	=	103	0.1	10	ug/L	P	FGL Env.	1/3/19	1/13/19
SE69	SC-1R	12/16/18	Zinc, Total	200.8	=	49.4	0.1	10	ug/L	P	FGL Env.	1/3/19	1/13/19
SE70	SC-1	5/15/19	Zinc, Total	200.8	=	231	0.1	10	ug/L	P	FGL Env.	5/20/19	5/28/19
SE70	SC-1R	5/15/19	Zinc, Total	200.8	=	32.7	0.42	10	ug/L		FGL Env.	5/20/19	5/22/19
DW35	SC-1	9/24/18	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Chlorpyrifos	EPA 8270M_NCI	<	0.5	1	1	ng/L	ND	Caltest	9/25/18	10/5/18

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW35	SC-55	9/24/18	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Chlorpyrifos	EPA 8270M_NCI	<	0.6	0.6	1.1	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-56R	9/24/18	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Chlorpyrifos	EPA 8270M_NCI	=	1.1	0.5	1	ng/L		Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Chlorpyrifos	EPA 8270M_NCI	=	0.6	0.5	1	ng/L	J	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Chlorpyrifos	EPA 8270M_NCI	=	0.5	0.5	1	ng/L	J	Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Chlorpyrifos	EPA 8270M_NCI	=	16	0.5	1	ng/L		Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Chlorpyrifos	EPA 8270M_NCI	=	8.6	0.5	1	ng/L		Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Chlorpyrifos	EPA 8270M_NCI	=	3.3	2	5	ng/L	J	Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Chlorpyrifos	EPA 8270M_NCI	=	2.6	0.5	1	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Chlorpyrifos	EPA 8270M_NCI	=	4.4	0.5	1	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Chlorpyrifos	EPA 8270M_NCI	=	1.8	0.5	1	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Chlorpyrifos	EPA 8270M_NCI	=	4.2	0.5	1	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Chlorpyrifos	EPA 8270M_NCI	=	1	0.5	1	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Chlorpyrifos	EPA 8270M_NCI	=	13	0.5	1	ng/L		Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Chlorpyrifos	EPA 8270M_NCI	=	2.4	0.5	1	ng/L		Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Chlorpyrifos	EPA 8270M_NCI	=	1.6	0.5	1	ng/L		Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Chlorpyrifos	EPA 8270M_NCI	<	2	2	5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Chlorpyrifos	EPA 8270M_NCI	<	2	2	5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Chlorpyrifos	EPA 8270M_NCI	<	5	5	10	ng/L	ND	Caltest	12/19/18	1/2/19
SE69	SC-55R	12/16/18	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Chlorpyrifos	EPA 8270M_NCI	<	2	2	5	ng/L	ND	Caltest	12/19/18	1/1/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE69	SC-56R	12/16/18	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Chlorpyrifos	EPA 8270M_NCI	=	0.9	0.5	1	ng/L	J	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Chlorpyrifos	EPA 8270M_NCI	=	0.8	0.5	1	ng/L	J	Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Chlorpyrifos	EPA 8270M_NCI	<	2	2	5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Chlorpyrifos	EPA 8270M_NCI	<	3	3	5.7	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Chlorpyrifos	EPA 8270M_NCI	<	2	2	5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Chlorpyrifos	EPA 8270M_NCI	<	2	2	5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Chlorpyrifos	EPA 8270M_NCI	<	0.5	0.5	1	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Chlorpyrifos	EPA 8270M_NCI	=	0.6	0.5	1	ng/L	J	Caltest	5/17/19	5/25/19
DW35	SC-1	9/24/18	Allethrin	EPA 8270M_NCI	<	0.1	0.5	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Allethrin	EPA 8270M_NCI	<	0.1	0.5	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Allethrin	EPA 8270M_NCI	<	0.6	0.6	2.8	ng/L	ND, 1,2	Caltest	9/25/18	9/29/18
DW35	SC-56R	9/24/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Allethrin	EPA 8270M_NCI	<	0.5	0.5	2.5	ng/L	ND, 1	Caltest	11/30/18	12/8/18

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE68	SC-1R	11/29/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Allethrin	EPA 8270M_NCI	<	0.5	0.5	2.5	ng/L	ND, 1	Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Allethrin	EPA 8270M_NCI	<	0.5	0.5	2.5	ng/L	ND, 1	Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Allethrin	EPA 8270M_NCI	<	1	1	5	ng/L	ND, 1	Caltest	12/19/18	1/2/19
SE69	SC-55R	12/16/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Allethrin	EPA 8270M_NCI	<	0.5	0.5	2.5	ng/L	ND, 1	Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Allethrin	EPA 8270M_NCI	<	0.5	0.5	2.5	ng/L	ND, 1	Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Allethrin	EPA 8270M_NCI	<	0.6	0.6	2.8	ng/L	ND, 2,1	Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Allethrin	EPA 8270M_NCI	<	0.5	0.5	2.5	ng/L	ND, 1	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Allethrin	EPA 8270M_NCI	<	0.5	0.5	2.5	ng/L	ND, 1	Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Allethrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
DW35	SC-1	9/24/18	Bifenthrin	EPA 8270M_NCI	=	0.2	0.1	0.5	ng/L	J	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Bifenthrin	EPA 8270M_NCI	=	0.4	0.1	0.5	ng/L	J	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Bifenthrin	EPA 8270M_NCI	=	3	0.1	0.5	ng/L		Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Bifenthrin	EPA 8270M_NCI	=	0.7	0.1	0.5	ng/L		Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Bifenthrin	EPA 8270M_NCI	=	13	0.6	2.8	ng/L		Caltest	9/25/18	9/29/18
DW35	SC-56R	9/24/18	Bifenthrin	EPA 8270M_NCI	=	0.1	0.1	0.5	ng/L	J	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Bifenthrin	EPA 8270M_NCI	=	1	0.1	0.5	ng/L		Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Bifenthrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Bifenthrin	EPA 8270M_NCI	=	21	0.1	0.5	ng/L		Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Bifenthrin	EPA 8270M_NCI	=	0.5	0.1	0.5	ng/L		Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Bifenthrin	EPA 8270M_NCI	=	11	0.1	0.5	ng/L		Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Bifenthrin	EPA 8270M_NCI	=	0.4	0.1	0.5	ng/L	J	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Bifenthrin	EPA 8270M_NCI	=	0.3	0.1	0.5	ng/L	J	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Bifenthrin	EPA 8270M_NCI	=	0.6	0.1	0.5	ng/L		Caltest	3/21/19	3/30/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW37	SC-55	3/18/19	Bifenthrin	EPA 8270M_NCI	=	4.7	0.1	0.5	ng/L		Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Bifenthrin	EPA 8270M_NCI	=	0.7	0.1	0.5	ng/L		Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Bifenthrin	EPA 8270M_NCI	=	7.7	0.1	0.5	ng/L		Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Bifenthrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Bifenthrin	EPA 8270M_NCI	=	0.8	0.1	0.5	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Bifenthrin	EPA 8270M_NCI	=	0.8	0.1	0.5	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Bifenthrin	EPA 8270M_NCI	=	14	0.1	0.5	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Bifenthrin	EPA 8270M_NCI	=	0.6	0.1	0.5	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Bifenthrin	EPA 8270M_NCI	=	17	0.1	0.5	ng/L		Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Bifenthrin	EPA 8270M_NCI	<	0.1	0.1	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Bifenthrin	EPA 8270M_NCI	=	1.9	0.1	0.5	ng/L		Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Bifenthrin	EPA 8270M_NCI	=	1.2	0.1	0.5	ng/L		Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Bifenthrin	EPA 8270M_NCI	=	13	0.5	2.5	ng/L		Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Bifenthrin	EPA 8270M_NCI	=	5	0.1	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Bifenthrin	EPA 8270M_NCI	=	24	0.1	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Bifenthrin	EPA 8270M_NCI	=	6.1	0.1	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Bifenthrin	EPA 8270M_NCI	=	16	0.1	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Bifenthrin	EPA 8270M_NCI	=	2.1	0.1	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Bifenthrin	EPA 8270M_NCI	=	1.6	0.1	0.5	ng/L		Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Bifenthrin	EPA 8270M_NCI	=	0.4	0.1	0.5	ng/L	J	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Bifenthrin	EPA 8270M_NCI	=	0.3	0.1	0.5	ng/L	J	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Bifenthrin	EPA 8270M_NCI	=	12	0.5	2.5	ng/L		Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Bifenthrin	EPA 8270M_NCI	=	3.8	0.5	2.5	ng/L		Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Bifenthrin	EPA 8270M_NCI	=	29	1	5	ng/L		Caltest	12/19/18	1/2/19
SE69	SC-55R	12/16/18	Bifenthrin	EPA 8270M_NCI	=	1.7	0.1	0.5	ng/L		Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Bifenthrin	EPA 8270M_NCI	=	6.3	0.5	2.5	ng/L		Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Bifenthrin	EPA 8270M_NCI	=	0.9	0.1	0.5	ng/L		Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Bifenthrin	EPA 8270M_NCI	=	0.4	0.1	0.5	ng/L	J	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Bifenthrin	EPA 8270M_NCI	=	8.4	0.1	0.5	ng/L		Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Bifenthrin	EPA 8270M_NCI	=	14	0.1	0.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Bifenthrin	EPA 8270M_NCI	=	32	0.5	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Bifenthrin	EPA 8270M_NCI	=	1.3	0.1	0.5	ng/L		Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Bifenthrin	EPA 8270M_NCI	=	13	0.6	2.8	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Bifenthrin	EPA 8270M_NCI	=	4.2	0.5	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Bifenthrin	EPA 8270M_NCI	=	25	0.5	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Bifenthrin	EPA 8270M_NCI	=	1	0.1	0.5	ng/L		Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Bifenthrin	EPA 8270M_NCI	=	10	0.1	0.5	ng/L		Caltest	5/17/19	5/25/19
DW35	SC-1	9/24/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW35	SC-1R	9/24/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Cyfluthrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Cyfluthrin	EPA 8270M_NCI	=	0.7	0.2	0.5	ng/L		Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Cyfluthrin	EPA 8270M_NCI	=	2.1	0.2	0.6	ng/L		Caltest	9/25/18	10/4/18
DW35	SC-56R	9/24/18	Cyfluthrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Cyfluthrin	EPA 8270M_NCI	=	0.2	0.2	0.5	ng/L	J	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Cyfluthrin	EPA 8270M_NCI	=	2.5	0.2	0.5	ng/L		Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Cyfluthrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Cyfluthrin	EPA 8270M_NCI	=	0.2	0.2	0.5	ng/L	J	Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Cyfluthrin	EPA 8270M_NCI	=	1.5	0.2	0.5	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Cyfluthrin	EPA 8270M_NCI	=	0.8	0.2	0.5	ng/L		Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Cyfluthrin	EPA 8270M_NCI	=	1.8	1	2.5	ng/L	J	Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Cyfluthrin	EPA 8270M_NCI	=	0.5	0.2	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Cyfluthrin	EPA 8270M_NCI	=	1	0.2	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Cyfluthrin	EPA 8270M_NCI	=	0.4	0.2	0.5	ng/L	J	Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Cyfluthrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Cyfluthrin	EPA 8270M_NCI	=	6.1	1	2.5	ng/L		Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Cyfluthrin	EPA 8270M_NCI	=	2.5	1	2.5	ng/L		Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Cyfluthrin	EPA 8270M_NCI	=	1.1	1	2.5	ng/L	J, 1	Caltest	12/19/18	1/1/19
SE69	SC-55R	12/16/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE69	SC-56	12/16/18	Cyfluthrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Cyfluthrin	EPA 8270M_NCI	=	20	1	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Cyfluthrin	EPA 8270M_NCI	=	2.9	1	2.8	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Cyfluthrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Cyfluthrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Cyfluthrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
DW35	SC-1	9/24/18	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Cypermethrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Cypermethrin	EPA 8270M_NCI	=	0.8	0.2	0.6	ng/L		Caltest	9/25/18	10/4/18
DW35	SC-56R	9/24/18	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Cypermethrin	EPA 8270M_NCI	=	1.7	0.2	0.5	ng/L		Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Cypermethrin	EPA 8270M_NCI	=	5.3	0.2	0.5	ng/L		Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Cypermethrin	EPA 8270M_NCI	=	0.9	0.2	0.5	ng/L		Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Cypermethrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Cypermethrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Cypermethrin	EPA 8270M_NCI	=	0.5	0.2	0.5	ng/L		Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Cypermethrin	EPA 8270M_NCI	=	0.7	0.2	0.5	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Cypermethrin	EPA 8270M_NCI	=	2.8	0.2	0.5	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Cypermethrin	EPA 8270M_NCI	=	0.9	0.2	0.5	ng/L		Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/8/18

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE68	SC-1	11/29/18	Cypermethrin	EPA 8270M_NCI	=	6.1	1	2.5	ng/L		Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Cypermethrin	EPA 8270M_NCI	=	0.8	0.2	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Cypermethrin	EPA 8270M_NCI	=	1.7	0.2	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Cypermethrin	EPA 8270M_NCI	=	0.8	0.2	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Cypermethrin	EPA 8270M_NCI	=	1.5	0.2	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Cypermethrin	EPA 8270M_NCI	=	0.7	0.2	0.5	ng/L		Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Cypermethrin	EPA 8270M_NCI	=	2.3	1	2.5	ng/L	J	Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Cypermethrin	EPA 8270M_NCI	=	1.5	1	2.5	ng/L	J	Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Cypermethrin	EPA 8270M_NCI	=	3.8	1	2.5	ng/L		Caltest	12/19/18	1/1/19
SE69	SC-55R	12/16/18	Cypermethrin	EPA 8270M_NCI	=	0.4	0.2	0.5	ng/L	J	Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Cypermethrin	EPA 8270M_NCI	=	2.1	1	2.5	ng/L	J	Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Cypermethrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Cypermethrin	EPA 8270M_NCI	=	0.5	0.2	0.5	ng/L		Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Cypermethrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Cypermethrin	EPA 8270M_NCI	=	4.3	1	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Cypermethrin	EPA 8270M_NCI	=	1.5	1	2.8	ng/L	J	Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Cypermethrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Cypermethrin	EPA 8270M_NCI	=	3.3	1	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Cypermethrin	EPA 8270M_NCI	=	0.2	0.2	0.5	ng/L	J	Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Cypermethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
DW35	SC-1	9/24/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	0.5	0.2	1	ng/L	J	Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	1	0.2	1.1	ng/L	J	Caltest	9/25/18	10/4/18
DW35	SC-56R	9/24/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	0.5	0.2	1	ng/L	J	Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	7.3	0.2	1	ng/L		Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	0.6	0.2	1	ng/L	J	Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	3/21/19	3/28/19

Ambient Monitoring Program 2018-2019 Data

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW37	SC-1R	3/18/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	0.3	0.2	1	ng/L	J	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	6.8	0.2	1	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	2.7	1	5	ng/L	J	Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	1	0.2	1	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	9.4	0.2	1	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	9.6	1	5	ng/L		Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-55R	12/16/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	0.8	0.2	1	ng/L	J	Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	11	1	5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	1	1	5.7	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	=	6	1	5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Deltamethrin:Tralomethrin	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	5/17/19	5/25/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW35	SC-1	9/24/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	=	0.2	0.2	1	ng/L	J	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1.1	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-56R	9/24/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	=	4.3	0.2	1	ng/L		Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	=	0.4	0.2	1	ng/L		Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	=	0.5	0.2	1	ng/L	J	Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	=	15	0.2	1	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	=	0.3	0.2	1	ng/L	J	Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	=	0.4	0.2	1	ng/L	J	Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	=	0.3	0.2	1	ng/L	J	Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	=	1	1	5	ng/L	J	Caltest	12/19/18	1/1/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE69	SC-55R	12/16/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	1	1	5.7	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	1	1	5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Esfenvalerate:Fenvalerate	EPA 8270M_NCI	<	0.2	0.2	1	ng/L	ND	Caltest	5/17/19	5/25/19
DW35	SC-1	9/24/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Fenpropathrin	EPA 8270M_NCI	<	1	1	2.8	ng/L	ND	Caltest	9/25/18	9/29/18
DW35	SC-56R	9/24/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Fenpropathrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Fenpropathrin	EPA 8270M_NCI	=	1.3	0.2	0.5	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Fenpropathrin	EPA 8270M_NCI	=	0.7	0.2	0.5	ng/L		Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Fenpropathrin	EPA 8270M_NCI	=	1.4	0.2	0.5	ng/L		Caltest	11/30/18	12/8/18

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE68	NW-RAIN	11/29/18	Fenpropathrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Fenpropathrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Fenpropathrin	EPA 8270M_NCI	=	0.4	0.2	0.5	ng/L	J	Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Fenpropathrin	EPA 8270M_NCI	=	0.4	0.2	0.5	ng/L	J	Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Fenpropathrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Fenpropathrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Fenpropathrin	EPA 8270M_NCI	<	2	2	5	ng/L	ND	Caltest	12/19/18	1/2/19
SE69	SC-55R	12/16/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Fenpropathrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Fenpropathrin	EPA 8270M_NCI	=	21	0.2	0.5	ng/L		Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Fenpropathrin	EPA 8270M_NCI	=	2.5	0.2	0.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Fenpropathrin	EPA 8270M_NCI	=	5.4	1	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Fenpropathrin	EPA 8270M_NCI	=	4.5	1	2.8	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Fenpropathrin	EPA 8270M_NCI	=	1.2	1	2.5	ng/L	J	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Fenpropathrin	EPA 8270M_NCI	=	4	1	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Fenpropathrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Fenpropathrin	EPA 8270M_NCI	=	2.8	0.2	0.5	ng/L		Caltest	5/17/19	5/25/19
DW35	SC-1	9/24/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Lambda-Cyhalothrin	EPA 8270M_NCI	=	1.3	1	2.8	ng/L	J	Caltest	9/25/18	9/29/18
DW35	SC-56R	9/24/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	1.7	0.2	0.5	ng/L		Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW37	SC-1	3/18/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND, 1	Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	4	0.2	0.5	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	0.9	0.2	0.5	ng/L		Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Lambda-Cyhalothrin	EPA 8270M_NCI	=	0.4	0.2	0.5	ng/L	J	Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Lambda-Cyhalothrin	EPA 8270M_NCI	=	0.3	0.2	0.5	ng/L	J	Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Lambda-Cyhalothrin	EPA 8270M_NCI	=	1.4	0.2	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Lambda-Cyhalothrin	EPA 8270M_NCI	=	0.5	0.2	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Lambda-Cyhalothrin	EPA 8270M_NCI	=	1.1	0.2	0.5	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Lambda-Cyhalothrin	EPA 8270M_NCI	=	0.4	0.2	0.5	ng/L	J	Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Lambda-Cyhalothrin	EPA 8270M_NCI	=	2.6	1	2.5	ng/L		Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Lambda-Cyhalothrin	EPA 8270M_NCI	=	2.5	2	5	ng/L	J	Caltest	12/19/18	1/2/19
SE69	SC-55R	12/16/18	Lambda-Cyhalothrin	EPA 8270M_NCI	=	1	0.2	0.5	ng/L		Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	3.9	0.2	0.5	ng/L		Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	1.5	0.2	0.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	5.6	1	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	4.6	1	2.8	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	1	1	2.5	ng/L	J	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	3.4	1	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Lambda-Cyhalothrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE70	SC-RAIN	5/16/19	Lambda-Cyhalothrin	EPA 8270M_NCI	=	1.6	0.2	0.5	ng/L		Caltest	5/17/19	5/25/19
DW35	SC-1	9/24/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Permethrin	EPA 8270M_NCI	<	10	10	28	ng/L	ND	Caltest	9/25/18	9/29/18
DW35	SC-56R	9/24/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Permethrin	EPA 8270M_NCI	=	18	2	10	ng/L		Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Permethrin	EPA 8270M_NCI	=	8.5	2	10	ng/L	J	Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Permethrin	EPA 8270M_NCI	=	14	2	10	ng/L		Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Permethrin	EPA 8270M_NCI	=	4.2	2	10	ng/L	J	Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND, 1	Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Permethrin	EPA 8270M_NCI	=	12	2	10	ng/L		Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Permethrin	EPA 8270M_NCI	=	6.2	2	10	ng/L	J	Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Permethrin	EPA 8270M_NCI	=	12	10	25	ng/L	J	Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Permethrin	EPA 8270M_NCI	=	24	2	10	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Permethrin	EPA 8270M_NCI	=	26	2	10	ng/L		Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Permethrin	EPA 8270M_NCI	<	10	10	25	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Permethrin	EPA 8270M_NCI	<	10	10	25	ng/L	ND	Caltest	12/19/18	1/1/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE69	SC-55	12/16/18	Permethrin	EPA 8270M_NCI	<	20	20	50	ng/L	ND	Caltest	12/19/18	1/2/19
SE69	SC-55R	12/16/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Permethrin	EPA 8270M_NCI	<	10	10	25	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Permethrin	EPA 8270M_NCI	<	10	10	25	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Permethrin	EPA 8270M_NCI	<	10	10	28	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Permethrin	EPA 8270M_NCI	<	10	10	25	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Permethrin	EPA 8270M_NCI	<	10	10	25	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Permethrin	EPA 8270M_NCI	<	2	2	10	ng/L	ND	Caltest	5/17/19	5/25/19
DW35	SC-1	9/24/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.6	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-56R	9/24/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-56R	1/30/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE68	NE-RAIN	11/29/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Tau-Fluvalinate	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Tau-Fluvalinate	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Tau-Fluvalinate	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Tau-Fluvalinate	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-55R	12/16/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Tau-Fluvalinate	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Tau-Fluvalinate	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Tau-Fluvalinate	EPA 8270M_NCI	<	1	1	2.8	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Tau-Fluvalinate	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Tau-Fluvalinate	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56R	5/15/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Tau-Fluvalinate	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
DW35	SC-1	9/24/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-1R	9/24/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-55	9/24/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/4/18
DW35	SC-55R	9/24/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW35	SC-56	9/24/18	Tetramethrin	EPA 8270M_NCI	<	1	1	2.8	ng/L	ND	Caltest	9/25/18	9/29/18
DW35	SC-56R	9/24/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	9/25/18	10/5/18
DW36	SC-1	1/30/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW36	SC-1R	1/30/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55	1/30/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-55R	1/30/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/10/19
DW36	SC-56	1/30/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
DW36	SC-56R	1/30/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	2/1/19	2/8/19
DW37	SC-1	3/18/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-1R	3/18/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-55	3/18/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-55R	3/18/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/30/19
DW37	SC-56	3/18/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW37	SC-56R	3/18/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	3/21/19	3/28/19
DW38	SC-1	6/19/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-1R	6/19/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55	6/19/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-55R	6/19/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
DW38	SC-56	6/19/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/28/19
DW38	SC-56R	6/19/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	6/21/19	6/29/19
SE68	NE-RAIN	11/29/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	NW-RAIN	11/29/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1	11/29/18	Tetramethrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	11/30/18	12/8/18
SE68	SC-1R	11/29/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-55	11/29/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-55R	11/29/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56	11/29/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-56R	11/29/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE68	SC-RAIN	11/29/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	11/30/18	12/7/18
SE69	NE-RAIN	12/17/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	NW-RAIN	12/16/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-1	12/16/18	Tetramethrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-1R	12/16/18	Tetramethrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-55	12/16/18	Tetramethrin	EPA 8270M_NCI	<	2	2	5	ng/L	ND	Caltest	12/19/18	1/2/19
SE69	SC-55R	12/16/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-56	12/16/18	Tetramethrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	12/19/18	1/1/19
SE69	SC-56R	12/16/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE69	SC-RAIN	12/16/18	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	12/19/18	12/21/19
SE70	NE-RAIN	5/16/19	Tetramethrin	EPA 8270M_NCI	=	17	0.2	0.5	ng/L		Caltest	5/17/19	5/25/19
SE70	NW-RAIN	5/16/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-1	5/15/19	Tetramethrin	EPA 8270M_NCI	=	28	1	2.5	ng/L		Caltest	5/17/19	5/25/19
SE70	SC-1R	5/15/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-55	5/15/19	Tetramethrin	EPA 8270M_NCI	<	1	1	2.8	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-55R	5/15/19	Tetramethrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	5/17/19	5/25/19
SE70	SC-56	5/15/19	Tetramethrin	EPA 8270M_NCI	<	1	1	2.5	ng/L	ND	Caltest	5/17/19	5/25/19

Event	Site Code	Date Sampled	Analyte	Analytical Method	Q	Result	MDL	RL/ML	Units	Flag	Lab Name	Prep Date	Analysis Date
SE70	SC-56R	5/15/19	Tetramethrin	EPA 8270M_NCI	<	0.2	0.2	0.5	ng/L	ND	Caltest	5/17/19	5/26/19
SE70	SC-RAIN	5/16/19	Tetramethrin	EPA 8270M_NCI	=	1.1	0.2	0.5	ng/L		Caltest	5/17/19	5/25/19

Appendix C
2018-2019 Data Summary Tables

This page intentionally left blank for printing purposes

SMITH CANAL 2018-2019 DATA FOR POLLUTANTS OF CONCERN

Fecal Indicator Bacteria

Event	SC-1	SC-1R	SC-55	SC-55R	SC-56	SC-56R	WQO
***E. Coli* (MPN/100mL)**							
DW35	<10	<10	20	20	52	73	235
DW36	24,196	717	10	52	10	74	235
DW37	107.1	4.1	<1	5.2	1	4.1	235
DW38	2,419.6	2	8.6	26.2	16.8	35.5	235
SE68	2,419.6	488.4	2,419.6	1,553.1	2,419.6	39.5	235
SE69	6,488	3,255	9,208	1,187	8,164	857	235
SE70	2,420	490	2,420	2,420	2,420	160	235
Fecal Coliform (MPN/100mL)							
DW35	<18	170	490	130	330	68	400
DW36	790,000	1,700	45	110	40	20	400
DW37	1,200	110	<18	45	68	230	400
DW38	79,000	78	78	330	22,000	230	400
SE68	230,000	130,000	79,000	230,000	490,000	4,900	400
SE69	7,900	17,000	11,000	2,300	33,000	1,300	400
SE70	13,000,000	6,300	3,500,000	110,000	130,000	3,300	400

This page intentionally left blank for printing purposes

Mercury

Event	SC-1	SC-1R	SC-55	SC-55R	SC-56	SC-56R	NE-RAIN	NW-RAIN	SC-RAIN
Methyl Mercury, Total (ng/L)									
DW35	<0.02	<0.02	0.11	<0.02	0.32	<0.02	-	-	-
DW36	0.02	0.04	0.1	0.05	0.08	0.07	-	-	-
DW37	0.05	0.06	0.06	<0.02	0.07	0.06	-	-	-
DW38	0.07	0.04	1.0	0.05	0.14	0.06	-	-	-
SE68	<0.02	0.07	0.09	0.09	0.15	0.03	0.06	<0.02	0.03
SE69	0.09	0.07	0.1	0.07	0.12	0.05	0.04	0.03	0.03
SE70	0.43	0.06	0.16	0.16	0.24	0.05	0.04	0.07	0.05
Mercury, Total (ng/L)									
DW35	1.0	1.8	22	2.1	49	0.86	-	-	-
DW36	830	1,300	76	1.7	8.0	2.6	-	-	-
DW37	5.3	3.3	6.4	2.6	6.5	2.2	-	-	-
DW38	2.1	1.6	77	1.8	2.6	1.6	-	-	-
SE68	7.0	3.9	11	8.7	15	1.8	2.2	1.3	1.8
SE69	8.3	3.8	17	2.3	8.7	1.6	2.2	2.6	3.4
SE70	21	5.4	20	24	13	3.3	4.6	3.2	3.5

Dissolved Oxygen

Event	SC-1	SC-1R	SC-55	SC-55R	SC-56	SC-56R	NE-RAIN	NW-RAIN	SC-RAIN	WQO
Dissolved Oxygen (mg/L)										
DW35	6.4	7.1	3.78	7.16	2.56	8.06	-	-	-	>6
DW36	8.66	9.48	5.12	7.67	5.17	7.58	-	-	-	>5
DW37	7.74	12.24	7.94	10.29	5.21	10.07	-	-	-	>5
DW38	6	6.29	4.04	6.6	3.08	8.08	-	-	-	>5
SE68	10.18	10.25	7.75	6.04	8.33	6.86	11.49	9.58	10.77	>6
SE69	8.49	6.51	9.82	5.06	8.12	7.13	10.67	10.24	7.93	>5
SE70	8.03	7.75	5.8	6.42	5.86	7.4	6.99	9.27	8.3	>5

Chlorpyrifos

Event	SC-1	SC-1R	SC-55	SC-55R	SC-56	SC-56R	NE-RAIN	NW-RAIN	SC-RAIN	WQO
Chlorpyrifos (ng/L)										
DW35	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	-	-	-	15
DW36	<0.5	<0.5	1.1	<0.5	<0.5	0.6	-	-	-	15
DW37	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	15
DW38	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	-	-	-	15
SE68	3.3	2.6	4.4	1.8	4.2	1	16	8.6	13	15
SE69	<2	<2	<5	<0.5	<2	<0.5	2.4	1.6	0.9	15
SE70	<2	<0.5	<3	<2	<2	<0.5	0.8	<0.5	0.6	15

Pyrethroids

Event	SC-1	SC-1R	SC-55	SC-55R	SC-56	SC-56R	NE-RAIN	NW-RAIN	SC-RAIN
Allethrin (ng/L)									
DW35	<0.1	<0.1	<0.1	<0.1	<0.6	<0.1	-	-	-
DW36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
DW37	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
DW38	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
SE68	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SE69	<0.5	<0.5	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
SE70	<0.5	<0.1	<0.6	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1
Bifenthrin (ng/L)									
DW35	0.2	0.4	3	0.7	13	0.1	-	-	-
DW36	1	<0.1	21	0.5	11	0.4	-	-	-
DW37	0.3	0.6	4.7	0.7	7.7	<0.1	-	-	-
DW38	0.8	0.8	14	0.6	17	<0.1	-	-	-
SE68	13	5	24	6.1	16	2.1	1.9	1.2	1.6
SE69	12	3.8	29	1.7	6.3	0.9	0.4	0.3	0.4
SE70	32	1.3	13	4.2	25	1	8.4	14	10

Event	SC-1	SC-1R	SC-55	SC-55R	SC-56	SC-56R	NE-RAIN	NW-RAIN	SC-RAIN
Cyfluthrin (ng/L)									
DW35	<0.2	<0.2	0.3	0.7	2.1	0.3	-	-	-
DW36	<0.2	0.2	2.5	<0.2	0.3	<0.2	-	-	-
DW37	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	-	-	-
DW38	<0.2	<0.2	1.5	<0.2	0.8	<0.2	-	-	-
SE68	1.8	0.5	1	0.4	0.3	<0.2	<0.2	<0.2	<0.2
SE69	6.1	2.5	1.1	<0.2	<1	<0.2	<0.2	<0.2	<0.2
SE70	20	<0.2	2.9	<1	<1	<0.2	<0.2	<0.2	<0.2
Cypermethrin (ng/L)									
DW35	<0.2	<0.2	0.3	<0.2	0.8	<0.2	-	-	-
DW36	1.7	<0.2	5.3	<0.2	0.9	0.3	-	-	-
DW37	0.3	<0.2	<0.2	<0.2	0.5	<0.2	-	-	-
DW38	0.7	<0.2	2.8	<0.2	0.9	<0.2	-	-	-
SE68	6.1	0.8	1.7	0.8	1.5	<0.2	<0.2	<0.2	0.7
SE69	2.3	1.5	3.8	0.4	2.1	0.3	<0.2	<0.2	<0.2
SE70	4.3	<0.2	1.5	<1	3.3	0.2	0.5	0.3	<0.2
Deltamethrin:Tralomethrin (ng/L)									
DW35	<0.2	<0.2	<0.2	0.5	1	<0.2	-	-	-
DW36	0.5	<0.2	7.3	<0.2	0.6	<0.2	-	-	-
DW37	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	-	-	-
DW38	<0.2	<0.2	6.8	<0.2	<0.2	<0.2	-	-	-
SE68	2.7	1	9.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SE69	9.6	<1	<1	0.8	<1	<0.2	<0.2	<0.2	<0.2
SE70	11	<0.2	<1	<1	6	<0.2	<0.2	<0.2	<0.2

Event	SC-1	SC-1R	SC-55	SC-55R	SC-56	SC-56R	NE-RAIN	NW-RAIN	SC-RAIN
Esfenvalerate:Fenvalerate (ng/L)									
DW35	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	-	-	-
DW36	<0.2	<0.2	4.3	<0.2	0.4	<0.2	-	-	-
DW37	<0.2	<0.2	0.5	<0.2	<0.2	<0.2	-	-	-
DW38	<0.2	<0.2	15	<0.2	<0.2	<0.2	-	-	-
SE68	<1	0.3	0.4	<0.2	0.3	<0.2	<0.2	<0.2	<0.2
SE69	<1	<1	1	<0.2	<1	<0.2	<0.2	<0.2	<0.2
SE70	<1	<0.2	<1	<1	<1	<0.2	<0.2	<0.2	<0.2
Fenpropathrin (ng/L)									
DW35	<0.2	<0.2	<0.2	<0.2	<1	<0.2	-	-	-
DW36	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	-	-	-
DW37	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
DW38	<0.2	<0.2	1.3	<0.2	0.7	<0.2	-	-	-
SE68	<1	<0.2	<0.2	<0.2	0.4	<0.2	1.4	0.3	0.4
SE69	<1	<1	<2	<0.2	<1	<0.2	<0.2	<0.2	<0.2
SE70	5.4	<0.2	4.5	1.2	4	<0.2	21	2.5	2.8
Lambda-Cyhalothrin (ng/L)									
DW35	<0.2	<0.2	<0.2	<0.2	1.3	<0.2	-	-	-
DW36	<0.2	<0.2	1.7	<0.2	0.3	<0.2	-	-	-
DW37	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
DW38	<0.2	<0.2	4	<0.2	0.9	<0.2	-	-	-
SE68	<1	<0.2	1.4	0.5	1.1	<0.2	0.4	0.3	0.4
SE69	2.6	<1	2.5	1	<1	<0.2	<0.2	<0.2	<0.2
SE70	5.6	<0.2	4.6	1	3.4	<0.2	3.9	1.5	1.6

Event	SC-1	SC-1R	SC-55	SC-55R	SC-56	SC-56R	NE-RAIN	NW-RAIN	SC-RAIN
Permethrin (ng/L)									
DW35	<2	<2	<2	<2	<10	<2	-	-	-
DW36	<2	<2	18	<2	8.5	<2	-	-	-
DW37	<2	<2	14	<2	4.2	<2	-	-	-
DW38	<2	<2	12	<2	6.2	<2	-	-	-
SE68	12	<2	24	26	<2	<2	<2	<2	<2
SE69	<10	<10	<20	<2	<10	<2	<2	<2	<2
SE70	<10	<2	<10	<10	<10	<2	<2	<2	<2
Tau-Fluvalinate (ng/L)									
DW35	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
DW36	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
DW37	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
DW38	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
SE68	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SE69	<1	<1	<1	<0.2	<1	<0.2	<0.2	<0.2	<0.2
SE70	<1	<0.2	<1	<1	<1	<0.2	<0.2	<0.2	<0.2
Tetramethrin (ng/L)									
DW35	<0.2	<0.2	<0.2	<0.2	<1	<0.2	-	-	-
DW36	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
DW37	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
DW38	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
SE68	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SE69	<1	<1	<2	<0.2	<1	<0.2	<0.2	<0.2	<0.2
SE70	28	<0.2	<1	<1	<1	<0.2	17	<0.2	1.1

This page intentionally left blank for printing purposes

Appendix D
2018-2019 Sediment Toxicity Results

This page intentionally left blank for printing purposes

Sediment Toxicity Lab Report
September 24, 2018 at SC-5R
Dry Weather Event

This page intentionally left blank for printing purposes

Micheline Kipf
Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

October 26, 2018

Dear Micheline:

I have enclosed a copy of our report "An Evaluation of the Toxicity of City of Stockton Stormwater Program Sediment Samples" for the samples that were collected September 24, 2018. The results of this testing are summarized below:

Summary of Stockton Stormwater Program sediment effects on *Hyalella azteca*.		
Sample Station	Toxicity Present Relative to Lab Control?	
	Survival	Growth
SC-5R	**YES**	**YES**
FD	**YES**	**YES**

If you have any questions regarding the performance and interpretation of this testing, please contact my colleague Stephen Clark or myself at (707) 207-7760.

Sincerely,

Michael McElroy
Senior Project Manager

Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 29417.

An Evaluation of the Toxicity of City of Stockton Stormwater Program Sediment Samples

Samples collected September 24, 2018

Prepared For:

Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

Prepared By:

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534
(707) 207-7760

October 2018

An Evaluation of the Toxicity of City of Stockton Stormwater Program Sediment Samples

Samples collected September 24, 2018

Table of Contents

Appendices

1. INTRODUCTION

In compliance with the City of Stockton Stormwater Program NPDES permit monitoring requirements, Condor Earth Technologies, Inc., has contracted Pacific EcoRisk (PER) to perform evaluations of the toxicity of selected ambient water and sediment samples. The current testing event was designed to meet the sediment monitoring requirements using sediment samples that were collected on September 24, 2018. This evaluation consisted of performing the US EPA 10-day survival and growth test with the amphipod *Hyalella azteca*. This report describes the performance and results of this testing.

2. SEDIMENT TOXICITY TEST PROCEDURES

This testing followed the guidelines established by the EPA manual "Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates, Second Edition" (EPA/600/R-99/064).

2.1 Receipt and Handling of the Sediment Samples

On September 24, sediment samples were collected into appropriately cleaned sample containers. These samples were transported on ice and under chain-of-custody, to the PER laboratory in Fairfield, CA (Table 1). The samples were then stored at ≤6˚C until being used to initiate toxicity tests within 14 days of collection. The chain-of-custody record for the collection and delivery of the samples is presented in Appendix A.

Table 1. Sampling station and date of sediment collection for the Stockton Stormwater Program.

Sample Station	Date Collected	Date Received
SC-5R	9/24/18	9/25/18
FD	9/24/18	9/25/18

2.2 Solid-Phase Sediment Toxicity Testing with *Hyalella azteca*

The sediment toxicity test with *H. azteca* consists of exposing the amphipods to the sediment for 10 days, after which effects on survival and growth are evaluated. The specific procedures used in this testing are described below.

The *H. azteca* used in this testing were obtained from a commercial supplier (Aquatic BioSystems, Fort Collins, CO). Upon receipt at the laboratory, the amphipods were maintained in tanks containing Lab Water Control medium at 23˚C and were fed a commercial Yeast-Cerophyll®-Trout chow (YCT) food amended with freeze-dried *Spirulina*.

The Control treatment sediment for this testing consisted of a composite of reference site sediments that have been maintained under culture at the PER lab for >3 months. The sediment samples were tested at the 100% concentration only. There were eight replicates for each test treatment, each replicate container consisting of a 300-mL tall-form glass beaker with a 3-cm ribbon of 540 µm mesh NITEX attached to the top of the beaker with silicone sealant. Each sediment sample was homogenized prior to loading of sediment into the test replicates. For each sediment, approximately 100 mL of sediment was then loaded into each of the test replicate containers. Each test replicate was then carefully filled with clean Lab Water Control medium (Standard Artificial Medium [SAM-5S] water). The test replicates with sediments and clean overlying water were established approximately 24 hours prior to the introduction of the amphipods, and were placed in a temperature-controlled room at 23˚C during this pre-test period.

After this initial 24 hour period, the overlying water in each replicate was flushed with one volume (approximately 150 mL) of fresh overlying water. For each test treatment, a small aliquot of the renewed overlying water was then collected from each of the eight replicates and composited for measurement of "initial" water quality characteristics (pH, dissolved oxygen [D.O.], conductivity, alkalinity, hardness, and total ammonia). The testing was then initiated with the random allocation of ten 12-13 day-old amphipods into each replicate, followed by the addition of 1.0 mL of *Spirulina*-amended YCT food. The test replicates were then placed in a temperature-controlled room at 23˚C. At the time of test initiation, eight replicates of 10 randomly-selected organisms were collected, dried, and weighed (described below) to determine the mean dry weight of the test organisms at test initiation (T_0).

Each day, for the following nine days, each test replicate was examined and any dead amphipods were removed via pipette and the mortality recorded. A small aliquot of the overlying water in each of the eight replicates for each test treatment was then collected and composited as before for measurement of "old" D.O., after which each replicate was flushed with one volume of fresh water. Another small aliquot of the overlying water in each of the eight replicates was then collected and composited as before for measurement of "new" D.O., after which each replicate was fed 1.0 mL of *Spirulina*-amended YCT.

After 10 days exposure, testing was terminated. An aliquot of overlying water was collected from each replicate and composited for analysis of the "final" water quality characteristics. The sediments in each replicate container were then carefully sorted and sieved and the number of surviving amphipods determined. The surviving organisms were euthanized in methanol, rinsed in de-ionized water, and transferred to small pre-tared weighing pans, which were placed into a drying oven at 100˚C. After drying for approximately 24 hours, the pans were transferred to a desiccator to cool, and then weighed to the nearest 0.01 mg to determine the mean dry weight per surviving organism for each replicate. The resulting survival and growth (mean dry weight) data were then analyzed to evaluate any impairment due to the sediments. Statistical analyses were performed using CETIS® (TidePool Scientific Software, McKinleyville, CA).

3. RESULTS

Test results are summarized in Table 2. There were significant reductions in survival and growth in the SC-5R sediment sample and field duplicate (FD) sample. The test data and summary of statistical analyses for this testing are presented in Appendix B.

Table 2. Data summary for the Stockton Stormwater Program sediment samples.

Test Treatment	% Survival	% Reduction	Toxic? (Y/N)	Mean dry weight (mg)	% Reduction	Toxic? (Y/N)
Control	100	N/A	N/A	0.094	N/A	N/A
SC-5R	**92.5***	7.5%	**Y**	**0.063***	33.5%	**Y**
FD	**92.5***	7.5%	**Y**	**0.052***	44.8%	**Y**

* The response at this test treatment was significantly less than the Control sediment response (at $p<0.05$).

4. SUMMARY AND CONCLUSIONS

The results of this testing are summarized below. There were significant reductions in survival and growth in the SC-5R sediment sample and field duplicate (FD) sample.

Summary of Stockton Stormwater Program sediment effects on *Hyalella azteca*.

Sample Station	Toxicity Present Relative to Lab Control?	
	Survival	Growth
SC-5R	**YES**	**YES**
FD	**YES**	**YES**

4.1 QA/QC Summary

Test Conditions – All test conditions (pH, D.O., temperature, etc.) were within acceptable limits. All analyses were performed according to laboratory Standard Operating Procedures.

Negative Control – The biological responses for the test organisms at the Lab Control treatment were within acceptable limits.

Appendix A

Chain-of-Custody Record for the Collection and Delivery of the Stockton Stormwater Program Sediment Samples

This page intentionally left blank for printing purposes

Condor Earth Technologies, Inc.

CONDOR

☐ PO Box 3905/21663 Brian Lane, Sonora, CA 95370, 209.532.0361, 209.532.0773 fax
☑ 188 Frank West Circle, Suite I, Stockton, CA 95206, 209.234.0518, 209.234.0538 fax
☐ 2941 Sunrise Blvd, Suite 150, Rancho Cordova, CA 95742, 916.783.2060, 916.783.2464 fax
☐ 1739 Ashby Road, Suite B, Merced, CA 95348, 209.388.9601, 209.388.1778 fax

Sample Results TAT: ☐ Rush ☑ Standard

SHIPPED TO:

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534 (707) 207-7760

SEND RESULTS TO:

NAME: Micheline Doyle Kipf
E-MAIL: mkipf@condorearth.com
E-MAIL:

☑ PLEASE FAX/EMAIL RESULTS TO ADDRESS MARKED ABOVE

PROJECT NAME/LOCATION: COS Urban Discharge
EDF RESULTS REQUIRED ☑ YES ☐ NO
SITE GLOBAL ID: CEDEN FORMAT REQUESTED
PROJECT NO.: 6066J-05-01
SAMPLED BY: (Signature) [signature]

Date	Time	Sample Site Name	Sample ID (if different)	Matrix	# of containers	Preservatives (see below)	ANALYSIS /METHOD:	Field Filtered	Hyalella azteca*	TOC	Grain size						REMARKS	LAB ID#
9/24/18	1520	1819-DW35-	SC-5R	S		1		N	✓	✓	✓						*chronic freshwater (EPA/600/4-91/003)	
9/24/18	1520	1819-DW35-	FD	S		1		N	✓	✓	✓						Hyalella azteca survival & growth	
																	Conduct additional pyrethroids	
																	analysis if toxicity is observed.	
																	Sub samples to be	
																	collected for Caltest	
																	TOC RL= 1 mg/L	

Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)	Date:	Time:
[signature]	9/25/18	12:50	[signature]	9-25-18	12:50
[signature]	9/25/18	1356	Alyamara L. Romero	9-25-18	1356

Matrix: WW Waste Water; S Soil/Solid; GW Ground Water; DW Drinking Water; HWW Hazardous Waste (Water); SW Storm Water

Preservative: 1 4°C; 2 HCL; 3 NaOH; 4 $Na_2S_2O_3$; 5 HNO_3; 6 H_2SO_4; 7 Other_____

Original – Send Yellow – File Pink – Log Book

This page intentionally left blank for printing purposes

Appendix B

Test Data and Summary of Statistics for the Evaluation of the Toxicity of the Stockton Stormwater Program Sediment Samples to *Hyalella azteca*

This page intentionally left blank for printing purposes

CETIS Summary Report

Report Date: 23 Oct-18 09:31 (p 1 of 1)
Test Code: CE_0918HA_C1 | 20-2614-6070

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Batch ID:	15-3727-7858	**Test Type:**	Survival-Growth (10 day)	**Analyst:**	Robert Gee
Start Date:	30 Sep-18 14:10	**Protocol:**	EPA/600/R-99/064 (2000)	**Diluent:**	Not Applicable
Ending Date:	10 Oct-18 10:30	**Species:**	Hyalella azteca	**Brine:**	Not Applicable
Duration:	9d 20h	**Source:**	Aquatic Biosystems, CO	**Age:**	13

Sample Code	Sample ID	Sample Date	Receipt Date	Sample Age	Client Name	Project
CE_0918HA_C1	15-9500-7058	30 Sep-18 14:10	30 Sep-18 14:10	n/a (22.6 °C)	Condor Earth Technologi	29417
1819-DW35-SC-5R	00-9457-7005	24 Sep-18 15:20	25 Sep-18 13:56	5d 23h (9.3 °C)		
1819-DW35-FD	16-8427-5513	24 Sep-18 15:20	25 Sep-18 13:56	5d 23h (9.3 °C)		

Sample Code	Material Type	Sample Source	Station Location	Lat/Long
CE_0918HA_C1	Sediment	Condor Earth Technologies	LABQA	
1819-DW35-SC-5R	Sediment	Condor Earth Technologies	1819-DW35	
1819-DW35-FD	Sediment	Condor Earth Technologies		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
01-4556-7982	Mean Dry Weight-mg	Equal Variance t Two-Sample Test	7.2E-04	1819-DW35-SC-5R failed mean dry weight-m
10-3945-9151	Mean Dry Weight-mg	Equal Variance t Two-Sample Test	2.4E-07	1819-DW35-FD failed mean dry weight-mg
14-7982-6210	Survival Rate	Wilcoxon Rank Sum Two-Sample Test	0.0385	1819-DW35-SC-5R failed survival rate
06-3709-8280	Survival Rate	Wilcoxon Rank Sum Two-Sample Test	0.0385	1819-DW35-FD failed survival rate

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_0918HA_C1	CS	8	0.094	0.0848	0.103	0.079	0.114	0.0039	0.011	11.72%	0.00%
1819-DW35-SC-5R		8	0.0625	0.0461	0.0789	0.0257	0.09	0.00693	0.0196	31.36%	33.47%
1819-DW35-FD		8	0.0519	0.0452	0.0586	0.0411	0.0633	0.00284	0.00802	15.46%	44.82%

Survival Rate Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_0918HA_C1	CS	8	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
1819-DW35-SC-5R		8	0.925	0.838	1.000	0.700	1.000	0.037	0.104	11.19%	7.50%
1819-DW35-FD		8	0.925	0.851	0.999	0.800	1.000	0.031	0.089	9.58%	7.50%

Mean Dry Weight-mg Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
CE_0918HA_C1	CS	0.097	0.097	0.114	0.08	0.095	0.097	0.093	0.079
1819-DW35-SC-5R		0.058	0.048	0.0789	0.0656	0.063	0.09	0.0257	0.0711
1819-DW35-FD		0.053	0.061	0.0411	0.0633	0.0475	0.043	0.056	0.05

Survival Rate Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
CE_0918HA_C1	CS	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1819-DW35-SC-5R		1.000	1.000	0.900	0.900	1.000	1.000	0.700	0.900
1819-DW35-FD		1.000	1.000	0.900	0.900	0.800	1.000	1.000	0.800

Survival Rate Binomials

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
CE_0918HA_C1	CS	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10
1819-DW35-SC-5R		10/10	10/10	9/10	9/10	10/10	10/10	7/10	9/10
1819-DW35-FD		10/10	10/10	9/10	9/10	8/10	10/10	10/10	8/10

Hyalella 10-d Survival and Growth Sediment Test — Pacific EcoRisk

Analysis ID:	14-7982-6210	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	23 Oct-18 9:30	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	1819-DW35-SC-5R failed survival rate	6.17%

Wilcoxon Rank Sum Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Control Sed		1819-DW35-SC-5R*	52	n/a	1	14	Exact	0.0385	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0517302	0.0517302	1	4.72	0.0474	Significant Effect
Error	0.15334	0.0109529	14			
Total	0.205071		15			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	8.63E+13	8.89	<1.0E-37	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.75	0.841	6.3E-04	Non-Normal Distribution

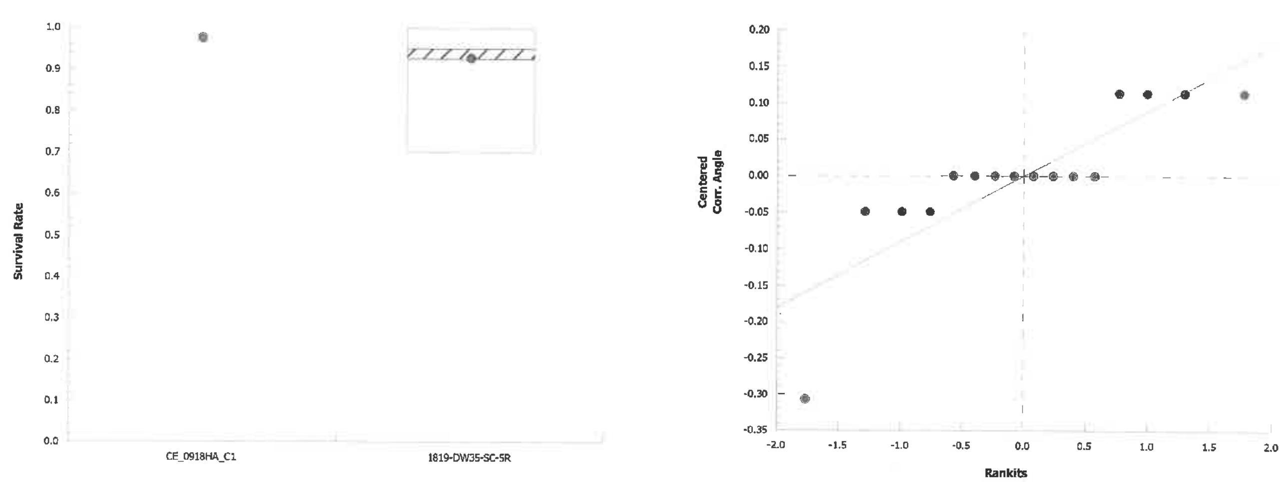
Survival Rate Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0918HA_C1	CS	8	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
1819-DW35-SC-5R		8	0.925	0.838	1.000	0.950	0.700	1.000	0.037	11.19%	7.50%

Angular (Corrected) Transformed Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0918HA_C1	CS	8	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
1819-DW35-SC-5R		8	1.3	1.17	1.42	1.33	0.991	1.41	0.0523	11.40%	8.05%

Graphics



Hyalella 10-d Survival and Growth Sediment Test				Pacific EcoRisk
Analysis ID: 01-4556-7982	**Endpoint:** Mean Dry Weight-mg		**CETIS Version:** CETISv1.9.2	
Analyzed: 23 Oct-18 9:31	**Analysis:** Parametric-Two Sample		**Official Results:** Yes	

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-DW35-SC-5R failed mean dry weight-m	14.90%

Equal Variance t Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Control Sed		1819-DW35-SC-5R*	3.96	1.76	0.014	14	CDF	7.2E-04	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0039605	0.0039605	1	15.7	0.0014	Significant Effect
Error	0.0035422	0.0002530	14			
Total	0.0075028		15			

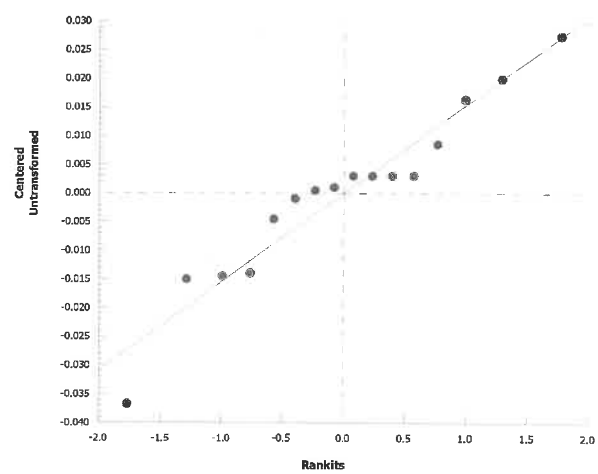
Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	3.17	8.89	0.1512	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.945	0.841	0.4179	Normal Distribution

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0918HA_C1	CS	8	0.094	0.0848	0.103	0.096	0.079	0.114	0.0039	11.72%	0.00%
1819-DW35-SC-5R		8	0.0625	0.0461	0.0789	0.0643	0.0257	0.09	0.00693	31.36%	33.47%

Graphics



10-Day *Hyalella azteca* Sediment Toxicity Test Data

Client: **Condor Earth** Project#: **29417** Organism Log #: 11205 Age: 12-13d

Species: *Hyalella azteca* Test ID#: **80294**.5 Organism Supplier: **ABS**

Day	Date	Test Material: Lab Control				Water Quality Measurements: Parameter	Value	Meter ID	Sign-off:
0	9/30/18	# Live Organisms				pH	7.82	PH25	AM Change: DM
		A 10	B 10	C 10	D 10	D.O. (mg/L)	8.3	RD12	WQ: DM
		E 10	F 10	G 10	H 10	Conductivity (µS/cm)	413	EC12	Initiation Time: 1410
						Alkalinity (mg/L)	√ 55.6		Initiation Counts: JL
						Hardness (mg/L)	√ 128		Confirmation Counts: SF
						Ammonia (mg/L)	<1.00	DR3800	PM Feed: JL
						Temp. (°C)	22.6	48A	
1	10/1/18	# of Mortalities				Old D.O. (mg/L)	7.3	RD11	AM Change: AR WQ: AR
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.6	RD11	Mortality Counts: AR
		E 0	F 0	G 0	H 0	Temp. (°C)	23.1	48A	PM Change: KG PM Feed: KG
2	10/2/18	# of Mortalities				Old D.O. (mg/L)	7.4	RD12	AM Change: DM WQ: DM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.1	RD12	Mortality Counts: DM
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: RAP PM Feed: RAP
3	10/3/18	# of Mortalities				Old D.O. (mg/L)	5.9	RD11	AM Change: DH WQ: DH
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	6.3	RD11	Mortality Counts: DH
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: KG PM Feed: KG
4	10/4/18	# of Mortalities				Old D.O. (mg/L)	8.3	RD13	AM Change: DM WQ: DM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.4	RD13	Mortality Counts: DM
		E 0	F 0	G 0	H 0	Temp. (°C)	23.0	48A	PM Change: DM PM Feed: DM
5	10/5/18	# of Mortalities				Old D.O. (mg/L)	7.2	RD10	AM Change: RAP WQ: RAP
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.4	RD10	Mortality Counts: RAP
		E 0	F 0	G 0	H 0	Temp. (°C)	23.4	48A	PM Change: AR PM Feed: AR
6	10/6/18	# of Mortalities				Old D.O. (mg/L)	~~7.7~~ MYK 10/6/18 6.6	RD13	AM Change: MYK WQ: MYK
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.4	RD13	Mortality Counts: MYK
		E 0	F 0	G 0	H 0	Temp. (°C)	~~22.7~~ MYK 10/6/18 22.8	48A	PM Change: MYK PM Feed: MYK
7	10/7/18	# of Mortalities				Old D.O. (mg/L)	7.8	RD12	AM Change: TY WQ: TY
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.1	RD12	Mortality Counts: TY
		E 0	F 0	G 0	H 0	Temp. (°C)	~~23.3~~ 23.2	48A	PM Change: TY PM Feed: TY
8	10/8/18	# of Mortalities				Old D.O. (mg/L)	6.3	RD10	AM Change: KG WQ: KG
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.0	RD10	Mortality Counts: KG
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: AR PM Feed: AR
9	10/9/18	# of Mortalities				Old D.O. (mg/L)	5.7	RD10	AM Change: TY WQ: TY
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	6.4	RD10	Mortality Counts: TY
		E 0	F 0	G 0	H 0	Temp. (°C)	23.3	48A	PM Change: TY PM Feed: TY
10	10/10/18	# Alive				pH	7.57	pH19	WQ: TY
		A 10	B 10	C 10	D 10	D.O. (mg/L)	6.9	RD13	Termination Counts: NK
		E 10	F 10	G 10	H 10	Conductivity (µS/cm)	453	EC13	Termination Time: 1030
						Alkalinity (mg/L) √	62.4		
						Hardness (mg/L) √	128		
						Ammonia (mg/L)	<1.00	DR3800	
						Temp. (°C)	23.6	48A	

10-Day *Hyalella azteca* Sediment Toxicity Test Data

Client: **Condor Earth** Project#: **29417** Organism Log #: 11205 Age: 12-13d

Species: *Hyalella azteca* Test ID#: **80294** Organism Supplier: **ABS**

Day	Date	Test Material: 1819-DW35-SC5R				Parameter	Value	Meter ID	Sign-off
0	9/30/18	# Live Organisms				pH	7.74	PH25	AM Change: DM
		A 10	B 10	C 10	D 10	D.O. (mg/L)	8.2	RD12	WQ: DM
		E 10	F 10	G 10	H 10	Conductivity (µS/cm)	421	EC12	Initiation Time: 1410
						Alkalinity (mg/L)	√ 52.4		Initiation Counts: JL
						Hardness (mg/L)	√ 116		Confirmation Counts: SC
						Ammonia (mg/L)	<1.00	DR3800	PM Feed: JL
						Temp. (°C)	22.4	48A	
1	10/1/18	# of Mortalities				Old D.O. (mg/L)	6.7	RD11	AM Change: AR WQ: AR
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.9	RD11	Mortality Counts: AR
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: KG PM Feed: KG
2	10/2/18	# of Mortalities				Old D.O. (mg/L)	7.4	RD12	AM Change: DM WQ: DM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.8	RD12	Mortality Counts: DM
		E 0	F 0	G 0	H 0	Temp. (°C)	22.9	48A	PM Change: RAP PM Feed: RAP
3	10/3/18	# of Mortalities				Old D.O. (mg/L)	5.7	RD11	AM Change: DH WQ: DH
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	6.2	RD11	Mortality Counts: DH
		E 0	F 0	G 0	H 0	Temp. (°C)	23.0	48A	PM Change: KG PM Feed: KG
4	10/4/18	# of Mortalities				Old D.O. (mg/L)	8.0	RD13	AM Change: DM WQ: DM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.3	RD13	Mortality Counts: DM
		E 0	F 0	G 0	H 0	Temp. (°C)	23.0	48A	PM Change: DM PM Feed: DM
5	10/5/18	# of Mortalities				Old D.O. (mg/L)	7.1	RD10	AM Change: RAP WQ: RAP
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.4	RD10	Mortality Counts: RAP
		E 0	F 0	G 0	H 0	Temp. (°C)	23.1	48A	PM Change: AR PM Feed: AR
6	10/6/18	# of Mortalities				Old D.O. (mg/L)	6.8	RD13	AM Change: MYL WQ: MYL
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.9	RD13	Mortality Counts: MYL
		E 0	F 0	G 0	H 0	Temp. (°C)	22.8	48A	PM Change: MYL PM Feed: MYL
7	10/7/18	# of Mortalities				Old D.O. (mg/L)	6.8	RD12	AM Change: JY WQ: JY
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.9	RD12	Mortality Counts: JY
		E 0	F 0	G 0	H 0	Temp. (°C)	23.0	48A	PM Change: JY PM Feed: JY
8	10/8/18	# of Mortalities				Old D.O. (mg/L)	5.9	RD10	AM Change: KG WQ: KG
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.4	RD10	Mortality Counts: KG
		E 0	F 0	G 0	H 0	Temp. (°C)	23.1	48A	PM Change: AR PM Feed: AR
9	10/9/18	# of Mortalities				Old D.O. (mg/L)	5.9	RD10	AM Change: JY WQ: JY
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.1	RD10	Mortality Counts: JY
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: JY PM Feed: JY
10	10/10/18	# Alive				pH	7.45	PH19	WQ: JY
		A 10	B 10	C 9	D 9	D.O. (mg/L)	5.9	RD13	Termination Counts: SMC
		E 10	F 10	G 7	H 9	Conductivity (µS/cm)	421	EC13	Termination Time: 1410
						Alkalinity (mg/L) √	58.8		
						Hardness (mg/L) √	120		
						Ammonia (mg/L)	1.05	DR3800	
						Temp. (°C)	23.2	48A	

Hyalella azteca Weight Data Sheets

Client: **Condor Earth** Project #: **29417** Balance ID: Bal04

Sample ID: 1819-DW35-SC5R Tare Wt Date: 10/9/18 Sign-Off: RAP

Test ID #: **80294** Final Wt Date: 10/13/18 Sign-Off: RAP

Pan	Concentration Replicate		Initial Weight. (mg)	Final Weight. (mg)	# organisms	Ave Weight (mg)
1	Control	A	53.27	54.24	10	0.097
2	Sediment	B	65.42	66.39	10	0.097
3		C	60.77	61.91	10	0.114
4		D	66.31	67.11	10	0.080
5		E	69.45	70.40	10	0.095
6		F	59.28	60.25	10	0.097
7		G	65.00	65.93	10	0.093
8		H	58.70	59.49	10	0.079
9	1819-DW35-	A	66.03	~~66.8~~ 66.61	10	0.058
10	SC5R	B	67.34	67.82	10	0.048
11		C	~~57.35~~ 70.12	70.83	9	0.0789
12		D	57.35	57.94	9	0.0656
13		E	61.50	62.13	10	0.063
14		F	58.71	59.61	10	0.090
15		G	63.45	63.63	7	0.0257
16		H	63.54	64.18	9	0.0711
QA 1			57.18	57.17		

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Analysis ID:	06-3709-8280	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	23 Oct-18 9:30	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	1819-DW35-FD failed survival rate	5.81%

Wilcoxon Rank Sum Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Control Sed		1819-DW35-FD*	52	n/a	1	14	Exact	0.0385	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.054718	0.054718	1	5.91	0.0291	Significant Effect
Error	0.129571	0.0092551	14			
Total	0.184289		15			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	7.29E+13	8.89	<1.0E-37	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.826	0.841	0.0062	Non-Normal Distribution

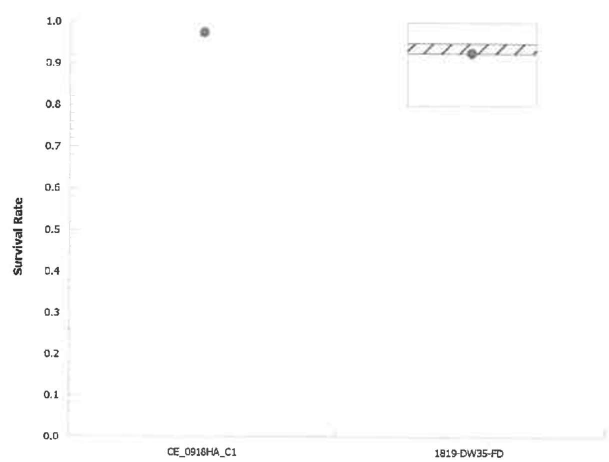
Survival Rate Summary

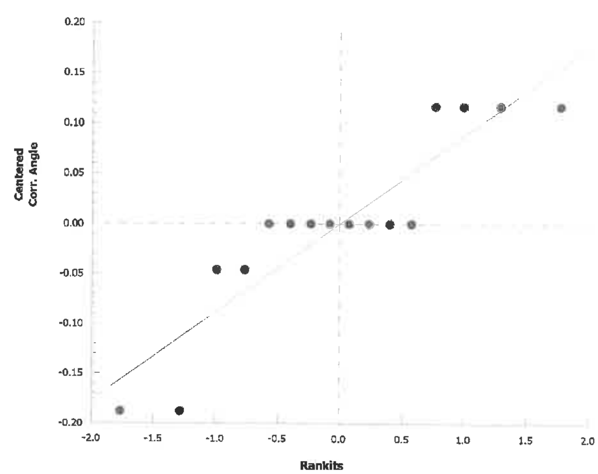
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0918HA_C1	CS	8	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
1819-DW35-FD		8	0.925	0.851	0.999	0.950	0.800	1.000	0.031	9.58%	7.50%

Angular (Corrected) Transformed Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0918HA_C1	CS	8	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
1819-DW35-FD		8	1.3	1.18	1.41	1.33	1.11	1.41	0.0481	10.51%	8.28%

Graphics





Hyalella 10-d Survival and Growth Sediment Test — Pacific EcoRisk

Analysis ID:	10-3945-9151	**Endpoint:**	Mean Dry Weight-mg	**CETIS Version:**	CETISv1.9.2
Analyzed:	23 Oct-18 9:31	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-DW35-FD failed mean dry weight-mg	9.03%

Equal Variance t Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Control Sed		1819-DW35-FD*	8.74	1.76	0.008	14	CDF	2.4E-07	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0071005	0.0071005	1	76.5	4.8E-07	Significant Effect
Error	0.0013001	9.287E-05	14			
Total	0.0084006		15			

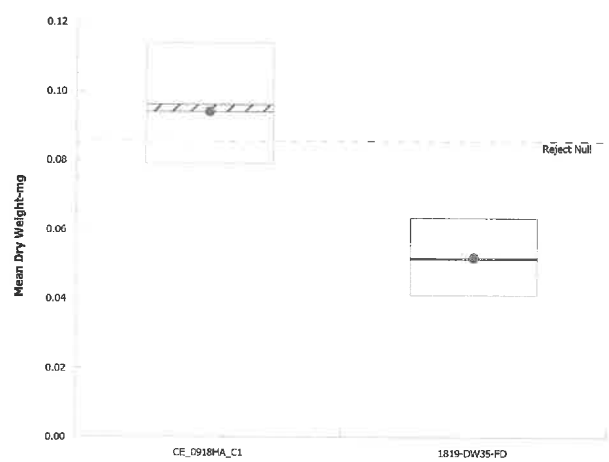
Distributional Tests

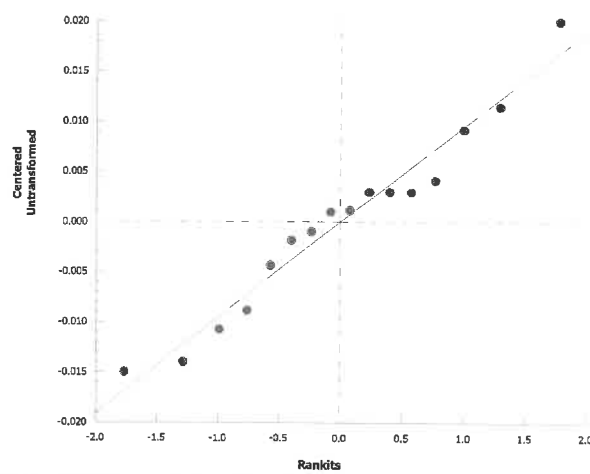
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.89	8.89	0.4208	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.964	0.841	0.7364	Normal Distribution

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0918HA_C1	CS	8	0.094	0.0848	0.103	0.096	0.079	0.114	0.0039	11.72%	0.00%
1819-DW35-FD		8	0.0519	0.0452	0.0586	0.0515	0.0411	0.0633	0.00284	15.46%	44.82%

Graphics





10-Day *Hyalella azteca* Sediment Toxicity Test Data

Client: **Condor Earth** Project#: **29417** Organism Log #: 11205 Age: 12-13d

Species: *Hyalella azteca* Test ID#: **80295** Organism Supplier: **ABS**

Day	Date	Test Material: 1819-DW35-FD				Water Quality Measurements: Parameter	Value	Meter ID	Sign-off:
0	9/30/18	# Live Organisms				pH	7.59	PH25	AM Change: DM
		A 10	B 10	C 10	D 10	D.O. (mg/L)	8.1	RD12	WQ: DM
		E 10	F 10	G 10	H 10	Conductivity (µS/cm)	425	EC12	Initiation Time: 1410
						Alkalinity (mg/L)	✓ 55.6		Initiation Counts: JL
						Hardness (mg/L)	✓ 122		Confirmation Counts: SF
						Ammonia (mg/L)	<1.00	DR3800	PM Feed: JL
						Temp. (°C)	22.4	48A	
1	10/1/18	# of Mortalities				Old D.O. (mg/L)	6.7	RD11	AM Change: AR WQ: AR
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.5	RD11	Mortality Counts: AR
		E 0	F 0	G 0	H 0	Temp. (°C)	23.1	48A	PM Change: KG PM Feed: KG
2	10/2/18	# of Mortalities				Old D.O. (mg/L)	7.5	RD12	AM Change: DM WQ: DM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.7	RD12	Mortality Counts: DM
		E 0	F 0	G 0	H 0	Temp. (°C)	22.9	48A	PM Change: RAP PM Feed: RAP
3	10/3/18	# of Mortalities				Old D.O. (mg/L)	5.4	RD11	AM Change: DH WQ: DH
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	6.1	RD11	Mortality Counts: DH
		E 0	F 0	G 0	H 0	Temp. (°C)	23.1	48A	PM Change: KG PM Feed: KG
4	10/4/18	# of Mortalities				Old D.O. (mg/L)	7.9	RD13	AM Change: DM WQ: DM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.2	RD13	Mortality Counts: DM
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: DM PM Feed: DM
5	10/5/18	# of Mortalities				Old D.O. (mg/L)	6.8	RD10	AM Change: RAP WQ: RAP
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.2	RD10	Mortality Counts: RAP
		E 0	F 0	G 0	H 0	Temp. (°C)	23.3	48A	PM Change: AR PM Feed: AR
6	10/6/18	# of Mortalities				Old D.O. (mg/L)	6.9	RD13	AM Change: MYL WQ: MYL
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.8	RD13	Mortality Counts: MYL
		E 0	F 0	G 0	H 0	Temp. (°C)	22.7	48A	PM Change: MYL PM Feed: MYL
7	10/7/18	# of Mortalities				Old D.O. (mg/L)	6.7	RD12	AM Change: JY WQ: JY
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.9	RD12	Mortality Counts: JY
		E 0	F 0	G 0	H 0	Temp. (°C)	23.1	48A	PM Change: JY PM Feed: JY
8	10/8/18	# of Mortalities				Old D.O. (mg/L)	5.8	RD10	AM Change: KG WQ: KG
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.3	RD10	Mortality Counts: KG
		E 0	F 0	G 0	H 0	Temp. (°C)	23.1	48A	PM Change: AR PM Feed: AR
9	10/9/18	# of Mortalities				Old D.O. (mg/L)	5.3	RD10	AM Change: JY WQ: JY
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.1	RD10	Mortality Counts: JY
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: JY PM Feed: JY
10	10/10/18	# Alive				pH	7.49	PH19	WQ: JY
		A 10	B 10	C 9	D 9	D.O. (mg/L)	6.2	RD13	Termination Counts: NB
		E 8	F 10	G 10	H 8	Conductivity (µS/cm)	428	EC13	Termination Time: 1420
						Alkalinity (mg/L) ✓	58		
						Hardness (mg/L) ✓	119		
						Ammonia (mg/L)	1.05	DR3800	
						Temp. (°C)	23.3	48A	

Hyalella azteca Weight Data Sheets

Client: **Condor Earth** Project #: **29417** Balance ID: Bal04

Sample ID: 1819-DW35-FD Tare Wt Date: 10/9/18 Sign-Off: RAP

Test ID #: **80295** Final Wt Date: 10/13/18 Sign-Off: RAP

Pan	Concentration Replicate		Initial Weight. (mg)	Final Weight. (mg)	# organisms	Ave Weight (mg)
1	Control	A	53.27	54.24	10	0.097
2	Sediment	B	65.42	66.39	10	0.097
3		C	60.77	61.91	10	0.114
4		D	66.31	67.11	10	0.080
5		E	69.45	70.40	10	0.095
6		F	59.28	60.25	10	0.097
7		G	65.00	65.93	10	0.093
8		H	58.70	59.49	10	0.079
17	1819-DW35-	A	64.99	65.52	10	0.053
18	FD	B	62.18	62.79	10	0.061
19		C	62.85	63.22	9	0.0411
20		D	58.51	59.08	9	0.0633
21		E	65.25	65.63	8	0.0475
22		F	59.83	60.26	10	0.043
23		G	63.34	63.90	10	0.056
24		H	57.65	58.05	8	0.050
QA ~~1~~2			67.98	68.01		0.03

Sediment Toxicity Lab Report
December 3, 2018 at SC-5R
After Storm Event

This page intentionally left blank for printing purposes

Micheline Kipf
Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

January 4, 2019

Dear Micheline:

I have enclosed a copy of our report "An Evaluation of the Toxicity of City of Stockton Stormwater Program Sediment Samples" for the samples that were collected December 3, 2018. The results of this testing are summarized below:

Summary of Stockton Stormwater Program sediment effects on *Hyalella azteca*.		
Sample Station	Toxicity Present Relative to Lab Control?	
	Survival	Growth
SC-5R	**YES**	no
FD	**YES**	**YES**

If you have any questions regarding the performance and interpretation of this testing, please contact my colleague Stephen Clark or myself at (707) 207-7760.

Sincerely,

Michael McElroy
Senior Project Manager

Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 29660.

An Evaluation of the Toxicity of City of Stockton Stormwater Program Sediment Samples

Samples collected December 3, 2018

Prepared For:

Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

Prepared By:

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534
(707) 207-7760

January 2019

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING

An Evaluation of the Toxicity of City of Stockton Stormwater Program Sediment Samples

Samples collected December 3, 2018

Table of Contents

Appendices

1. INTRODUCTION

In compliance with the City of Stockton Stormwater Program NPDES permit monitoring requirements, Condor Earth Technologies, Inc., has contracted Pacific EcoRisk (PER) to perform evaluations of the toxicity of selected ambient water and sediment samples. The current testing event was designed to meet the sediment monitoring requirements using sediment samples that were collected on December 3, 2018. This evaluation consisted of performing the US EPA 10-day survival and growth test with the amphipod *Hyalella azteca*. This report describes the performance and results of this testing.

2. SEDIMENT TOXICITY TEST PROCEDURES

This testing followed the guidelines established by the EPA manual "Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates, Second Edition" (EPA/600/R-99/064).

2.1 Receipt and Handling of the Sediment Samples

On December 3, sediment samples were collected into appropriately cleaned sample containers. These samples were transported on ice and under chain-of-custody, to the PER laboratory in Fairfield, CA (Table 1). The samples were then stored at ≤6˚C until being used to initiate toxicity tests within 14 days of collection. The chain-of-custody record for the collection and delivery of the samples is presented in Appendix A.

Table 1. Sampling station and date of sediment collection for the Stockton Stormwater Program.

Sample Station	Date Collected	Date Received
SC-5R	12/3/18	12/4/18
FD	12/3/18	12/4/18

2.2 Solid-Phase Sediment Toxicity Testing with *Hyalella azteca*

The sediment toxicity test with *H. azteca* consists of exposing the amphipods to the sediment for 10 days, after which effects on survival and growth are evaluated. The specific procedures used in this testing are described below.

The *H. azteca* used in this testing were obtained from a commercial supplier (Aquatic BioSystems, Fort Collins, CO). Upon receipt at the laboratory, the amphipods were maintained in tanks containing Lab Water Control medium at 23˚C and were fed a commercial Yeast-Cerophyll®-Trout chow (YCT) food amended with freeze-dried *Spirulina*.

The Control treatment sediment for this testing consisted of a composite of reference site sediments that have been maintained under culture at the PER lab for >3 months. The sediment samples were tested at the 100% concentration only. There were eight replicates for each test treatment, each replicate container consisting of a 300-mL tall-form glass beaker with a 3-cm ribbon of 540 µm mesh NITEX attached to the top of the beaker with silicone sealant. Each sediment sample was homogenized prior to loading of sediment into the test replicates. For each sediment, approximately 100 mL of sediment was then loaded into each of the test replicate containers. Each test replicate was then carefully filled with clean Lab Water Control medium (Standard Artificial Medium [SAM-5S] water). The test replicates with sediments and clean overlying water were established approximately 24 hours prior to the introduction of the amphipods, and were placed in a temperature-controlled room at 23˚C during this pre-test period.

After this initial 24 hour period, the overlying water in each replicate was flushed with one volume (approximately 150 mL) of fresh overlying water. For each test treatment, a small aliquot of the renewed overlying water was then collected from each of the eight replicates and composited for measurement of “initial” water quality characteristics (pH, dissolved oxygen [D.O.], conductivity, alkalinity, hardness, and total ammonia). The testing was then initiated with the random allocation of ten 10-11 day-old amphipods into each replicate, followed by the addition of 1.0 mL of *Spirulina*-amended YCT food. The test replicates were then placed in a temperature-controlled room at 23˚C. At the time of test initiation, eight replicates of 10 randomly-selected organisms were collected, dried, and weighed (described below) to determine the mean dry weight of the test organisms at test initiation (T_0).

Each day, for the following nine days, each test replicate was examined and any dead amphipods were removed via pipette and the mortality recorded. A small aliquot of the overlying water in each of the eight replicates for each test treatment was then collected and composited as before for measurement of “old” D.O., after which each replicate was flushed with one volume of fresh water. Another small aliquot of the overlying water in each of the eight replicates was then collected and composited as before for measurement of “new” D.O., after which each replicate was fed 1.0 mL of *Spirulina*-amended YCT.

After 10 days exposure, testing was terminated. An aliquot of overlying water was collected from each replicate and composited for analysis of the “final” water quality characteristics. The sediments in each replicate container were then carefully sorted and sieved and the number of surviving amphipods determined. The surviving organisms were euthanized in methanol, rinsed in de-ionized water, and transferred to small pre-tared weighing pans, which were placed into a drying oven at 100˚C. After drying for approximately 24 hours, the pans were transferred to a desiccator to cool, and then weighed to the nearest 0.01 mg to determine the mean dry weight per surviving organism for each replicate. The resulting survival and growth (mean dry weight) data were then analyzed to evaluate any impairment due to the sediments. Statistical analyses were performed using CETIS® (TidePool Scientific Software, McKinleyville, CA).

3. RESULTS

Test results are summarized in Table 2. There were significant reductions in survival and growth in the SC-5R sediment sample and a significant reduction in the growth of the field duplicate (FD) sample. The test data and summary of statistical analyses for this testing are presented in Appendix B.

Table 2. Data summary for the Stockton Stormwater Program sediment samples.

Test Treatment	% Survival	% Reduction	Toxic? (Y/N)	Mean dry weight (mg)	% Reduction	Toxic? (Y/N)
Control	100	N/A	N/A	0.080	N/A	N/A
SC-5R	**63.8***	36.3%	**Y**	0.105	-31.0%	N
FD	**82.5***	17.5%	**Y**	**0.042***	47.3%	**Y**

* The response at this test treatment was significantly less than the Control sediment response (at $p<0.05$).

4. SUMMARY AND CONCLUSIONS

The results of this testing are summarized below. There were significant reductions in survival and growth in the SC-5R sediment sample and a significant reduction in growth in the field duplicate (FD) sample.

Summary of Stockton Stormwater Program sediment effects on *Hyalella azteca*.

Sample Station	Toxicity Present Relative to Lab Control?	
	Survival	Growth
SC-5R	**YES**	no
FD	**YES**	**YES**

4.1 QA/QC Summary

Test Conditions – Due to the observation of low D.O. in the evening of the test initiation day, the tests were aerated to eliminate hypoxic conditions during the test. Otherwise, all test conditions (pH, D.O., temperature, etc.) were within acceptable limits. All analyses were performed according to laboratory Standard Operating Procedures.

Negative Control – The biological responses for the test organisms at the Lab Control treatment were within acceptable limits.

Appendix A

Chain-of-Custody Record for the Collection and Delivery of the Stockton Stormwater Program Sediment Samples

This page intentionally left blank for printing purposes

Sample Results TAT: ☐ Rush ☑ Standard

Condor Earth Technologies, Inc.

CONDOR

☐ PO Box 3905/21663 Brian Lane, Sonora, CA 95370, 209.532.0361, 209.532.0773 fax
☑ 188 Frank West Circle, Suite I, Stockton, CA 95206, 209.234.0518, 209.234.0538 fax
☐ 2941 Sunrise Blvd, Suite 150, Rancho Cordova, CA 95742, 916.783.2060, 916.783.2464 fax
☐ 1739 Ashby Road, Suite B, Merced, CA 95348, 209.388.9601, 209.388.1778 fax

SHIPPED TO:

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534 (707) 207-7760

SEND RESULTS TO:

NAME: Micheline Doyle Kipf
E-MAIL: mkipf@condorearth.com
E-MAIL:

☑ PLEASE FAX/EMAIL RESULTS TO ADDRESS MARKED ABOVE

PROJECT NAME/LOCATION: COS Urban Discharge
EDF RESULTS REQUIRED ☑ YES ☐ NO
SITE GLOBAL ID: CEDEN FORMAT REQUESTED
PROJECT NO.: 6066J-06-01
SAMPLED BY: (Signature) Matt Rodgers

Date	Time	Sample Site Name	Sample ID (if different)	Matrix	# of containers	Preservatives (see below)	ANALYSIS /METHOD:	Field Filtered	Hyalella azteca*	TOC	Grain size						REMARKS	LAB ID#
12/3/18	1310	1819-SE68-	SC-5R	S		1		N	✓	✓	✓						*chronic freshwater (EPA/600/4-91/003)	
12/3/18	1310	1819-SE68-	FD	S		1		N	✓	✓	✓						Hyalella azteca survival & growth	
																	Conduct additional pyrethroids	
																	analysis if toxicity is observed.	
																	Sub samples to be	
																	collected for Caltest	
																	TOC RL= 1 mg/L	

Relinquished By: (Signature) Matt Rodgers Date: 12-4-18 Time: 1010
Received By: (Signature) [signature] Date: 12/4/18 Time 1010
Relinquished By: (Signature)
Received By: (Signature)

Matrix: WW Waste Water; S Soil/Solid; GW Ground Water; DW Drinking Water; HWW Hazardous Waste (Water); SW Storm Water

Preservative: 1 4°C; 2 HCL; 3 NaOH; 4 $Na_2S_2O_3$; 5 HNO_3; 6 H_2SO_4; 7 Other_____

Original – Send Yellow – File Pink – Log Book

Appendix B

Test Data and Summary of Statistics for the Evaluation of the Toxicity of the Stockton Stormwater Program Sediment Samples to *Hyalella azteca*

This page intentionally left blank for printing purposes

CETIS Summary Report

Report Date:	29 Dec-18 11:45 (p 1 of 1)
Test Code:	CE_1218HA_C1 | 18-2213-5689

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Batch ID:	13-5584-7125	**Test Type:**	Survival-Growth (10 day)	**Analyst:**	Ashleigh Findley
Start Date:	08 Dec-18 14:10	**Protocol:**	EPA/600/R-99/064 (2000)	**Diluent:**	Not Applicable
Ending Date:	18 Dec-18 11:15	**Species:**	Hyalella azteca	**Brine:**	Not Applicable
Duration:	9d 21h	**Source:**	Aquatic Biosystems, CO	**Age:**	11

Sample Code	Sample ID	Sample Date	Receipt Date	Sample Age	Client Name	Project
CE_1218HA_C1	20-9314-9866	08 Dec-18 14:10	08 Dec-18 14:10	n/a (22.7 °C)	Condor Earth Technologi	29660
1819-SE68-SC5R	01-6507-2846	03 Dec-18 13:10	04 Dec-18 10:10	5d 1h (4 °C)		
1819-SE68-FD	16-4190-9133	03 Dec-18 13:10	04 Dec-18 10:10	5d 1h (4 °C)		

Sample Code	Material Type	Sample Source	Station Location	Lat/Long
CE_1218HA_C1	Sediment	Condor Earth Technologies	LABQA	
1819-SE68-SC5R	Sediment	Condor Earth Technologies	1819-SE68	
1819-SE68-FD	Sediment	Condor Earth Technologies		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
21-4715-8645	Mean Dry Weight-mg	Unequal Variance t Two-Sample Test	0.9388	1819-SE68-SC5R passed mean dry weight-
16-9343-8194	Mean Dry Weight-mg	Equal Variance t Two-Sample Test	1.9E-04	1819-SE68-FD failed mean dry weight-mg
13-1072-0389	Survival Rate	Unequal Variance t Two-Sample Test	6.5E-05	1819-SE68-SC5R failed survival rate
16-2277-8941	Survival Rate	Wilcoxon Rank Sum Two-Sample Test	7.0E-04	1819-SE68-FD failed survival rate

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_1218HA_C1	CS	8	0.0803	0.071	0.0895	0.061	0.095	0.00393	0.0111	13.84%	0.00%
1819-SE68-SC5R		8	0.105	0.0724	0.138	0.0587	0.175	0.0138	0.0392	37.26%	-30.97%
1819-SE68-FD		8	0.0423	0.0253	0.0592	0.0267	0.0812	0.00717	0.0203	48.03%	47.35%

Survival Rate Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_1218HA_C1	CS	8	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
1819-SE68-SC5R		8	0.638	0.504	0.771	0.400	0.900	0.057	0.160	25.07%	36.25%
1819-SE68-FD		8	0.825	0.751	0.899	0.700	1.000	0.031	0.089	10.74%	17.50%

Mean Dry Weight-mg Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
CE_1218HA_C1	CS	0.095	0.093	0.071	0.079	0.083	0.077	0.083	0.061
1819-SE68-SC5R		0.0933	0.175	0.132	0.0587	0.124	0.07	0.0714	0.117
1819-SE68-FD		0.0812	0.0625	0.035	0.0487	0.0267	0.0275	0.0278	0.0286

Survival Rate Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
CE_1218HA_C1	CS	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1819-SE68-SC5R		0.600	0.400	0.600	0.800	0.500	0.900	0.700	0.600
1819-SE68-FD		0.800	0.800	0.800	0.800	0.900	0.800	1.000	0.700

Survival Rate Binomials

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
CE_1218HA_C1	CS	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10
1819-SE68-SC5R		6/10	4/10	6/10	8/10	5/10	9/10	7/10	6/10
1819-SE68-FD		8/10	8/10	8/10	8/10	9/10	8/10	9/9	7/10

10-Day *Hyalella azteca* Sediment Toxicity Test Data

Client: **Condor Earth** Project#: **29660** Organism Log #: 11328 Age: 10-11 days

Species: *Hyalella azteca* Test ID#: - Organism Supplier: **ABS**

Day	Date	Test Material: Lab Control	Parameter	Value	Meter ID	Sign-off
0	12/8/18	# Live Organisms	pH	7.99	PH25	AM Change: AR
		A 10, B 10, C 10, D 10	D.O. (mg/L)	7.6	RD11	WQ: AR
		E 10, F 10, G 10, H 10	Conductivity (µS/cm)	432	RD13	Initiation Time: 1410
			Alkalinity (mg/L)	✓ 61.6		Initiation Counts: TF
			Hardness (mg/L)	✓ 133		Confirmation Counts: CD
			Ammonia (mg/L)	<1.00	DR3800	PM Feed: TF
			Temp. (°C)	22.7	48A	
1	12/9/18	# of Mortalities	Old D.O. (mg/L)	8.3	RD11	AM Change: TY WQ: TY
		A 0, B 0, C 0, D 0	New D.O. (mg/L)	8.5	RD11	Mortality Counts: TY
		E 0, F 0, G 0, H 0	Temp. (°C)	22.7	48A	PM Change: TY PM Feed: TY
2	12/10/18	# of Mortalities	Old D.O. (mg/L)	8.4	RD13	AM Change: ID WQ: ID
		A 0, B 0, C 0, D 0	New D.O. (mg/L)	8.5	RD13	Mortality Counts: ID
		E 0, F 0, G 0, H 0	Temp. (°C)	23.1	48A	PM Change: ID PM Feed: ID
3	12/11/18	# of Mortalities	Old D.O. (mg/L)	8.4	RD10	AM Change: AR WQ: AR
		A 0, B 0, C 0, D 0	New D.O. (mg/L)	9.2	RD10	Mortality Counts: AR
		E 0, F 0, G 0, H 0	Temp. (°C)	23.0	48A	PM Change: AR PM Feed: AR
4	12/12/18	# of Mortalities	Old D.O. (mg/L)	8.6	RD13	AM Change: SAT WQ: SAT
		A 0, B 0, C 0, D 0	New D.O. (mg/L)	8.2	RD13	Mortality Counts: ~~0~~ SAT 12/12/18
		E 0, F 0, G 0, H 0	Temp. (°C)	23.2	48A	PM Change: LZ PM Feed: LZ
5	12/13/18	# of Mortalities	Old D.O. (mg/L)	8.7	RD11	AM Change: SAT WQ: SAT
		A 0, B 0, C 0, D 0	New D.O. (mg/L)	7.7	RD11	Mortality Counts: SAT
		E 0, F 0, G 0, H 0	Temp. (°C)	23.1	48A	PM Change: SAT PM Feed: SAT
6	12/14/18	# of Mortalities	Old D.O. (mg/L)	8.1	RD12	AM Change: AR WQ: AR
		A 0, B 0, C 0, D 0	New D.O. (mg/L)	9.0	RD12	Mortality Counts: AR
		E 0, F 0, G 0, H 0	Temp. (°C)	23.1	48A	PM Change: AR PM Feed: AR
7	12/15/18	# of Mortalities	Old D.O. (mg/L)	6.0	RD11	AM Change: TP WQ: TP
		A 0, B 0, C 0, D 0	New D.O. (mg/L)	7.1	RD11	Mortality Counts: TP
		E 0, F 0, G 0, H 0	Temp. (°C)	23.2	48A	PM Change: TP PM Feed: TP
8	12/16/18	# of Mortalities	Old D.O. (mg/L)	6.1	RD12	AM Change: DM WQ: DM
		A 0, B 0, C 0, D 0	New D.O. (mg/L)	6.4	RD12	Mortality Counts: DM
		E 0, F 0, G 0, H 0	Temp. (°C)	23.2	48A	PM Change: MK PM Feed: MK
9	12/17/18	# of Mortalities	Old D.O. (mg/L)	7.7	RD12	AM Change: DM WQ: DM
		A 0, B 0, C 0, D 0	New D.O. (mg/L)	7.9	RD12	Mortality Counts: DM
		E 0, F 0, G 0, H 0	Temp. (°C)	23.3	48A	PM Change: DM PM Feed: DM
10	12/18/18	# Alive	pH	7.94	PH25	WQ: TY
		A 10, B 10, C 10, D 10	D.O. (mg/L)	7.6	RD11	Termination Counts: KL
		E 10, F 10, G 10, H 10	Conductivity (µS/cm)	467	EC11	Termination Time: 1115
			Alkalinity (mg/L) ✓	62.4		
			Hardness (mg/L) ✓	134		
			Ammonia (mg/L)	<1.00	DR3800	
			Temp. (°C)	23.0	48A	

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Analysis ID:	13-1072-0389	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	29 Dec-18 11:44	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	1819-SE68-SC5R failed survival rate	7.56%

Unequal Variance t Two-Sample Test

Sample I vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Control Sed	1819-SE68-SC5R*	7.56	1.89	0.12	7	CDF	6.5E-05	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.91223	0.91223	1	57.1	2.6E-06	Significant Effect
Error	0.223613	0.0159723	14			
Total	1.13584		15			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.26E+14	8.89	<1.0E-37	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.843	0.841	0.0107	Normal Distribution

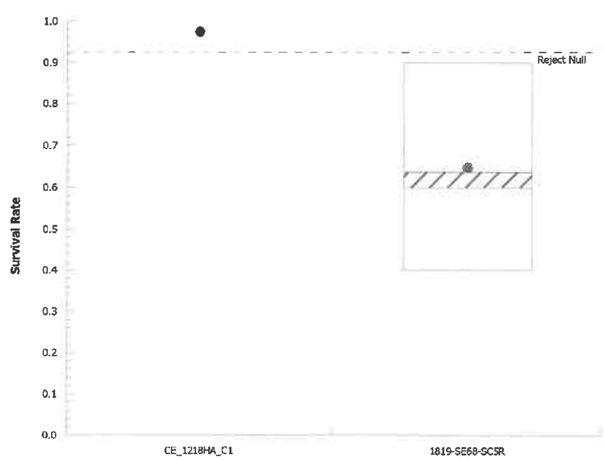
Survival Rate Summary

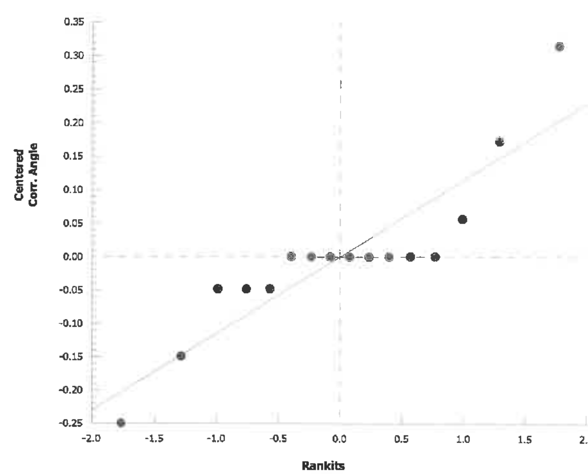
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1218HA_C1	CS	8	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
1819-SE68-SC5R		8	0.638	0.504	0.771	0.600	0.400	0.900	0.057	25.07%	36.25%

Angular (Corrected) Transformed Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1218HA_C1	CS	8	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
1819-SE68-SC5R		8	0.934	0.785	1.08	0.886	0.685	1.25	0.0632	19.13%	33.82%

Graphics





10-Day *Hyalella azteca* Sediment Toxicity Test Data

Client: Condor Earth Project#: 29660 Organism Log #: 11328 Age: 10-11 days

Species: *Hyalella azteca* Test ID#: 80966 Organism Supplier: ABS

Day	Date	Test Material SC-5R				Water Quality Measurements Parameter	Value	Meter ID	Sign-off:
0	12/8/18	# Live Organisms				pH	7.74	PH25	AM Change: AR
		A 10	B 10	C 10	D 10	D.O. (mg/L)	7.5	RD11	WQ: AR
		E 10	F 10	G 10	H 10	Conductivity (µS/cm)	446	EC11	Initiation Time: 1410
						Alkalinity (mg/L)	✓ 54.8		Initiation Counts: TF
						Hardness (mg/L)	✓ 126		Confirmation Counts: JD
						Ammonia (mg/L)	<1.00	DR3800	PM Feed: TF
						Temp. (°C)	22.5	48A	
1	12/9/18	# of Mortalities				Old D.O. (mg/L)	8.3	RD11	AM Change: KL WQ: KL
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.6	RD11	Mortality Counts: KL
		E 0	F 0	G 0	H 0	Temp. (°C)	22.9	48A	PM Change: KL PM Feed: KL
2	12/10/18	# of Mortalities				Old D.O. (mg/L)	8.3	RD13	AM Change: JD WQ: JD
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.4	RD13	Mortality Counts: JD
		E 0	F 0	G 0	H 0	Temp. (°C)	23.0	48A	PM Change: JD PM Feed: JD
3	12/11/18	# of Mortalities				Old D.O. (mg/L)	8.8	RD10	AM Change: AR WQ: AR
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	9.2	RD10	Mortality Counts: AR
		E 0	F 0	G 0	H 0	Temp. (°C)	22.8	48A	PM Change: AR PM Feed: AR
4	12/12/18	# of Mortalities				Old D.O. (mg/L)	8.2	RD13	AM Change: SAT WQ: SAT
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.4	RD13	Mortality Counts: ~~Osr~~ SAT 12/12/18
		E 0	F 0	G 0	H 0	Temp. (°C)	23.0	48A	PM Change: VZ PM Feed: VZ
5	12/13/18	# of Mortalities				Old D.O. (mg/L)	8.7	RD11	AM Change: SAT WQ: SAT
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.9	RD11	Mortality Counts: SAT
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: SAT PM Feed: SAT
6	12/14/18	# of Mortalities				Old D.O. (mg/L)	8.4	RD12	AM Change: AR WQ: AR
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.7	RD12	Mortality Counts: AR
		E 0	F 0	G 0	H 0	Temp. (°C)	23.0	48A	PM Change: AR PM Feed: AR
7	12/15/18	# of Mortalities				Old D.O. (mg/L)	6.8	RD11	AM Change: TP WQ: TP
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.5	RD11	Mortality Counts: TP
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: TP PM Feed: TP
8	12/16/18	# of Mortalities				Old D.O. (mg/L)	5.4	RD12	AM Change: DM WQ: DM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	5.9	RD12	Mortality Counts: DM
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: MK PM Feed: MK
9	12/17/18	# of Mortalities				Old D.O. (mg/L)	7.7	RD12	AM Change: DM WQ: DM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.0	RD12	Mortality Counts: DM
		E 0	F 0	G 0	H 0	Temp. (°C)	23.3	48A	PM Change: DM PM Feed: DM
10	12/18/18	# Alive				pH	7.98	PH25	WQ: KL
		A 6	B 4	C 6	D 8	D.O. (mg/L)	8.0	RD11	Termination Counts: 1330
		E 5	F 9	G 7	H 6	Conductivity (µS/cm)	477	EC11	Termination Time: KL
						Alkalinity (mg/L) ✓	68		
						Hardness (mg/L) ✓	143		
						Ammonia (mg/L)	<1.00	DR3800	
						Temp. (°C)	23.1	48A	

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Analysis ID:	16-2277-8941	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	29 Dec-18 11:44	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	1819-SE68-FD failed survival rate	5.48%

Wilcoxon Rank Sum Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Control Sed		1819-SE68-FD*	40	n/a	1	14	Exact	7.0E-04	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.280062	0.280062	1	36.2	3.2E-05	Significant Effect
Error	0.108354	0.0077396	14			
Total	0.388416		15			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	6.1E+13	8.89	<1.0E-37	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.739	0.841	4.7E-04	Non-Normal Distribution

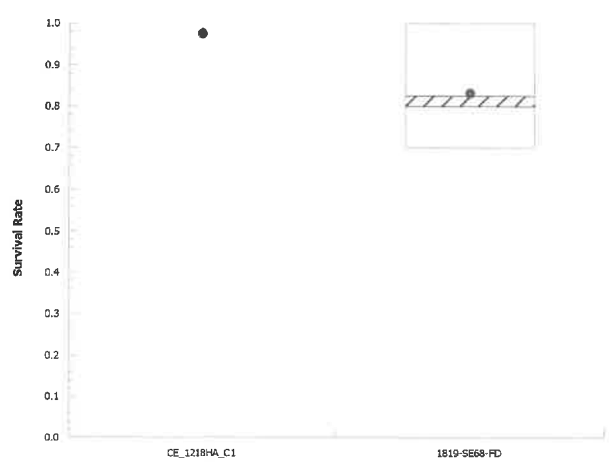
Survival Rate Summary

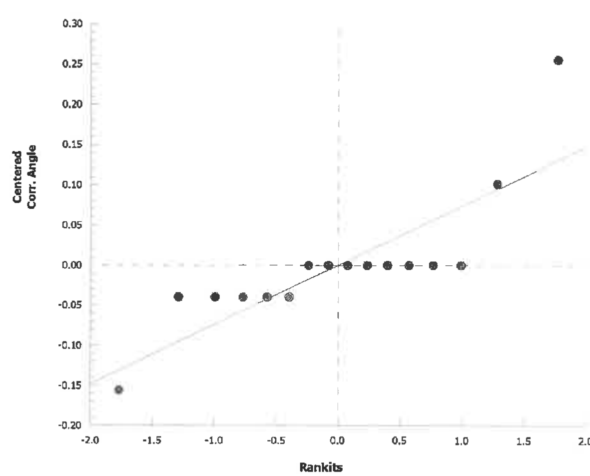
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1218HA_C1	CS	8	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
1819-SE68-FD		8	0.825	0.751	0.899	0.800	0.700	1.000	0.031	10.74%	17.50%

Angular (Corrected) Transformed Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1218HA_C1	CS	8	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
1819-SE68-FD		8	1.15	1.04	1.25	1.11	0.991	1.4	0.044	10.84%	18.74%

Graphics





10-Day *Hyalella azteca* Sediment Toxicity Test Data

Client: **Condor Earth** Project#: **29660** Organism Log #: 11328 Age: 10-11 days

Species: *Hyalella azteca* Test ID#: **80967** Organism Supplier: **ABS**

Day	Date	Test Material: SC-5R-FD				Parameter	Value	Meter ID	Sign-off:
0	12/8/18	# Live Organisms				pH	7.70	PH25	AM Change: AR
		A 10	B 10	C 10	D 10	D.O. (mg/L)	7.7	RD11	WQ: AR
		E 10	F 10	G 10	H 10	Conductivity (µS/cm)	450	EC11	Initiation Time: 1410
						Alkalinity (mg/L)	✓ 58.4		Initiation Counts: TF
						Hardness (mg/L)	✓ 126		Confirmation Counts: [illegible]
						Ammonia (mg/L)	<1.00	DR3800	PM Feed: TF
						Temp. (°C)	22.6	48A	
1	12/9/18	# of Mortalities				Old D.O. (mg/L)	8.3	RD11	AM Change: KY WQ: KY
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.6	RD11	Mortality Counts: KY
		E 0	F 0	G 0	H 0	Temp. (°C)	22.9	48A	PM Change: KY PM Feed: KY
2	12/10/18	# of Mortalities				Old D.O. (mg/L)	7.8	RD13	AM Change: JD WQ: JD
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.2	RD13	Mortality Counts: JD
		E 0	F 0	G 0	H 0	Temp. (°C)	22.6	48A	PM Change: JD PM Feed: JD
3	12/11/18	# of Mortalities				Old D.O. (mg/L)	8.5	RD10	AM Change: AR WQ: AR
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	9.0	RD10	Mortality Counts: AR
		E 0	F 0	G 0	H 0	Temp. (°C)	22.9	48A	PM Change: AR PM Feed: AR
4	12/12/18	# of Mortalities				Old D.O. (mg/L)	8.6	RD13	AM Change: SAT WQ: SAT
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.3	RD13	Mortality Counts: SAT
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: LT PM Feed: LT
5	12/13/18	# of Mortalities				Old D.O. (mg/L)	8.7	RD11	AM Change: SAT WQ: SAT
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.1	RD11	Mortality Counts: SAT
		E 0	F 0	G 0	H 0	Temp. (°C)	23.1	48A	PM Change: SAT PM Feed: SAT
6	12/14/18	# of Mortalities				Old D.O. (mg/L)	8.5	RD12	AM Change: AR WQ: AR
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.4	RD12	Mortality Counts: AR
		E 0	F 0	G 0	H 0	Temp. (°C)	23.2	48A	PM Change: AR PM Feed: AR
7	12/15/18	# of Mortalities				Old D.O. (mg/L)	7.4	RD11	AM Change: TP WQ: TP
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.5	RD11	Mortality Counts: TP
		E 0	F 0	G 0	H 0	Temp. (°C)	23.3	48A	PM Change: TP PM Feed: TP
8	12/16/18	# of Mortalities				Old D.O. (mg/L)	4.6	RD12	AM Change: DM WQ: DM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	6.5	RD12	Mortality Counts: DM
		E 0	F 0	G 0	H 0	Temp. (°C)	23.3	48A	PM Change: MWL PM Feed: MWL
9	12/17/18	# of Mortalities				Old D.O. (mg/L)	7.6	RD12	AM Change: DM WQ: DM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.0	RD12	Mortality Counts: DM
		E 0	F 0	G 0	H 0	Temp. (°C)	23.3	48A	PM Change: DM PM Feed: DM
10	12/18/18	# Alive				pH	7.88	PH25	WQ: KY
		A 8	B 8	C 8	D 8	D.O. (mg/L)	7.8	RD11	Termination Counts: TF
		E 9	F 8	G 9 ~~10~~	H 7	Conductivity (µS/cm)	471	EC11	Termination Time: 1200
						Alkalinity (mg/L) ✓	68.8		
						Hardness (mg/L) ✓	144		
						Ammonia (mg/L)	<1.00	DR3800	
						Temp. (°C)	23.0	48A	

Hyalella 10-d Survival and Growth Sediment Test					Pacific EcoRisk
Analysis ID:	21-4715-8645	**Endpoint:**	Mean Dry Weight-mg	**CETIS Version:**	CETISv1.9.2
Analyzed:	29 Dec-18 11:45	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-SE68-SC5R passed mean dry weight-m	33.35%

Unequal Variance t Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Control Sed		1819-SE68-SC5R	-1.73	1.86	0.027	8	CDF	0.9388	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0024712	0.0024712	1	2.98	0.1061	Non-Significant Effect
Error	0.0115988	0.0008285	14			
Total	0.01407		15			

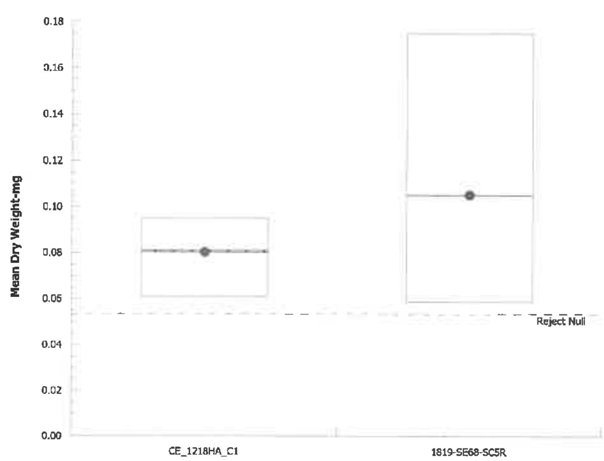
Distributional Tests

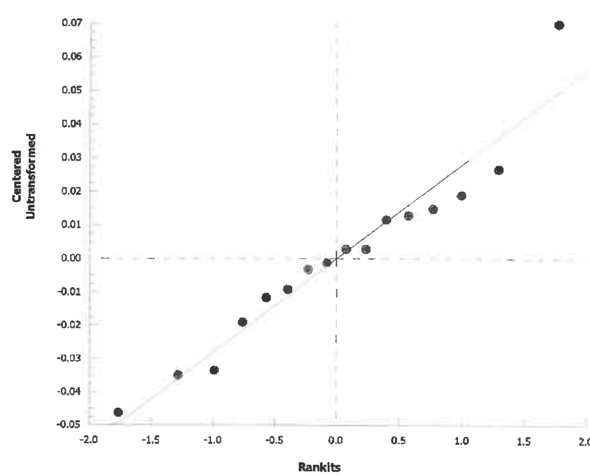
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	12.4	8.89	0.0036	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.95	0.841	0.4932	Normal Distribution

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1218HA_C1	CS	8	0.0803	0.071	0.0895	0.081	0.061	0.095	0.00393	13.84%	0.00%
1819-SE68-SC5R		8	0.105	0.0724	0.138	0.105	0.0587	0.175	0.0138	37.26%	-30.97%

Graphics





Hyalella azteca Weight Data Sheets

Client:	**Condor Earth**	Project #:	**29660**	Balance ID:	BAL 04
Sample ID:	SC-5R	Tare Wt Date:	12/10/18	Sign-Off:	HR
Test ID #:	**80966**	Final Wt Date:	12/19/18	Sign-Off:	JD

Pan	Concentration Replicate		Initial Weight. (mg)	Final Weight. (mg)	# organisms	Ave Weight (mg)
1	Control	A	62.25	63.20	10	0.0950
2	Sediment	B	62.56	63.49	10	0.0930
3		C	65.00	65.71	10	0.0710
4		D	58.50	59.29	10	0.0790
5		E	68.38	69.21	10	0.0830
6		F	76.48	77.25	10	0.0770
7		G	66.02	66.85	10	0.0830
8		H	65.51	66.12	10	0.0610
9	SC-5R	A	60.90	61.46	6	0.0933
10		B	63.00	63.70	4	0.1750
11		C	65.05	65.84	6	0.1317
12		D	61.40	61.87	8	0.0587
13		E	59.36	59.98	5	0.1240
14		F	60.82	61.45	9	0.0700
15		G	69.05	69.55	7	0.0714
16		H	71.33	72.03	6	0.1167
QA~~3~~1			58.51	58.53		

CP 12/8/18

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Analysis ID:	16-9343-8194	**Endpoint:**	Mean Dry Weight-mg	**CETIS Version:**	CETISv1.9.2
Analyzed:	29 Dec-18 11:45	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-SE68-FD failed mean dry weight-mg	17.95%

Equal Variance t Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Control Sed		1819-SE68-FD*	4.65	1.76	0.014	14	CDF	1.9E-04	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0057755	0.0057755	1	21.6	3.8E-04	Significant Effect
Error	0.0037463	0.0002676	14			
Total	0.0095218		15			

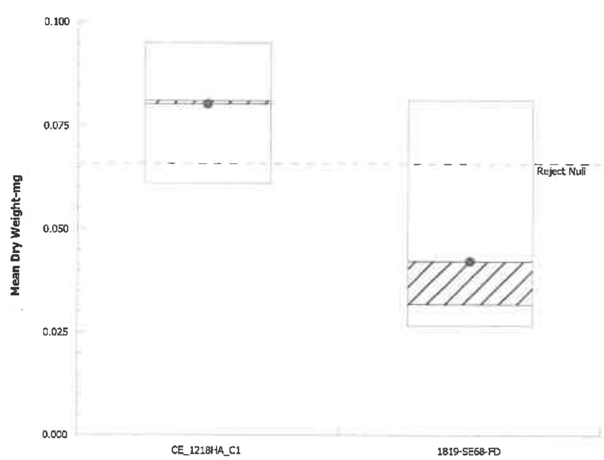
Distributional Tests

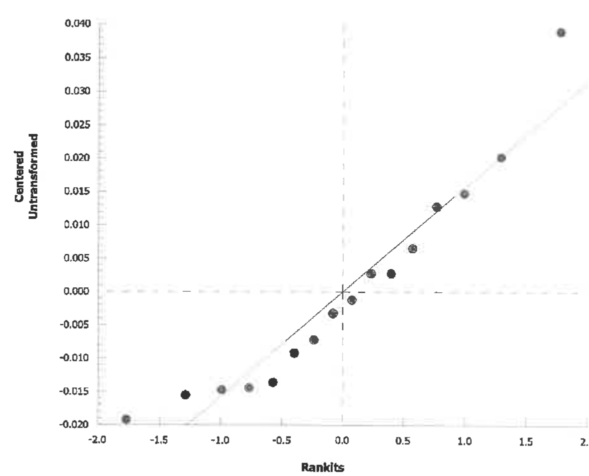
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	3.34	8.89	0.1343	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.92	0.841	0.1702	Normal Distribution

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1218HA_C1	CS	8	0.0803	0.071	0.0895	0.081	0.061	0.095	0.00393	13.84%	0.00%
1819-SE68-FD		8	0.0423	0.0253	0.0592	0.0318	0.0267	0.0812	0.00717	48.03%	47.35%

Graphics





Hyalella azteca Weight Data Sheets

Client:	**Condor Earth**	Project #:	**29660**	Balance ID:	BAL04
Sample ID:	SC-5R-FD	Tare Wt Date:	12/10/18	Sign-Off:	JR
Test ID #:	**80967**	Final Wt Date:	12/14/18	Sign-Off:	ID

Pan	Concentration Replicate		Initial Weight. (mg)	Final Weight. (mg)	# organisms	Ave Weight (mg)
1	Control	A	62.25	63.20	10	0.0950
2	Sediment	B	62.56	63.49	10	0.0930
3		C	65.00	65.71	10	0.0710
4		D	58.50	59.29	10	12/31/18 ~~0.0850~~ 0.0790
5		E	68.38	69.21	10	12/31/18 ~~0.0770~~ 0.0830
6		F	76.48	77.25	10	12/31/18 ~~0.0830~~ 0.0770
7		G	66.02	66.85	10	0.0830
8		H	65.51	66.12	10	0.0610
17	SC-5R-FD	A	66.48	67.13	8	0.0812
18		B	60.12	60.62	8	0.0625
19		C	61.45	61.73	8	0.0350
20		D	68.12	68.51	8	0.0488
21		E	73.07	73.31	9	0.0267
22		F	63.13	63.35	8	0.0275
23		G	64.95	65.20	~~10~~ 9 TF 12/18/18	0.0278
24		H	60.39	60.59	7	0.0286
QA3			58.51	58.53		

JR 12/10/18

Hyalella azteca Weight Data Sheets

Client: **Condor Earth** Test Init Date: ~~12/8/18~~ AR 12/8/18 Balance ID: BAL-04

Sample ID: **T0** Tare Wt Date: 12/8/18 Sign-Off: AR

Test ID: 80966-80967 Final Wt Date: 12/11/18 Sign-Off: AR

Project #: 29660

Pan	Concentration	Replicate	Initial Weight. (mg)	Final Weight. (mg)	# Organisms	Ave Weight (mg)
1	T0	A	69.77	70.22	10	0.045
2		B	58.57	58.83	10	0.026
3		C	62.63	63.03	10	0.040
4		D	61.40	61.84	10	0.044
5		E	63.66	64.02	10	0.036
6		F	58.46	58.68	10	0.022
7		G	61.39	61.81	10	0.042
8		H	65.98	66.53	10	0.055
QA			55.96	55.94		

This page intentionally left blank for printing purposes

Sediment Toxicity Lab Report
June 20, 2019 at SC-5R
Dry Weather Event

This page intentionally left blank for printing purposes

Micheline Kipf
Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

July 10, 2019

Dear Micheline:

I have enclosed a copy of our report "An Evaluation of the Toxicity of City of Stockton Stormwater Program Sediment Samples" for the samples that were collected June 19, 2019. The results of this testing are summarized below:

Summary of Stockton Stormwater Program sediment effects on *Hyalella azteca*.

Sample Station	Toxicity Present Relative to Lab Control?	
	Survival	Growth
SC-5R	**YES**	no
FD	**YES**	no

If you have any questions regarding the performance and interpretation of this testing, please contact my colleague Stephen Clark or myself at (707) 207-7760.

Sincerely,

Michael McElroy
Senior Project Manager

An Evaluation of the Toxicity of City of Stockton Stormwater Program Sediment Samples

Samples collected June 19, 2019

Prepared For:

Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

Prepared By:

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534
(707) 207-7760

July 2019

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING

An Evaluation of the Toxicity of City of Stockton Stormwater Program Sediment Samples

Samples collected June 19, 2019

Table of Contents

Appendices

1. INTRODUCTION

In compliance with the City of Stockton Stormwater Program NPDES permit monitoring requirements, Condor Earth Technologies, Inc., has contracted Pacific EcoRisk (PER) to perform evaluations of the toxicity of selected ambient water and sediment samples. The current testing event was designed to meet the sediment monitoring requirements using sediment samples that were collected on June 19, 2019. This evaluation consisted of performing the US EPA 10-day survival and growth test with the amphipod *Hyalella azteca*. This report describes the performance and results of this testing.

2. SEDIMENT TOXICITY TEST PROCEDURES

This testing followed the guidelines established by the EPA manual "Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates, Second Edition" (EPA/600/R-99/064).

2.1 Receipt and Handling of the Sediment Samples

On June 19, sediment samples were collected into appropriately cleaned sample containers. These samples were transported on ice and under chain-of-custody, to the PER laboratory in Fairfield, CA (Table 1). The samples were then stored at ≤6˚C until being used to initiate toxicity tests within 14 days of collection. The chain-of-custody record for the collection and delivery of the samples is presented in Appendix A.

Table 1. Sampling station and date of sediment collection for the Stockton Stormwater Program.

Sample Station	Date Collected	Date Received
SC-5R	6/19/19	6/20/19
FD	6/19/19	6/20/19

2.2 Solid-Phase Sediment Toxicity Testing with *Hyalella azteca*

The freshwater sediment toxicity test with *H. azteca* consists of exposing the amphipods to the sediment for 10 days, after which effects on survival are evaluated. The specific procedures used in these tests are described below.

The *H. azteca* used in these tests were obtained from a commercial supplier (Aquatic BioSystems, Fort Collins, CO). Upon receipt at the lab, the test organisms were held in tanks of SAM-5S at 23˚C, modified for use with *H. azteca* as per the EPA test guidelines, and were fed YCT and *Selenastrum* food.

Each sediment sample was tested at the 100% concentration only. The Lab Control treatment sediment consisted of a reference site sediment collected from Spring River, MO, which is also used by the USGS laboratory in Columbia, MO. There were 8 replicates for each test treatment.

Each replicate container consisted of a 300-mL tall-form glass beaker with a 3-cm ribbon of 540-µm mesh NITEX attached to the top of the beaker with silicone sealant. Each of the sediment samples was re-homogenized immediately prior to introduction of the sediments into the test replicates. Approximately 100 mL of the homogenized sediment was loaded into each test replicate container. Each of the test replicates was then carefully filled with clean overlying water (SAM-5S). The replicates with sediments and clean overlying water were established approximately 24 hours prior to the introduction of the amphipods.

After this initial 24 hour period, the overlying water in each replicate was flushed with one volume (approximately 150 mL) of fresh overlying water. A small aliquot of the renewed overlying water in each of the 8 replicates per treatment was then collected and composited for measurement of "initial" water quality characteristics (pH, D.O., conductivity, alkalinity, hardness, and total ammonia). The tests were initiated with the random allocation of ten 10-11 day old amphipods into each replicate, followed by the addition of 1.0 mL of *Spirulina*-amended YCT food. The test replicates were then returned to the room.

Each day, for the following 9 days, each test replicate was examined for the presence of any dead amphipods. A small aliquot of the overlying water in each of the 8 replicates (per treatment) was then collected and composited as before for measurement of "old" D.O., after which each replicate was flushed with one volume of fresh water. Another small aliquot of the overlying water in each of the 8 replicates was then collected and composited as before for measurement of "new" D.O., after which each replicate was fed 1.0 mL of *Spirulina*-amended YCT.

After 10 days exposure, an aliquot of overlying water was collected from each replicate and composited for analysis of the "final" water quality characteristics. The sediments in each replicate were then carefully sorted and sieved, and the number of surviving amphipods determined. The resulting survival data were analyzed to evaluate any impairment due to the ambient sediments. Statistical analyses were performed using CETIS® (TidePool Scientific Software, McKinleyville, CA).

3. RESULTS

Test results are summarized in Table 2. There were significant reductions in survival in the SC-5R and field duplicate (FD) sediment samples; there were no significant reductions in growth in either sample. The test data and summary of statistical analyses for this testing are presented in Appendix B.

Table 2. Data summary for the Stockton Stormwater Program sediment samples.

Test Treatment	% Survival	% Reduction	Toxic? (Y/N)	Mean dry weight (mg)	% Reduction	Toxic? (Y/N)
Control	97.5	N/A	N/A	0.055	N/A	N/A
SC-5R	**27.5***	71.8%	**Y**	0.122	-124%	N
FD	**26.2***	73.1%	**Y**	0.208	-282%	N

* The response at this test treatment was significantly less than the Control sediment response (at $p<0.05$).

4. SUMMARY AND CONCLUSIONS

The results of this testing are summarized below. There were significant reductions in survival in the SC-5R and field duplicate (FD) sediment samples; there were no significant reductions in growth in either sample.

Summary of Stockton Stormwater Program sediment effects on *Hyalella azteca*.

Sample Station	Toxicity Present Relative to Lab Control?	
	Survival	Growth
SC-5R	**YES**	no
FD	**YES**	no

4.1 QA/QC Summary

Test Conditions –All test conditions (pH, D.O., temperature, etc.) were within acceptable limits. All analyses were performed according to laboratory Standard Operating Procedures.

Negative Control – The biological responses for the test organisms at the Lab Control treatment were within acceptable limits.

Appendix A

Chain-of-Custody Record for the Collection and Delivery of the Stockton Stormwater Program Sediment Samples

This page intentionally left blank for printing purposes

Condor Earth Technologies, Inc.

CONDOR

Sample Results TAT: ☐ Rush ☑ Standard

☐ PO Box 3905/21663 Brian Lane, Sonora, CA 95370, 209.532.0361, 209.532.0773 fax
☑ 188 Frank West Circle, Suite I, Stockton, CA 95206, 209.234.0518, 209.234.0538 fax
☐ 2941 Sunrise Blvd, Suite 150, Rancho Cordova, CA 95742, 916.783.2060, 916.783.2464 fax
☐ 1739 Ashby Road, Suite B, Merced, CA 95348, 209.388.9601, 209.388.1778 fax

SHIPPED TO:

Pacific EcoRisk
2250 Cordelia Road
Fairfield CA 94534 (707) 207-7760

SEND RESULTS TO:

NAME: Micheline Doyle Kipf
E-MAIL: mkipf@condorearth.com
E-MAIL:

☑ PLEASE FAX/EMAIL RESULTS TO ADDRESS MARKED ABOVE

PROJECT NAME/LOCATION: COS Urban Discharge
EDF RESULTS REQUIRED ☑ YES ☐ NO
SITE GLOBAL ID: CEDEN Format Requested
PROJECT NO.: 6066J-06-01
SAMPLED BY: (Signature) Rebecca Fox / Matt Rodgers

Date	Time	Sample Site Name	Sample ID (if different)	Matrix	# of containers	Preservatives (see below)	ANALYSIS /METHOD:	Field Filtered	Hyalella azteca*	TOC	Grain Size						REMARKS	LAB ID#
6/19/19	0920	1819-DW38-	SC-5R	S		1		N	✓	✓	✓						*chronic freshwater (EPA/600/4-91/003)	
6/19/19	1000	1819-DW38-	FD	W		1		N	✓	✓	✓						Hyalella azteca survival & growth	
																	Sub samples to CalTest to	
																	Conduct additional pyrethroids	
																	analyses if toxicity is observed	
																	(per program requirements)	
																	TOC RL = 1 mg/L	

Relinquished By: (Signature)	Date	Time	Received By: (Signature)	Date	Time
Matt R	6-20-19	1230	[signature]	6/20/19	1230
			Santa Thomas	6/20/19	1405

Matrix: DW Drinking Water; WW Waste Water; HWW Hazardous Waste (Water); S Soil/Solid; SW Storm Water; GW Ground Water

Preservative: 1 4°C; 2 HCL; 3 NaOH; 4 $Na_2S_2O_3$; 5 HNO_3; 6 H_2SO_4; 7 Other_____

Original – Send Yellow – File Pink – Log Book

This page intentionally left blank for printing purposes

Appendix B

Test Data and Summary of Statistics for the Evaluation of the Toxicity of the Stockton Stormwater Program Sediment Samples to *Hyalella azteca*

This page intentionally left blank for printing purposes

CETIS Summary Report

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Batch ID:	18-4854-2688	**Test Type:**	Survival-Growth (10 day)	**Analyst:**	Robert Gee
Start Date:	22 Jun-19 11:27	**Protocol:**	EPA/600/R-99/064 (2000)	**Diluent:**	Not Applicable
Ending Date:	02 Jul-19 10:54	**Species:**	Hyalella azteca	**Brine:**	Not Applicable
Test Length:	9d 23h	**Taxon:**	Malacostraca	**Source:**	Aquatic Biosystems, CO **Age:** 11

Sample Code	Sample ID	Sample Date	Receipt Date	Sample Age	Client Name	Project
CE_0619HA_C1	05-7061-5771	22 Jun-19 11:27	22 Jun-19 11:27	n/a (22.2 °C)	Condor Earth Technologi	30078
1819-DW38-SC5R	02-3465-2438	19 Jun-19 09:20	20 Jun-19 14:05	74h (1.7 °C)		
1819-DW38-FD	12-9591-0121	19 Jun-19 10:00	20 Jun-19 14:05	73h (1.7 °C)		

Sample Code	Material Type	Sample Source	Station Location	Lat/Long
CE_0619HA_C1	Sediment	Condor Earth Technologies	LABQA	
1819-DW38-SC5R	Sediment	Condor Earth Technologies	1819-DW38	
1819-DW38-FD	Sediment	Condor Earth Technologies		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
06-5279-2923	Mean Dry Weight-mg	Unequal Variance t Two-Sample Test	0.9557	1819-DW38-SC5R passed mean dry weig	1
11-9901-3606	Mean Dry Weight-mg	Unequal Variance t Two-Sample Test	0.9994	1819-DW38-FD passed mean dry weight-	1
03-7524-8055	Survival Rate	Wilcoxon Rank Sum Two-Sample Test	7.8E-05	1819-DW38-SC5R failed survival rate	1
03-7954-3934	Survival Rate	Equal Variance t Two-Sample Test	<1.0E-37	1819-DW38-FD failed survival rate	1

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_0619HA_C1	CS	8	0.0545	0.0457	0.0633	0.041	0.0763	0.00371	0.0105	19.27%	0.00%
1819-DW38-SC5R		8	0.122	0.0418	0.202	0.0325	0.295	0.0339	0.0959	78.66%	-123.69%
1819-DW38-FD		8	0.208	0.139	0.277	0.11	0.365	0.0293	0.0829	39.79%	-281.85%

Survival Rate Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_0619HA_C1	CS	8	0.975	0.916	1.000	0.800	1.000	0.025	0.071	7.25%	0.00%
1819-DW38-SC5R		8	0.275	0.188	0.362	0.100	0.400	0.037	0.104	37.64%	71.79%
1819-DW38-FD		8	0.262	0.186	0.339	0.200	0.400	0.032	0.092	34.90%	73.08%

Mean Dry Weight-mg Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
CE_0619HA_C1	CS	0.0763	0.056	0.041	0.051	0.051	0.052	0.061	0.048
1819-DW38-SC5R		0.05	0.0325	0.295	0.19	0.0467	0.193	0.123	0.045
1819-DW38-FD		0.11	0.122	0.365	0.26	0.175	0.19	0.19	0.253

Survival Rate Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
CE_0619HA_C1	CS	0.800	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1819-DW38-SC5R		0.200	0.400	0.200	0.100	0.300	0.300	0.300	0.400
1819-DW38-FD		0.400	0.400	0.200	0.200	0.200	0.200	0.200	0.300

Survival Rate Binomials

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
CE_0619HA_C1	CS	8/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10
1819-DW38-SC5R		2/10	4/10	2/10	1/10	3/10	3/10	3/10	4/10
1819-DW38-FD		4/10	4/10	2/10	2/10	2/10	2/10	2/10	3/10

10-Day *Hyalella azteca* Sediment Toxicity Test Data

TF 6/22/19

Client: Condor Earth Project#: 30078 Organism Log #: 11652 Age: ~~9~~ 10-11 days

Species: *Hyalella azteca* Test ID#: 83055 Organism Supplier: ABS

Day	Date	Test Material: Control				Water Quality Measurements: Parameter	Value	Meter ID	Sign-off:
0	6/22/19	# Live Organisms				pH	7.51	PH26	AM Change: JR
		A 10	B 10	C 10	D 10	D.O. (mg/L)	8.7	RD12	WQ: JR
		E 10	F 10	G 10	H 10	Conductivity (µS/cm)	448	EC14	Initiation Time: 1127
						Alkalinity (mg/L)	✓ 62		Initiation Counts: TF
						Hardness (mg/L)	✓ 152		Confirmation Counts: TK
						Ammonia (mg/L)	<1.00	DR3800	PM Feed: JR
						Temp. (°C)	22.2	113A	
1	6/23/19	# of Mortalities				Old D.O. (mg/L)	7.2	RD13	AM Change: NN WQ: NN
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.1	RD13	Mortality Counts: NN
		E 0	F 0	G 0	H 0	Temp. (°C)	22.1	113A	PM Change: NN PM Feed: NN
2	06/24/19	# of Mortalities				Old D.O. (mg/L)	7.0	RD12	AM Change: ID WQ: ID
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.7	RD12	Mortality Counts: ID
		E 0	F 0	G 0	H 0	Temp. (°C)	22.2	54	PM Change: ID PM Feed: ID
3	06/25/19	# of Mortalities				Old D.O. (mg/L)	6.3	RD12	AM Change: NN WQ: NN
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.7	RD12	Mortality Counts: NN
		E 0	F 0	G 0	H 0	Temp. (°C)	22.1	81A	PM Change: KG PM Feed: KG
4	6/26/19	# of Mortalities				Old D.O. (mg/L)	6.8	RD12	AM Change: TF WQ: TF
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.6	RD12	Mortality Counts: TF
		E 0	F 0	G 0	H 0	Temp. (°C)	22.2	57	PM Change: AR PM Feed: AR
5	6/27/19	# of Mortalities				Old D.O. (mg/L)	6.7	RD13	AM Change: SAT WQ: SAT
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.6	RD13	Mortality Counts: SAT
		E 0	F 0	G 0	H 0	Temp. (°C)	NM	—	PM Change: ID PM Feed: ID
6	6/28/19	# of Mortalities				Old D.O. (mg/L)	5.9	RD11	AM Change: SAT WQ: SAT
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.7	RD11	Mortality Counts: SAT
		E 0	F 0	G 0	H 0	Temp. (°C)	22.0	54	PM Change: SAT PM Feed: SAT
7	6/29/19	# of Mortalities				Old D.O. (mg/L)	6.3	RD12	AM Change: BM WQ: BM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.5	RD12	Mortality Counts: BM
		E 0	F 0	G 0	H 0	Temp. (°C)	22.0	106A	PM Change: BM PM Feed: BM
8	6/30/19	# of Mortalities				Old D.O. (mg/L)	6.5	RD10	AM Change: BM WQ: BM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.8	RD10	Mortality Counts: BM
		E 0	F 0	G 0	H 0	Temp. (°C)	22.1	106A	PM Change: TK PM Feed: TK
9	7/01/19	# of Mortalities				Old D.O. (mg/L)	5.6	RD10	AM Change: NN WQ: NN
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.3	RD10	Mortality Counts: NN
		E 0	F 0	G 0	H 0	Temp. (°C)	22.0	106A	PM Change: NN PM Feed: NN
10	7/2/19	# Alive				pH	7.37	PH25	WQ: SAT
		A 8	B 10	C 10	D 10	D.O. (mg/L)	5.2	RD13	Termination Counts: TF
		E 10	F 10	G 10	H 10	Conductivity (µS/cm)	453	EC13	Termination Time: 1054
						Alkalinity (mg/L)	✓ ~~107~~ [illegible]		
						Hardness (mg/L)	✓ 197		
						Ammonia (mg/L)	<1.00	DR3800	
						Temp. (°C)	22.1	106A	

CETIS Analytical Report

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Analysis ID:	03-7524-8055	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	04 Jul-19 13:11	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	1819-DW38-SC5R failed survival rate	6.32%

Wilcoxon Rank Sum Two-Sample Test

Sample I vs	Sample II	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Control Sed	1819-DW38-SC5R*	36	n/a	0	14	Exact	7.8E-05	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.7505	2.7505	1	206	<1.0E-37	Significant Effect
Error	0.187045	0.0133603	14			
Total	2.93755		15			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.3	8.89	0.7381	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.769	0.841	0.0011	Non-Normal Distribution

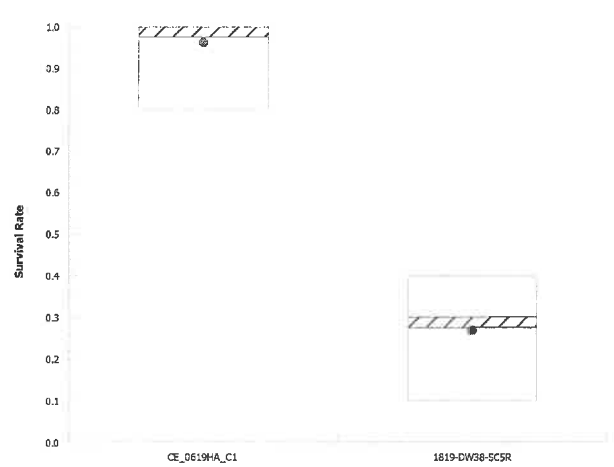
Survival Rate Summary

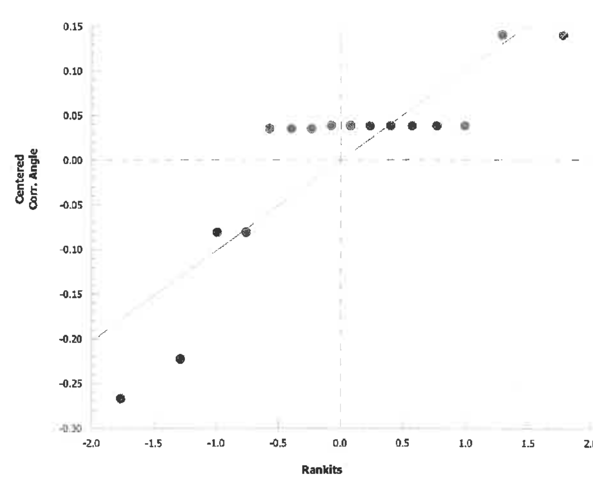
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0619HA_C1	CS	8	0.975	0.916	1.000	1.000	0.800	1.000	0.025	7.25%	0.00%
1819-DW38-SC5R		8	0.275	0.188	0.362	0.300	0.100	0.400	0.037	37.64%	71.79%

Angular (Corrected) Transformed Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0619HA_C1	CS	8	1.37	1.28	1.46	1.41	1.11	1.41	0.0381	7.85%	0.00%
1819-DW38-SC5R		8	0.545	0.442	0.647	0.58	0.322	0.685	0.0434	22.56%	60.36%

Graphics





 Analyst: RG QA: [illegible]

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Analysis ID:	06-5279-2923	**Endpoint:**	Mean Dry Weight-mg	**CETIS Version:**	CETISv1.9.2
Analyzed:	04 Jul-19 13:11	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-DW38-SC5R passed mean dry weight-	118.56%

Unequal Variance t Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Control Sed		1819-DW38-SC5R	-1.98	1.89	0.065	7	CDF	0.9557	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0181964	0.0181964	1	3.91	0.0681	Non-Significant Effect
Error	0.0652121	0.0046580	14			
Total	0.0834086		15			

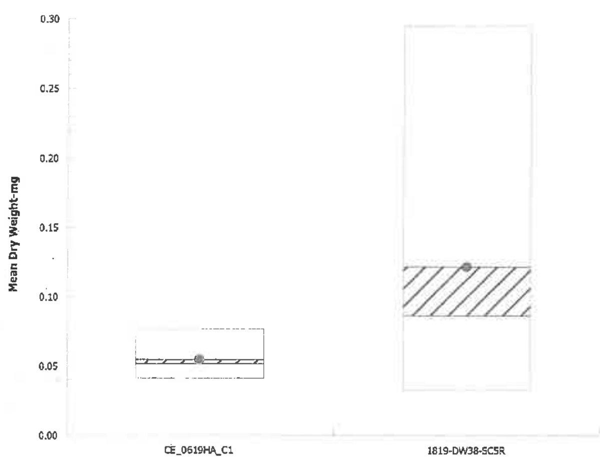
Distributional Tests

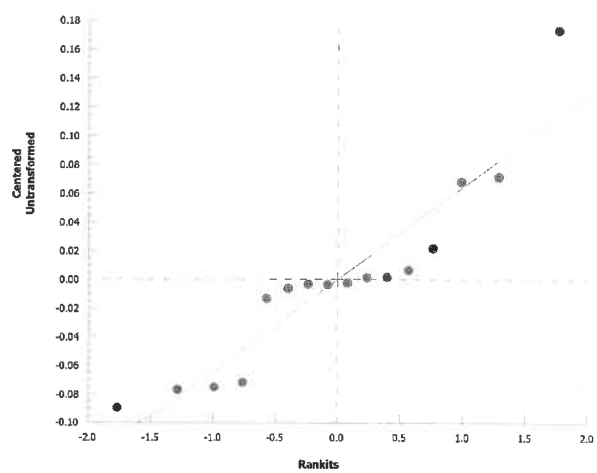
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	83.4	8.89	6.6E-06	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.882	0.841	0.0414	Normal Distribution

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0619HA_C1	CS	8	0.0545	0.0457	0.0633	0.0515	0.041	0.0763	0.00371	19.27%	0.00%
1819-DW38-SC5R		8	0.122	0.0418	0.202	0.0867	0.0325	0.295	0.0339	78.66%	-123.69%

Graphics





10-Day *Hyalella azteca* Sediment Toxicity Test Data

Client: Condor Earth Project#: 30078 Organism Log #: 11652 Age: 10-11 days

Species: *Hyalella azteca* Test ID#: 83055 Organism Supplier: ABS

Day	Date	Test Material: 1819-DW38-SC5R				Water Quality Measurements: Parameter	Value	Meter ID	Sign-off
0	6/22/19	# Live Organisms				pH	7.50	PH26	AM Change: JR
		A 10	B 10	C 10	D 10	D.O. (mg/L)	7.9	RD12	WQ: JR
		E 10	F 10	G 10	H 10	Conductivity (µS/cm)	424	EC14	Initiation Time: 1127
						Alkalinity (mg/L)	✓ 62.8		Initiation Counts: TK
						Hardness (mg/L)	✓ 138		Confirmation Counts: TK
						Ammonia (mg/L)	1.06	DR3800	PM Feed: JR
						Temp. (°C)	22.2	113A	
1	6/23/19	# of Mortalities				Old D.O. (mg/L)	7.7	RD13	AM Change: NN WQ: NN
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.1	RD13	Mortality Counts: NN
		E 0	F 0	G 0	H 0	Temp. (°C)	22.1	113A	PM Change: NN PM Feed: NN
2	06/24/19	# of Mortalities				Old D.O. (mg/L)	6.2	RD12	AM Change: ID WQ: ID
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.4	RD12	Mortality Counts: ID
		E 0	F 0	G 0	H 0	Temp. (°C)	22.2	54	PM Change: ID PM Feed: ID
3	6/25/19	# of Mortalities				Old D.O. (mg/L)	6.0	RD12	AM Change: NN WQ: NN
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.0	RD12	Mortality Counts: NN
		E 0	F 0	G 0	H 0	Temp. (°C)	22.1	81A	PM Change: KG PM Feed: KG
4	6/26/19	# of Mortalities				Old D.O. (mg/L)	6.1	RD12	AM Change: ZJ WQ: ZJ
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.6	RD12	Mortality Counts: ZJ
		E 0	F 0	G 0	H 0	Temp. (°C)	22.2	57	PM Change: AR PM Feed: AR
5	6/27/19	# of Mortalities				Old D.O. (mg/L)	6.3	RD13	AM Change: SAT WQ: SAT
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.7	RD13	Mortality Counts: SAT
		E 0	F 0	G 0	H 0	Temp. (°C)	NM	—	PM Change: ID PM Feed: ID
6	6/28/19	# of Mortalities				Old D.O. (mg/L)	5.8	RD11	AM Change: SAT WQ: SAT
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.2	RD11	Mortality Counts: SAT
		E 0	F 0	G 0	H 0	Temp. (°C)	22.0	54	PM Change: SAT PM Feed: SAT
7	6/29/19	# of Mortalities				Old D.O. (mg/L)	6.4	RD12	AM Change: BM WQ: BM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.7	RD12	Mortality Counts: BM
		E 0	F 0	G 0	H 0	Temp. (°C)	22.1	106A	PM Change: BM PM Feed: BM
8	6/30/19	# of Mortalities				Old D.O. (mg/L)	6.4	RD10	AM Change: BM WQ: BM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.1	RD10	Mortality Counts: BM
		E 0	F 0	G 0	H 0	Temp. (°C)	22.0	106A	PM Change: TK PM Feed: TK
9	7/01/19	# of Mortalities				Old D.O. (mg/L)	6.1	RD10	AM Change: NN WQ: NN
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.5	RD10	Mortality Counts: NN
		E 0	F 0	G 0	H 0	Temp. (°C)	22.0	106A	PM Change: NN PM Feed: NN
10	7/2/19	# Alive				pH	7.28	pH25	WQ: SAT
		A 2	B 4	C 2	D 1	D.O. (mg/L)	5.5	RD13	Termination Counts: KL
		E 3	F 3	G 3	H 4	Conductivity (µS/cm)	423	EC13	Termination Time: 0930
						Alkalinity (mg/L)	✓ 35.6		
						Hardness (mg/L)	✓ 126		
						Ammonia (mg/L)	<1.00	DR3800	
						Temp. (°C)	22.1	106A	

Hyalella azteca Weight Data Sheets

Client:	**Condor Earth**	Project #:	**30078**	Balance ID:	Bal 04
Sample ID:	1819-DW38-SC5R	Tare Wt Date:	6/25/19	Sign-Off:	AR
Test ID #:	**83055**	Final Wt Date:	7/3/19	Sign-Off:	SAT

Pan	Concentration Replicate		Initial Weight. (mg)	Final Weight. (mg)	# organisms	Ave Weight (mg)
1	Control	A	62.78	63.39	~~2~~ 8	0.0763
2	Sediment	B	75.40	75.96	~~4~~ 10	0.056
3		C	67.99	68.40	~~2~~ 10	0.041
4		D	68.40	68.91	~~7~~ 10	0.051
5		E	65.13	65.64	~~5~~ 10	0.051
6		F	72.04	72.56	10	0.052
7		G	75.49	76.10	10	0.061
8		H	60.25	60.73	10	0.048
9	SC5R	A	66.27	66.37	2	0.050
10		B	70.59	70.72	4	0.0325
11		C	78.22	78.81	2	0.295
12		D	69.44	69.63	1	0.190
13		E	67.12	67.26	3	0.0467
14		F	67.94	68.52	3	0.193
15		G	67.76	68.13	3	0.123
16		H	69.57	69.75	4	0.045
QA1			62.15	62.15		–
QA2			68.98	69.02		
QA3			76.81	76.75		

Hyalella 10-d Survival and Growth Sediment Test				Pacific EcoRisk
Analysis ID: 03-7954-3934	**Endpoint:** Survival Rate		**CETIS Version:**	CETISv1.9.2
Analyzed: 04 Jul-19 13:11	**Analysis:** Parametric-Two Sample		**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	1819-DW38-FD failed survival rate	5.77%

Equal Variance t Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Control Sed		1819-DW38-FD*	16	1.76	0.092	14	CDF	<1.0E-37	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.82572	2.82572	1	258	<1.0E-37	Significant Effect
Error	0.153586	0.0109704	14			
Total	2.9793		15			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.13	8.89	0.8801	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.847	0.841	0.0125	Normal Distribution

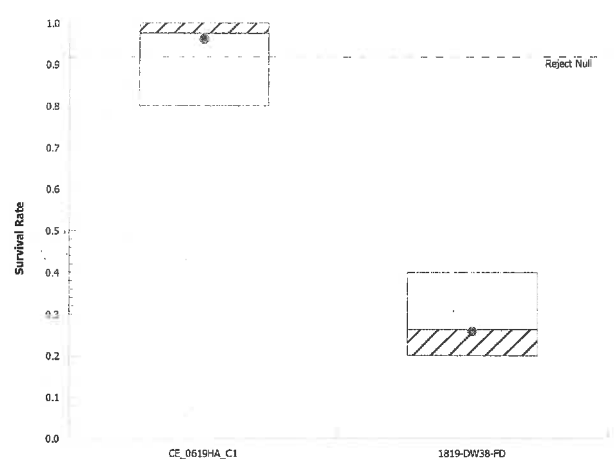
Survival Rate Summary

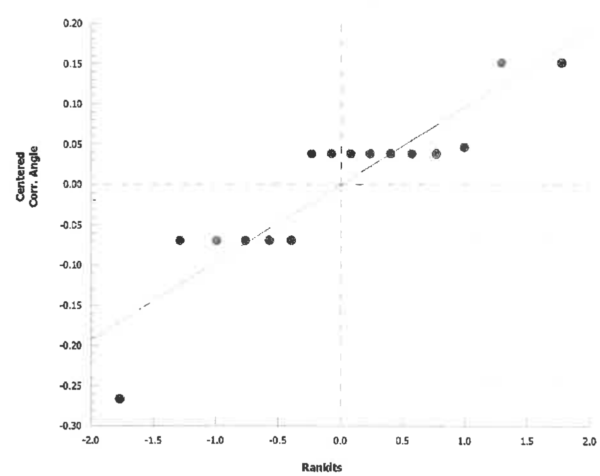
Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0619HA_C1	CS	8	0.975	0.916	1.000	1.000	0.800	1.000	0.025	7.25%	0.00%
1819-DW38-FD		8	0.263	0.186	0.339	0.200	0.200	0.400	0.032	34.90%	73.08%

Angular (Corrected) Transformed Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0619HA_C1	CS	8	1.37	1.28	1.46	1.41	1.11	1.41	0.0381	7.85%	0.00%
1819-DW38-FD		8	0.533	0.448	0.618	0.464	0.464	0.685	0.0359	19.05%	61.18%

Graphics





CETIS Analytical Report

Report Date: 08 Jul-19 16:28 (p 1 of 1)
Test Code/ID: CE_0619HA_C1 / 08-4491-9923

Hyalella 10-d Survival and Growth Sediment Test — Pacific EcoRisk

Analysis ID:	11-9901-3606	**Endpoint:**	Mean Dry Weight-mg	**CETIS Version:**	CETISv1.9.6
Analyzed:	08 Jul-19 16:27	**Analysis:**	Parametric-Two Sample	**Status Level:**	1

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-DW38-FD passed mean dry weight-mg	102.59%

Unequal Variance t Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Control Sed		1819-DW38-FD	-5.2	1.89	0.056	7	CDF	0.9994	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0944914	0.0944914	1	27.1	1.3E-04	Significant Effect
Error	0.0488313	0.003488	14			
Total	0.143323		15			

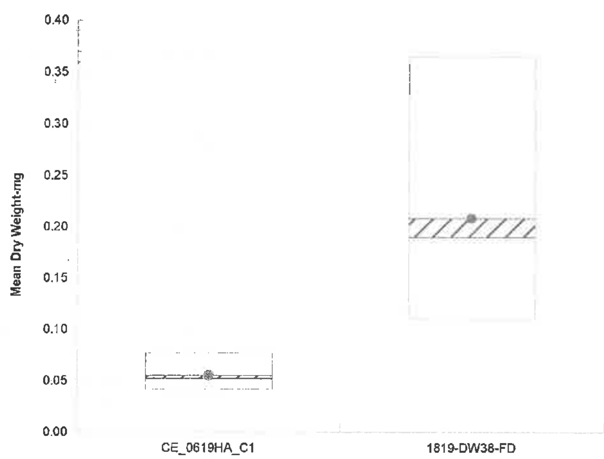
ANOVA Assumptions Tests

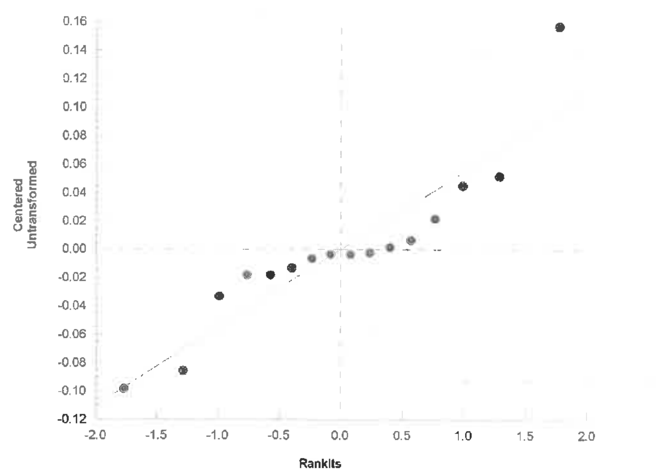
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test	62.2	8.89	1.8E-05	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.877	0.841	0.0354	Normal Distribution

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0619HA_C1	CS	8	0.0545	0.0457	0.0633	0.0515	0.041	0.0763	0.00371	19.27%	0.00%
1819-DW38-FD		8	0.208	0.139	0.277	0.19	0.11	0.365	0.0293	39.79%	-281.85%

Graphics





10-Day *Hyalella azteca* Sediment Toxicity Test Data

Client: **Condor Earth** Project#: **30078** Organism Log #: 11652 Age: 10-11 days

Species: *Hyalella azteca* Test ID#: **84268** Organism Supplier: **ABS**

Day	Date	Test Material 1819-DW38-FD				Parameter	Value	Meter ID	Sign-off:
0	6/22/19	# Live Organisms				pH	7.52	PH26	AM Change: JR
		A 10	B 10	C 10	D 10	D.O. (mg/L)	8.0	RD12	WQ: JR
		E 10	F 10	G 10	H 10	Conductivity (µS/cm)	420	EC14	Initiation Time: 1127
						Alkalinity (mg/L)	✓63.2		Initiation Counts: TF
						Hardness (mg/L)	✓136		Confirmation Counts: TK
						Ammonia (mg/L)	1.00	DR3800	PM Feed: JR
						Temp. (°C)	22.2	113A	
1	6/23/19	# of Mortalities				Old D.O. (mg/L)	7.0	RD13	AM Change: NN WQ: NN
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	8.1	RD13	Mortality Counts: NN
		E 0	F 0	G 0	H 0	Temp. (°C)	22.2	113A	PM Change: NN PM Feed: NN
2	06/24/19	# of Mortalities				Old D.O. (mg/L)	6.0	RD12	AM Change: ID WQ: ID
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.4	RD12	Mortality Counts: ID
		E 0	F 0	G 0	H 0	Temp. (°C)	22.2	54	PM Change: ID PM Feed: ID
3	6/25/19	# of Mortalities				Old D.O. (mg/L)	6.1	RD12	AM Change: NN WQ: NN
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.1	RD12	Mortality Counts: NN
		E 0	F 0	G 0	H 0	Temp. (°C)	22.1	81A	PM Change: KG PM Feed: KG
4	6/26/19	# of Mortalities				Old D.O. (mg/L)	6.4	RD12	AM Change: [illegible] WQ: [illegible]
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.5	RD12	Mortality Counts: [illegible]
		E 0	F 0	G 0	H 0	Temp. (°C)	22.3	57	PM Change: AR PM Feed: AR
5	6/27/19	# of Mortalities				Old D.O. (mg/L)	6.5	RD13	AM Change: SAT WQ: SAT
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.9	RD13	Mortality Counts: SAT
		E 0	F 0	G 0	H 0	Temp. (°C)	NM	—	PM Change: ID PM Feed: ID
6	6/28/19	# of Mortalities				Old D.O. (mg/L)	6.4	RD11	AM Change: SAT WQ: SAT
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.6	RD11	Mortality Counts: SAT
		E 0	F 0	G 0	H 0	Temp. (°C)	22.1	54	PM Change: SAT PM Feed: SAT
7	6/29/19	# of Mortalities				Old D.O. (mg/L)	6.1	RD12	AM Change: BM WQ: BM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.6	RD12	Mortality Counts: BM
		E 0	F 0	G 0	H 0	Temp. (°C)	22.0	106A	PM Change: BM PM Feed: BM
8	6/30/19	# of Mortalities				Old D.O. (mg/L)	6.7	RD10	AM Change: BM WQ: BM
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.1	RD10	Mortality Counts: BM
		E 0	F 0	G 0	H 0	Temp. (°C)	22.1	106A	PM Change: TK PM Feed: TK
9	7/01/19	# of Mortalities				Old D.O. (mg/L)	6.0	RD10	AM Change: NN WQ: NN
		A 0	B 0	C 0	D 0	New D.O. (mg/L)	7.8	RD10	Mortality Counts: NN
		E 0	F 0	G 0	H 0	Temp. (°C)	22.1 NN	106A	PM Change: NN PM Feed: NN
10	7/2/19	# Alive				pH	7.24	PH25	WQ: SAT
		A 4	B 4	C 2	D 2	D.O. (mg/L)	5.9	RD13	Termination Counts: KL
		E 2	F 2	G 2	H 3	Conductivity (µS/cm)	421	EC13	Termination Time: 1025
						Alkalinity (mg/L)	✓54		
						Hardness (mg/L)	✓124		
						Ammonia (mg/L)	<1.00	DR3800	
						Temp. (°C)	22.1	106A	

Hyalella azteca Weight Data Sheets

Client: **Condor Earth** Project #: **30078** Balance ID: Ba104

Sample ID: **1819-DW38-FD** Tare Wt Date: 6/25/19 Sign-Off: AR

Test ID #: **84268** Final Wt Date: 7/3/19 Sign-Off: SAT

Pan	Concentration Replicate		Initial Weight. (mg)	Final Weight. (mg)	# organisms	Ave Weight (mg)
1	Control	A	62.78	63.39	8	0.0763
2	Sediment	B	75.40	75.96	10	0.056
3		C	67.99	68.40	10	0.041
4		D	68.40	68.91	10	0.051
5		E	65.13	65.64	10	0.051
6		F	72.04	72.56	10	0.052
7		G	75.49	76.10	10	0.061
8		H	60.25	60.73	10	0.048
17	FD	A	64.19	64.63	4	0.110
18		B	62.54	63.03	4	0.122
19		C	71.05	71.78	2	7/8/19 ~~7.86~~ 0.365
20		D	62.08	62.60	2	0.260
21		E	58.26	58.61	2	0.175
22		F	58.85	59.23	2	0.190
23		G	65.58	65.96	2	0.190
24		H	69.35	70.11	3	0.253
QA1			62.15	62.15		–
QA2			68.98	69.02		
QA3			76.81	76.75		

Hyalella azteca Weight Data Sheets

Client: **Condor Earth** Test Init Date: 6/22/19 Balance ID: Bal 04

Sample ID: **T0** Tare Wt Date: 6/22/19 Sign-Off: TA

Test ID: 83055 Final Wt Date: 6/26/19 Sign-Off: AR

Project #: 30078

Pan	Concentration / Replicate		Initial Weight. (mg)	Final Weight. (mg)	# Organisms	Ave Weight (mg)
1	T0	A	69.81	70.45	10	0.064
2		B	65.22	65.54	10	0.032
3		C	63.49	64.16	10	0.067
4		D	65.88	66.24	10	0.036
5		E	65.64	66.06	10	0.042
6		F	58.23	58.37	10	0.014
7		G	64.75	65.04	10	0.029
8		H	57.55	57.95	10	0.040
QA			53.35	53.34		

This page intentionally left blank for printing purposes

Appendix E

2018-2019 Water Column Toxicity Results

This page intentionally left blank for printing purposes

Water Column Toxicity Lab Report
November 29, 2018 at SC-1R
Wet Weather Event

This page intentionally left blank for printing purposes

Micheline Kipf
Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

January 4, 2019

Micheline:

I have enclosed our report "An Evaluation of the Chronic Toxicity of the City of Stockton Stormwater Program Ambient Water Sample" for testing performed on the ambient water sample collected on November 29, 2018. The results of this testing are summarized below:

Toxicity summary for the Stockton Stormwater Program ambient water sample.				
Sample ID	Toxicity relative to the Lab Control treatment?			
	Ceriodaphnia dubia		Fathead Minnow	
	Survival	Reproduction	Survival	Growth
SC-1R	no	no	no	no

Chronic Toxicity of Urban Ambient Waters to *Ceriodaphnia dubia*
There were no significant reductions in *C. dubia* survival or reproduction in the SC-1R sample.

Chronic Toxicity of Urban Ambient Waters to Fathead Minnows
There were no significant reductions in fathead minnow survival or growth in the SC-1R sample.

If you have any questions regarding the performance and interpretation of these tests, please contact my colleague Stephen Clark or myself at (707) 207-7760.

Sincerely,

Michael McElroy
Senior Project Manager

Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 29659.

An Evaluation of the Chronic Toxicity of the City of Stockton Stormwater Program Ambient Water Sample

Sample collected November 29, 2018

Prepared For

Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

Prepared By

Pacific EcoRisk
2250 Cordelia Rd.
Fairfield, CA 94534
(707) 207-7760

January 2019

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING

An Evaluation of the Chronic Toxicity of the City of Stockton Stormwater Program Ambient Water Sample

Sample collected November 29, 2018

Table of Contents

Appendices

1. INTRODUCTION

Condor Earth Technologies, Inc., has contracted Pacific EcoRisk (PER) to evaluate the chronic toxicity of ambient water sample. This evaluation consisted of performing the following US EPA freshwater chronic toxicity tests:

- 3-brood survival and reproduction test with *Ceriodaphnia dubia*; and
- 7-day survival and growth test with larval fathead minnows (*Pimephales promelas*).

The current evaluation was performed using an ambient water sample collected on November 29, 2018 and designated SC-1R. This report describes the performance and results of these tests.

2. CHRONIC TOXICITY TEST PROCEDURES

This testing followed the guidelines established by the EPA manual "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013).

2.1 Sample Receipt and Handling

On November 29, an ambient water sample was collected into appropriately cleaned sample containers. The sample was transported and delivered on ice and under chain-of-custody to the PER laboratory in Fairfield, CA. Upon receipt at the laboratory, aliquots of the sample were collected for analysis of initial water quality characteristics (Table 1). The sample was then stored at ≤6˚C, except when being used to prepare test solutions. The chain-of-custody record for the collection and delivery of this sample is presented in Appendix A.

Table 1. Initial water quality characteristics of the sample.

Sample Receipt Date	Sample ID	Temp. (°C)	pH	D.O. (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Conductivity (µS/cm)	Total Ammonia (mg/L N)
11/29/18	SC-1R	2.1	7.11	5.7	65	73	266	<1.0

2.2 Survival and Reproduction Toxicity Testing with *Ceriodaphnia dubia*

The chronic toxicity test with *C. dubia* consists of exposing neonate organisms to the ambient water for the length of time it takes for the Control treatment females to produce three broods (typically 6-8 days), after which effects on survival and reproduction are evaluated. The specific procedures used in this testing are described below.

The Lab Water Control medium for this testing consisted of a moderately hard synthetic reconstituted freshwater, prepared by addition of reagent grade chemicals to Type 1 lab water. The ambient water sample was tested at the 100% concentration only. For each test treatment, a

200 mL aliquot of test solution was amended with the alga *S. capricornutum* and Yeast-Cerophyll®-Trout Food (YCT) to provide food for the test organisms. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these food-amended test solutions prior to use in this testing.

There were 10 replicates for each test treatment, each replicate consisting of 15 mL of test solution in a 30-mL plastic cup. The tests were initiated by allocating one neonate (<24 hours old, and within 8-hours of age) *C. dubia*, obtained from in-house laboratory cultures, into each replicate cup. The test replicate cups were placed into a temperature-controlled room at 25˚C, under cool white fluorescent lighting on a 16L:8D photoperiod.

Each day of the test, fresh test solutions were prepared and characterized as before, and a new set of replicate cups were prepared. The test replicates containing the test organisms were examined, with surviving organisms being transferred to the corresponding new replicate cup. The contents of each of the remaining old replicate cups was carefully examined and the number of neonate offspring produced by each parent organism was determined, after which the "old" water quality characteristics (pH, D.O., and conductivity) were measured for the old test solution from one randomly-selected replicate at each treatment.

After it was determined that ≥60% of the *C. dubia* in the Lab Water Control treatment had produced their third brood of offspring, the tests were terminated. The resulting survival and reproduction data were analyzed to evaluate any impairment caused by the ambient waters. All statistical analyses were performed using CETIS® (TidePool Scientific Software, McKinleyville, CA).

2.3 Survival and Growth Toxicity Testing with Larval Fathead Minnows

The chronic toxicity test with fathead minnows consists of exposing larval fish to the ambient water for seven days, after which effects on survival and growth are evaluated. The specific procedures used in this testing are described below.

Pathogen-related mortality (PRM) in chronic fathead minnow toxicity tests of ambient or ponded waters is a common confounding problem that must be controlled in order to determine the toxicity of sample waters. The US EPA has recognized this problem, and has recommended a variety of potential modifications to the testing approach that can be implemented to minimize PRM interference. The approach used in this study, described below, has the advantage of minimizing the PRM interference without affecting the water sample matrix.

The larval fathead minnows used in this testing were obtained from a commercial supplier (Aquatox, Hot Springs, AR). Upon receipt at the lab, the fish were held in aerated tanks containing Lab Water Control medium, and were fed brine shrimp nauplii *ad libitum* during this pre-test holding period.

The Lab Water Control medium for this testing consisted of EPA moderately-hard synthetic freshwater. The ambient water sample was tested at the 100% concentration only. “New” water quality characteristics (pH, D.O., and conductivity) were measured on these test solutions prior to use in the tests.

There were 10 replicates for each test treatment, each replicate consisting of 20 mL of test solution in a 30-mL test replicate container. The tests were initiated by randomly allocating two larval fathead minnows (<48 hours old) into each replicate. The replicate containers were then placed in a temperature-controlled room at 25°C, under fluorescent lighting on a 16L:8D photoperiod. The test fish were fed brine shrimp nauplii twice daily.

Each day of the tests, fresh test solutions were prepared and characterized as before. The test replicate containers were examined, with any dead animals, uneaten food, wastes, and other detritus being removed. The number of live fish in each replicate was determined and then approximately 80% of the old test solution in each beaker was carefully poured out and replaced with fresh test solution. “Old” water quality characteristics (pH, D.O., and conductivity) were measured on the old test solution that had been discarded from one randomly-selected replicate at each treatment.

After seven days exposure, the tests were terminated and the number of live fish in each replicate was recorded. The fish from each replicate were carefully euthanized in methanol, rinsed in de-ionized water, and transferred to a pre-dried and pre-tared weighing pan. Replicates were paired to obtain five composite replicates for each test treatment. The fish were then dried at 100˚C for ≥24 hours and re-weighed to determine the total dry weight of fish in each replicate. The total dry weight was then divided by the initial number of fish per composited replicate to determine the “biomass value.” The resulting survival and biomass value data were analyzed to evaluate any impairments caused by the ambient waters. All statistical analyses were performed using the CETIS statistical software.

3. RESULTS

3.1 Chronic Effects of Ambient Water Sample on *Ceriodaphnia dubia*

The results of this testing are summarized in Table 2. There were no significant reductions in *C. dubia* survival or reproduction in the SC-1R sample. The test data and summary of statistical analyses are presented in Appendix B.

Table 2. Chronic effects of the ambient water sample on *Ceriodaphnia dubia*.

Treatment/Sample ID	Mean % Survival	Mean Reproduction (# neonates/female)
Lab Water Control	100	26.6
SC-1R	100	26.5

3.2 Chronic Effects of Ambient Water Sample on Fathead Minnows

The results of this testing are summarized in Table 3. There were no significant reductions in fathead minnow survival or growth in the SC-1R sample. The test data and summary of statistical analyses for this testing are presented in Appendix C.

Table 3. Chronic effects of the ambient water sample on fathead minnow.

Treatment/Sample ID	Mean % Survival	Mean Biomass Value (mg)
Lab Water Control	100	0.41
SC-1R	90	0.42

4. SUMMARY AND CONCLUSIONS

Chronic Toxicity of Urban Ambient Waters to *Ceriodaphnia dubia*
There were no significant reductions in *C. dubia* survival or reproduction in the SC-1R sample.

Chronic Toxicity of Urban Ambient Waters to Fathead Minnows
There were no significant reductions in fathead minnow survival or growth in the SC-1R sample.

4.1 QA/QC Summary

Test Conditions – All test conditions (pH, D.O., temperature, etc.) were within acceptable limits. All test analyses were performed according to laboratory Standard Operating Procedures.

Negative Control –The biological responses at the Lab Control treatments were within acceptable limits.

Appendix A

Chain-of-Custody Record for the Collection and Delivery of the Sample

This page intentionally left blank for printing purposes

Condor Earth Technologies, Inc.

CONDOR

Sample Results TAT: ☐ Rush ☑ Standard

☐ PO Box 3905/21663 Brian Lane, Sonora, CA 95370, 209.532.0361, 209.532.0773 fax

☑ 188 Frank West Circle, Suite I, Stockton, CA 95206, 209.234.0518, 209.234.0538 fax

☐ 2941 Sunrise Blvd, Suite 150, Rancho Cordova, CA 95742, 916.783.2060, 916.783.2464 fax

☐ 1739 Ashby Road, Suite B, Merced, CA 95348, 209.388.9601, 209.388.1778 fax

SHIPPED TO:

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534 (707) 207-7760

SEND RESULTS TO:

NAME: Micheline Doyle Kipf
E-MAIL: mkipf@condorearth.com
E-MAIL:

☑ PLEASE FAX/EMAIL RESULTS TO ADDRESS MARKED ABOVE

PROJECT NAME/LOCATION: COS Urban Discharge

EDF RESULTS REQUIRED ☐ YES ☑ NO

SITE GLOBAL ID:

PROJECT NO.: 6066J-06-01

SAMPLED BY: (Signature)

Date	Time	Sample Site Name	Sample ID (if different)	Matrix	# of containers	Preservatives (see below)	ANALYSIS /METHOD:	Field Filtered	Chronic Ceriodaphnia	Chronic flathead minnow							REMARKS	LAB ID#
11/29/18	1125	1819-SE68-	SC-1R	S	2	1		N	✓	✓							chronic Ceriodaphnia dubia toxicity	
																	chrionic flathead minnow toxicity	
																	follow up dilution series as	
																	necessary (100% mortality/24hrs)	
																	CEDEN data format requested	

Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)	Date:	Time:
[signature]	11/29/18	3:50	[signature]	11/29/18	3:50
Relinquished By: (Signature)			Received By: (Signature)		

Matrix: WW Waste Water; DW Drinking Water; HWW Hazardous Waste (Water); S Soil/Solid; SW Storm Water; GW Ground Water

Preservative: 1 4°C; 2 HCL; 3 NaOH; 4 $Na_2S_2O_3$; 5 HNO_3; 6 H_2SO_4; 7 Other______

Original – Send Yellow – File Pink – Log Book

This page intentionally left blank for printing purposes

Appendix B

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the Ambient Water Sample to *Ceriodaphnia dubia*

This page intentionally left blank for printing purposes

CETIS Summary Report

Report Date: 31 Dec-18 15:00 (p 1 of 1)
Test Code: CE_1118CD_C1 | 00-3851-1062

Ceriodaphnia Survival and Reproduction Test — **Pacific EcoRisk**

Batch ID:	16-1797-3863	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Kristin Robertson
Start Date:	30 Nov-18 15:31	**Protocol:**	EPA-821-R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	06 Dec-18 13:40	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	5d 22h	**Source:**	In-House Culture	**Age:**	1

Sample Code	Sample ID	Sample Date	Receipt Date	Sample Age	Client Name	Project
CE_1118CD_C1	01-2981-3309	30 Nov-18 15:31	30 Nov-18 15:31	n/a (24.5 °C)	Condor Earth Technologi	29659
1819-SE68-SC-1R	01-2665-4881	29 Nov-18 11:25	29 Nov-18 15:50	28h (2.1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Lat/Long
CE_1118CD_C1	Ambient Water	Condor Earth Technologies	LABQA	
1819-SE68-SC-1R	Ambient Water	Condor Earth Technologies	SC-1R	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
03-9265-9936	Reproduction	Equal Variance t Two-Sample Test	0.4887	1819-SE68-SC-1R passed reproduction
04-0620-0759	Survival	Fisher Exact Test	1.0000	1819-SE68-SC-1R passed survival

Reproduction Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_1118CD_C1	LW	10	26.6	22.9	30.3	14	33	1.65	5.23	19.67%	0.00%
1819-SE68-SC-1R		10	26.5	19.6	33.4	6	38	3.07	9.7	36.60%	0.38%

Survival Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_1118CD_C1	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
1819-SE68-SC-1R		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%

Reproduction Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
CE_1118CD_C1	LW	14	29	26	29	27	28	22	29	29	33
1819-SE68-SC-1R		32	6	36	28	29	23	27	38	15	31

Survival Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
CE_1118CD_C1	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1819-SE68-SC-1R		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Survival Binomials

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
CE_1118CD_C1	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
1819-SE68-SC-1R		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Ceriodaphnia Survival and Reproduction Test — **Pacific EcoRisk**

Analysis ID:	04-0620-0759	**Endpoint:**	Survival	**CETIS Version:**	CETISv1.9.2
Analyzed:	22 Dec-18 11:00	**Analysis:**	Single 2x2 Contingency Table	**Official Results:**	Yes

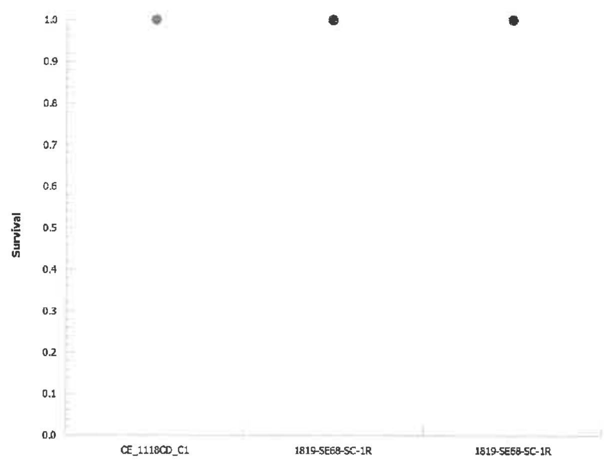
Fisher Exact Test

Sample I vs	Sample II	Test Stat	P-Type	P-Value	Decision(α:5%)
Lab Water Control	1819-SE68-SC-1R	1.000	Exact	1.0000	Non-Significant Effect

Data Summary

Sample	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
CE_1118CD_C1	LW	10	0	10	1	0	0.0%
1819-SE68-SC-1R		10	0	10	1	0	0.0%

Graphics



CETIS Analytical Report

Report Date: 22 Dec-18 11:01 (p 1 of 1)
Test Code: CE_1118CD_C1 | 00-3851-1062

Ceriodaphnia Survival and Reproduction Test — Pacific EcoRisk

Analysis ID:	03-9265-9936	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.9.2
Analyzed:	22 Dec-18 11:01	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-SE68-SC-1R passed reproduction	22.72%

Equal Variance t Two-Sample Test

Sample I vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Control	1819-SE68-SC-1R	0.0287	1.73	6.04	18	CDF	0.4887	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.05	0.05	1	0.000823	0.9774	Non-Significant Effect
Error	1092.9	60.7167	18			
Total	1092.95		19			

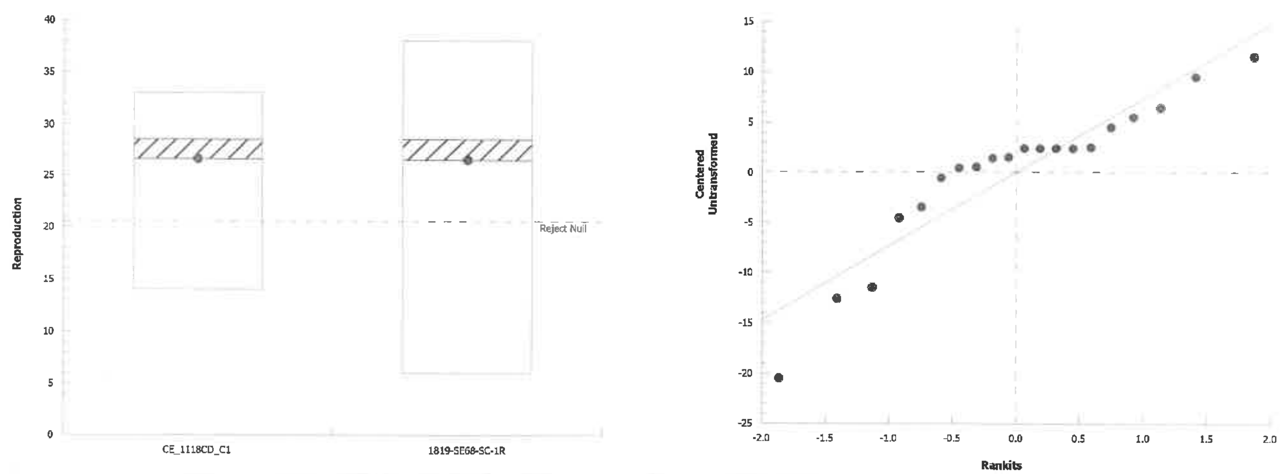
Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	3.44	6.54	0.0802	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.885	0.866	0.0215	Normal Distribution

Reproduction Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1118CD_C1	LW	10	26.6	22.9	30.3	28.5	14	33	1.65	19.67%	0.00%
1819-SE68-SC-1R		10	26.5	19.6	33.4	28.5	6	38	3.07	36.60%	0.38%

Graphics



This page intentionally left blank for printing purposes

Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data

Client: Condor Earth - Stockton
Material: SC-1R
Test Date: 11/30/18
Project #: 29659
Test ID: 80964
Randomization: 10.5.7
Control Water: Modified EPAMH

Lab Water Control

Day	pH New	pH Old	D.O. New	D.O. Old	Cond. (µS/cm)	Temp (°C)	A	B	C	D	E	F	G	H	I	J	SIGN-OFF
0	8.04		8.9		353	24.5	0	0	0	0	0	0	0	0	0	0	Date: 11/30/18 Sol'n Prep: NB New WQ: TA Test Init.: ML Time: 1531
1	7.88	7.97	8.8	6.7	355	25.1	0	0	0	0	0	0	0	0	0	0	Date: 12/1/18 Sol'n Prep: TF New WQ: SR Old WQ: NB Counts: NB Time: 1110
2	7.70	7.85	7.0	7.8	353	25.2	0	0	0	0	0	0	0	0	0	0	Date: 12/2/18 Sol'n Prep: TK New WQ: TA Old WQ: TA Counts: TK Time: 1538
3	7.96	7.83	8.8	8.1	366	25.4	0	0	0	0	3	0	0	0	0	0	Date: 12/3/18 Sol'n Prep: SR New WQ: NB Old WQ: KL Counts: NB Time: 1408
4	7.81	7.82	8.7	7.9	360	24.0	4	4	4	6	0	5	0	3	6	5	Date: 12/4/18 Sol'n Prep: TF New WQ: TA Old WQ: TA Counts: NB Time: 1342
5	7.69	7.82	7.2	7.9	355	25.4	10	10	10	9	10	9	6	9	9	11	Date: 12/5/18 Sol'n Prep: TF New WQ: SAT Old WQ: KR Counts: NB Time: 1356
6	7.74	7.62	7.3	8.3	~~414~~ 371	24.0	0	15	12	14	14	14	16	17	14	17	Date: 12/6/18 Sol'n Prep: NB New WQ: JR Old WQ: JR Counts: NB Time: 1340
7																	Date: Sol'n Prep: New WQ: Old WQ: Counts: Time:
8																	Date: Old WQ: Counts: Time:
						Total=	14	29	26	29	27	28	22	29	29	33	Mean Neonates/Female = 26.6

100%

Day	pH New	pH Old	D.O. New	D.O. Old	Cond. (µS/cm)	Temp (°C)	A	B	C	D	E	F	G	H	I	J	SAMPLE ID
0	7.38		7.2		275	24.9	0	0	0	0	0	0	0	0	0	0	51455
1	7.33	7.83	7.1	7.0	262	24.2	0	0	0	0	0	0	0	0	0	0	51455
2	7.40	7.76	6.0	7.3	270	25.0	0	0	0	0	0	0	0	0	0	0	51455
3	7.33	7.86	8.4	8.1	265	25.1	0	0	0	4	4	1	4	0	0	0	51455
4	7.27	7.80	7.9	7.8	272	24.0	6	1	3	0	0	0	0	4	7	5	51455
5	7.01	7.71	7.0	6.6	263	24.4	10	5	12	6	17	6	10	12	8	14	51455
6	7.32	7.34	6.5	7.5	259	24.2	16	0	21	18	8	16	13	22	0	12	51455
7																	
8																	
						Total=	32	6	36	28	29	23	27	38	15	31	Mean Neonates/Female = 26.5

This page intentionally left blank for printing purposes

Appendix C

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the Ambient Water Sample to Fathead Minnows

This page intentionally left blank for printing purposes

CETIS Summary Report

Report Date: 22 Dec-18 11:18 (p 1 of 1)
Test Code: CE_1118PP_C1 | 17-7272-4073

Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Batch ID:	14-3579-7263	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Kristin Robertson
Start Date:	30 Nov-18 17:25	**Protocol:**	EPA-821-R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	07 Dec-18 09:30	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	6d 16h	**Source:**	Aquatox, AR	**Age:**	1

Sample Code	Sample ID	Sample Date	Receipt Date	Sample Age	Client Name	Project
CE_1118PP_C1	18-1007-2923	30 Nov-18 17:25	30 Nov-18 17:25	n/a (25.1 °C)	Condor Earth Technologi	29659
1819-SE68-SC-1R	01-2665-4881	29 Nov-18 11:25	29 Nov-18 15:50	30h (2.1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Lat/Long
CE_1118PP_C1	Ambient Water	Condor Earth Technologies	LABQA	
1819-SE68-SC-1R	Ambient Water	Condor Earth Technologies	SC-1R	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
02-1417-0480	7d Survival Rate	Wilcoxon Rank Sum Two-Sample Test	0.2368	1819-SE68-SC-1R passed 7d survival rate

7d Survival Rate Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_1118PP_C1	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
1819-SE68-SC-1R		10	0.900	0.749	1.000	0.500	1.000	0.067	0.211	23.42%	10.00%

7d Survival Rate Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
CE_1118PP_C1	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1819-SE68-SC-1R		0.500	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.500	1.000

7d Survival Rate Binomials

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
CE_1118PP_C1	LW	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
1819-SE68-SC-1R		1/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	1/2	2/2

CETIS Summary Report

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Batch ID:	07-5319-5336	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Kristin Robertson
Start Date:	30 Nov-18 17:25	**Protocol:**	EPA-821-R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	07 Dec-18 09:30	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	6d 16h	**Source:**	Aquatox, AR	**Age:**	1

Sample Code	Sample ID	Sample Date	Receipt Date	Sample Age	Client Name	Project
CE_1118PP_C1w	01-7885-7436	30 Nov-18 17:25	30 Nov-18 17:25	n/a (25.1 °C)	Condor Earth Technologi	29659
1819-SE68-SC-1R	01-2665-4881	29 Nov-18 11:25	29 Nov-18 15:50	30h (2.1 °C)		

Sample Code	Material Type	Sample Source	Station Location	Lat/Long
CE_1118PP_C1w	Ambient Water	Condor Earth Technologies	LABQA	
1819-SE68-SC-1R	Ambient Water	Condor Earth Technologies	SC-1R	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
09-2428-2792	Mean Dry Biomass-mg	Equal Variance t Two-Sample Test	0.5666	1819-SE68-SC-1R passed mean dry biomas
07-3653-7963	Mean Dry Weight-mg	Equal Variance t Two-Sample Test	0.9772	1819-SE68-SC-1R passed mean dry weight-

Mean Dry Biomass-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_1118PP_C1w	LW	5	0.413	0.369	0.458	0.368	0.465	0.0159	0.0355	8.58%	0.00%
1819-SE68-SC-1R		5	0.419	0.343	0.495	0.36	0.51	0.0275	0.0615	14.67%	-1.33%

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_1118PP_C1w	LW	5	0.413	0.369	0.458	0.368	0.465	0.0159	0.0355	8.58%	0.00%
1819-SE68-SC-1R		5	0.467	0.422	0.513	0.42	0.51	0.0163	0.0365	7.82%	-13.02%

Mean Dry Biomass-mg Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
CE_1118PP_C1w	LW	0.412	0.423	0.4	0.465	0.368
1819-SE68-SC-1R		0.36	0.51	0.42	0.44	0.365

Mean Dry Weight-mg Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
CE_1118PP_C1w	LW	0.412	0.423	0.4	0.465	0.368
1819-SE68-SC-1R		0.48	0.51	0.42	0.44	0.487

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Analysis ID:	02-1417-0480	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	22 Dec-18 11:14	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	1819-SE68-SC-1R passed 7d survival rate	19.66%

Wilcoxon Rank Sum Two-Sample Test

Sample I	vs	Sample II	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Control		1819-SE68-SC-1R	95	n/a	1	18	Exact	0.2368	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0359605	0.0359605	1	2.25	0.1510	Non-Significant Effect
Error	0.287684	0.0159824	18			
Total	0.323644		19			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	6.75E+13	6.54	<1.0E-37	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.604	0.866	3.2E-06	Non-Normal Distribution

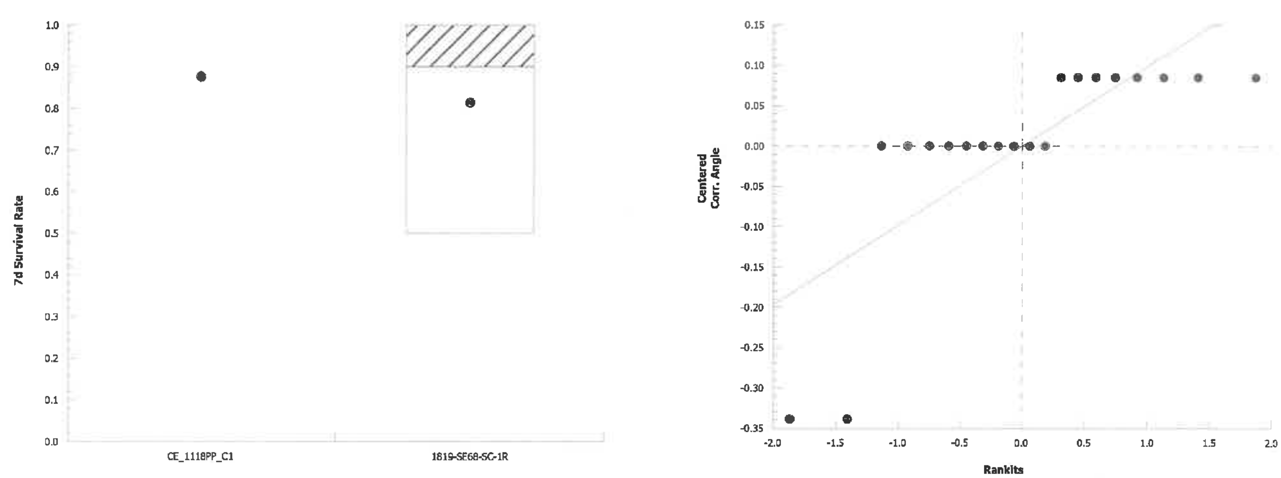
7d Survival Rate Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1118PP_C1	LW	10	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
1819-SE68-SC-1R		10	0.900	0.749	1.000	1.000	0.500	1.000	0.067	23.42%	10.00%

Angular (Corrected) Transformed Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1118PP_C1	LW	10	1.21	1.21	1.21	1.21	1.21	1.21	0	0.00%	0.00%
1819-SE68-SC-1R		10	1.12	0.997	1.25	1.21	0.785	1.21	0.0565	15.90%	7.01%

Graphics



CETIS Analytical Report

Report Date: 22 Dec-18 11:43 (p 1 of 2)
Test Code: CE_1118PP_C1w | 21-3090-6217

Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis ID:	09-2428-2792	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.2
Analyzed:	22 Dec-18 11:40	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-SE68-SC-1R passed mean dry biomass	14.28%

Equal Variance t Two-Sample Test

Sample I vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Control	1819-SE68-SC-1R	-0.173	1.86	0.059	8	CDF	0.5666	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	7.565E-05	7.565E-05	1	0.03	0.8667	Non-Significant Effect
Error	0.0201527	0.0025191	8			
Total	0.0202284		9			

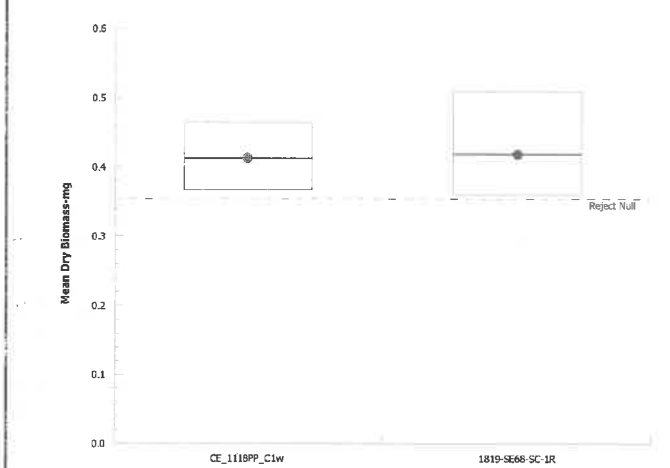
Distributional Tests

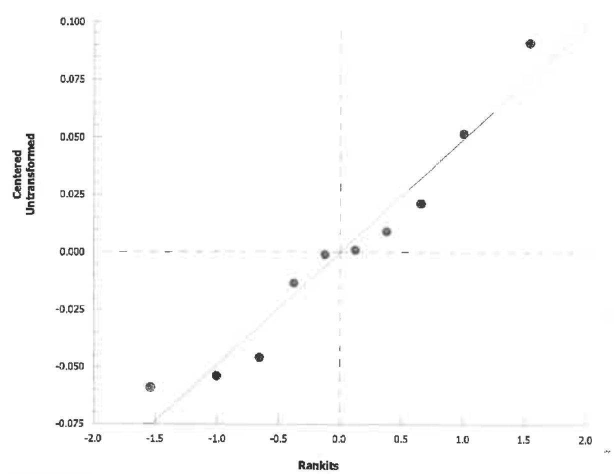
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	3	23.2	0.3118	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.945	0.741	0.6047	Normal Distribution

Mean Dry Biomass-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1118PP_C1w	LW	5	0.413	0.369	0.458	0.412	0.368	0.465	0.0159	8.58%	0.00%
1819-SE68-SC-1R		5	0.419	0.343	0.495	0.42	0.36	0.51	0.0275	14.67%	-1.33%

Graphics





Chronic Larval Fish Survival and Growth Test				Pacific EcoRisk
Analysis ID: 07-3653-7963	**Endpoint:** Mean Dry Weight-mg		**CETIS Version:** CETISv1.9.2	
Analyzed: 22 Dec-18 11:42	**Analysis:** Parametric-Two Sample		**Official Results:** Yes	

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-SE68-SC-1R passed mean dry weight-	10.24%

Equal Variance t Two-Sample Test

Sample I vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Control	1819-SE68-SC-1R	-2.36	1.86	0.042	8	CDF	0.9772	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0072453	0.0072453	1	5.59	0.0457	Significant Effect
Error	0.0103744	0.0012968	8			
Total	0.0176197		9			

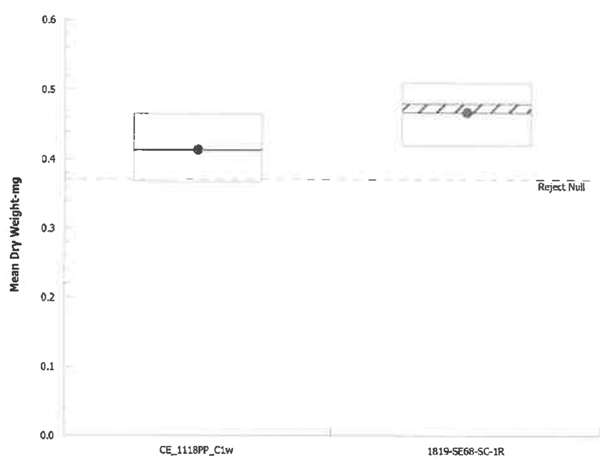
Distributional Tests

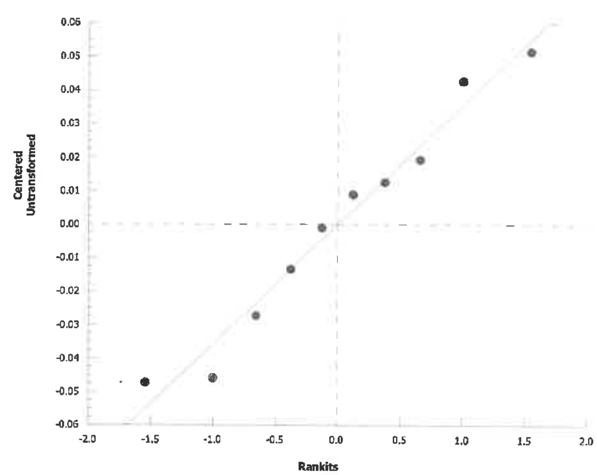
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.06	23.2	0.9552	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.954	0.741	0.7162	Normal Distribution

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_1118PP_C1w	LW	5	0.413	0.369	0.458	0.412	0.368	0.465	0.0159	8.58%	0.00%
1819-SE68-SC-1R		5	0.467	0.422	0.513	0.48	0.42	0.51	0.0163	7.82%	-13.02%

Graphics





7 Day Chronic Fathead Minnow Toxicity Test Data

Client:	Condor Earth - Stockton	Organism Log#:	11315 Age: <48hr
Test Material	SC-1R	Organism Supplier:	Aquatox
Test ID#:	80965 Project #: 29659	Control/Diluent:	EPAMH
Test Date:	11-30-18	Control Water Batch:	2122

Day	Treatment (%)	Temp (°C)	pH New	pH Old	D.O. (mg/L) New	D.O. (mg/L) Old	Conductivity (µS/cm)	A	B	C	D	E	F	G	H	I	J
Day 0	Control	25.1	8.47		7.3		300	2	2	2	2	2	2	2	2	2	2
	100	25.2	7.47		5.3		269	2	2	2	2	2	2	2	2	2	2
	Meter ID	93A	PH24		RD12		EC11										
	Date: 11/30/18	Sample ID: 51455	Test Solution Prep: LZ		New WQ: TA			Initiation Time: 1725					Initiation Sign-off: AB				
Day 1	Control	26.0	8.06	7.34	8.6	4.0	305	2	2	2	2	2	2	2	2	2	2
	100	26.0	7.17	7.32	6.6	4.1	276	2	2	2	2	2	2	2	2	2	2
	Meter ID	93A	PH24	PH24	RD10	RD13	EC10										
	Date: 12/1/18	Sample ID: 51455	Test Solution Prep: TK		New WQ: TA	Old WQ: Le		Renewal Time: 9:34					Renewal Sign-off: MM				
Day 2	Control	25.7	8.10	~~[illegible]~~ 7.70	8.9	6.9	TK12/2/18 ~~461~~ 310	2	2	2	2	2	2	2	2	2	2
	100	25.8	7.22	7.59	7.1	5.9	276	2	2	2	2	2	2	2	2	2	2
	Meter ID	109A	PH24	PH19	RD10	RD12	EC10										
	Date: 12/2/18	Sample ID: 51455	Test Solution Prep: KG		New WQ: TP	Old WQ: KG		Renewal Time: 1130					Renewal Sign-off: TK				
Day 3	Control	25.6	8.17	7.82	8.7	7.0	313	2	2	2	2	2	2	2	2	2	2
	100	25.5	7.25	7.79	6.9	7.1	265	2	2	2	2	2	2	2	2	2	2
	Meter ID	81A	PH24	PH25	RD11	RD11	EC11										
	Date: 12/3/18	Sample ID: 51455	Test Solution Prep: KG		New WQ: MYL	Old WQ: KP		Renewal Time: 1400					Renewal Sign-off: TK				
Day 4	Control	24.9	8.10	8.00	8.8	7.7	323	2	2	2	2	2	2	2	2	2	2
	100	25.1	7.14	7.77	6.7	7.5	266	2	2	2	2	2	2	2	2	2	2
	Meter ID	100A	PH24	PH25	RD10	RD11	EC10										
	Date: 12/4/18	Sample ID: 51455	Test Solution Prep: LZ		New WQ: TA	Old WQ: TA		Renewal Time: 1155					Renewal Sign-off: KG				
Day 5	Control	25.8	8.09	7.55	8.1	5.0	318	2	2	2	2	2	2	2	2	2	2
	100	26.0	7.18	7.51	7.4	5.5	259	1	2	2	2	2	2	2	2	1	2
	Meter ID	107A	PH24	PH19	RD13	RD10	EC13										
	Date: 12/5/18	Sample ID: 51455	Test Solution Prep: LZ		New WQ: SAT	Old WQ: KR		Renewal Time: 1437					Renewal Sign-off: KG				
Day 6	Control	25.3	8.07	7.13	8.4	6.1	300	2	2	2	2	2	2	2	2	2	2
	100	25.7	7.16	7.03	7.7	6.6	268	1	2	2	2	2	2	2	2	1	2
	Meter ID	108A	PH19	PH24	RD13	RD10	EC13										
	Date: 12/6/18	Sample ID: 51455	Test Solution Prep: TK		New WQ: Yu	Old WQ: JR		Renewal Time: 1116					Renewal Sign-off: KG				
Day 7	Control	25.1		7.77		4.3	308	2	2	2	2	2	2	2	2	2	2
	100	25.2		7.73		4.7	271	1	2	2	2	2	2	2	2	1	2
	Meter ID	81A		PH25		RD13	EC13										
	Date: 12/7/18					Old WQ: RM		Termination Time: 0930					Termination Sign-off: TK				

Fathead Minnow Dry Weight Data Sheet

Client: **Condor Earth - Stockton** Test ID #: 80965 Project #: 29659

Sample: **SC-1R** Tare Weight Date: 12-4-18 Sign-off: AR

Test Date: 11/30/18 Final Weight Date: 12-8-18 Sign-off: AR

Pan	Concentration	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Control	A+B	408.87	410.52	4	0.4125
2		C+D	410.37	412.06	4	0.4225
3		E+F	397.49	399.09	4	0.4000
4		G+H	410.60	412.46	4	0.4650
5		I+J	413.20	414.67	4	0.3675
6	100%	A+B	406.02	407.46	4	0.3600
7		C+D	415.31	417.35	4	0.5100
8		E+F	411.44	413.12	4	0.4200
9		G+H	408.65	410.41	4	0.4400
10		I+J	404.13	405.59	4	0.3650
QA 1			403.05	403.02		-0.03
QA2			405.12	405.07		-0.05
Balance ID			BAL 04	BAL04		

This page intentionally left blank for printing purposes

Water Column Toxicity Lab Report
June 19, 2019 at SC-1R
Dry Weather Event

This page intentionally left blank for printing purposes

PACIFIC ECORISK | ENVIRONMENTAL CONSULTING & TESTING

Micheline Kipf
Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

July 11, 2019

Micheline:

I have enclosed our report "An Evaluation of the Chronic Toxicity of the City of Stockton Stormwater Program Ambient Water Sample" for testing performed on the ambient water sample collected on June 19, 2019. The results of this testing are summarized below:

Toxicity summary for the Stockton Stormwater Program ambient water sample.				
Sample ID	Toxicity relative to the Lab Control treatment?			
	Ceriodaphnia dubia		Fathead Minnow	
	Survival	Reproduction	Survival	Growth
SC-1R	no	**YES**	no	no

Chronic Toxicity of Urban Ambient Waters to *Ceriodaphnia dubia*
There was no significant reduction in survival in the SC-1R sample. There was a significant reduction in reproduction in the SC-1R sample.

Chronic Toxicity of Urban Ambient Waters to Fathead Minnows
There were no significant reductions in survival or growth in the SC-1R sample.

If you have any questions regarding the performance and interpretation of these tests, please contact my colleague Stephen Clark or myself at (707) 207-7760.

Sincerely,

Michael McElroy
Senior Project Manager

Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 28974.

An Evaluation of the Chronic Toxicity of the City of Stockton Stormwater Program Ambient Water Sample

Sample collected June 19, 2019

Prepared For

Condor Earth Technologies, Inc.
188 Frank West Circle, Suite I
Stockton, CA 95206

Prepared By

Pacific EcoRisk
2250 Cordelia Rd.
Fairfield, CA 94534
(707) 207-7760

July 2019

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING

An Evaluation of the Chronic Toxicity of the City of Stockton Stormwater Program Ambient Water Sample

Sample collected June 19, 2019

Table of Contents

Appendices

1. INTRODUCTION

Condor Earth Technologies, Inc., has contracted Pacific EcoRisk (PER) to evaluate the chronic toxicity of an ambient water sample. This evaluation consisted of performing the following US EPA freshwater chronic toxicity tests:

- 3-brood survival and reproduction test with *Ceriodaphnia dubia*; and
- 7-day survival and growth test with larval fathead minnows (*Pimephales promelas*).

The current evaluation was performed using an ambient water sample collected on June 19, 2019 and designated SC-1R. This report describes the performance and results of these tests.

2. CHRONIC TOXICITY TEST PROCEDURES

This testing followed the guidelines established by the EPA manual "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013).

2.1 Sample Receipt and Handling

On June 19, an ambient water sample was collected into appropriately cleaned sample containers. The sample was transported and delivered on ice and under chain-of-custody to the PER laboratory in Fairfield, CA. Upon receipt at the laboratory, aliquots of the sample were collected for analysis of initial water quality characteristics (Table 1). The sample was then stored at ≤6˚C, except when being used to prepare test solutions. The chain-of-custody record for the collection and delivery of this sample is presented in Appendix A.

Table 1. Initial water quality characteristics of the sample.

Sample Receipt Date	Sample ID	Temp. (°C)	pH	D.O. (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Conductivity (µS/cm)	Total Ammonia (mg/L N)
6/20/19	SC-1R	5.2	8.06	7.7	70	63	215	<1.0

2.2 Chronic Toxicity Testing with *Ceriodaphnia dubia*

The chronic toxicity test with *C. dubia* consists of exposing neonate organisms to the ambient water for the length of time it takes for the Control treatment females to produce three broods (typically 6-8 days), after which effects on survival and reproduction are evaluated. The specific procedures used in this testing are described below.

The Lab Water Control medium for this testing consisted of a moderately hard synthetic reconstituted freshwater, prepared by addition of reagent grade chemicals to Type 1 lab water.

The ambient water sample was tested at the 100% concentration only. For each test treatment, a 200 mL aliquot of test solution was amended with the alga *S. capricornutum* and Yeast-Cerophyll®-Trout Food (YCT) to provide food for the test organisms. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these food-amended test solutions prior to use in this testing.

There were 10 replicates for each test treatment, each replicate consisting of 15 mL of test solution in a 30-mL plastic cup. The tests were initiated by allocating one neonate (<24 hours old, and within 8-hours of age) *C. dubia*, obtained from in-house laboratory cultures, into each replicate cup. The test replicate cups were placed into a temperature-controlled room at 25˚C, under cool white fluorescent lighting on a 16L:8D photoperiod.

Each day of the test, fresh test solutions were prepared and characterized as before, and a new set of replicate cups were prepared. The test replicates containing the test organisms were examined, with surviving organisms being transferred to the corresponding new replicate cup. The contents of each of the remaining old replicate cups was carefully examined and the number of neonate offspring produced by each parent organism was determined, after which the "old" water quality characteristics (pH, D.O., and conductivity) were measured for the old test solution from one randomly-selected replicate at each treatment.

After it was determined that ≥60% of the *C. dubia* in the Lab Water Control treatment had produced their third brood of offspring, the tests were terminated. The resulting survival and reproduction data were analyzed to evaluate any impairment caused by the ambient water. All statistical analyses were performed using CETIS® (TidePool Scientific Software, McKinleyville, CA).

2.3 Chronic Toxicity Testing with Larval Fathead Minnows

The chronic toxicity test with fathead minnows consists of exposing larval fish to the ambient water for seven days, after which effects on survival and growth are evaluated. The specific procedures used in this testing are described below.

Pathogen-related mortality (PRM) in chronic fathead minnow toxicity tests of ambient or ponded waters is a common confounding problem that must be controlled in order to determine the toxicity of sample waters. The US EPA has recognized this problem, and has recommended a variety of potential modifications to the testing approach that can be implemented to minimize PRM interference. The approach used in this study, described below, has the advantage of minimizing the PRM interference without affecting the water sample matrix.

The larval fathead minnows used in this testing were obtained from a commercial supplier (Aquatox, Hot Springs, AR). Upon receipt at the lab, the fish were held in aerated tanks containing Lab Water Control medium, and were fed brine shrimp nauplii *ad libitum* during this pre-test holding period.

The Lab Water Control medium for this testing consisted of EPA moderately-hard synthetic freshwater. The ambient water sample was tested at the 100% concentration only. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these test solutions prior to use in the tests.

There were 10 replicates for each test treatment, each replicate consisting of 20 mL of test solution in a 30-mL test replicate container. The tests were initiated by randomly allocating two larval fathead minnows (<48 hours old) into each replicate. The replicate containers were then placed in a temperature-controlled room at 25°C, under fluorescent lighting on a 16L:8D photoperiod. The test fish were fed brine shrimp nauplii twice daily.

Each day of the tests, fresh test solutions were prepared and characterized as before. The test replicate containers were examined, with any dead animals, uneaten food, wastes, and other detritus being removed. The number of live fish in each replicate was determined and then approximately 80% of the old test solution in each beaker was carefully poured out and replaced with fresh test solution. "Old" water quality characteristics (pH, D.O., and conductivity) were measured on the old test solution that had been discarded from one randomly-selected replicate at each treatment.

After seven days exposure, the tests were terminated and the number of live fish in each replicate was recorded. The fish from each replicate were carefully euthanized in methanol, rinsed in de-ionized water, and transferred to a pre-dried and pre-tared weighing pan. Replicates were paired to obtain five composite replicates for each test treatment. The fish were then dried at 100˚C for ≥24 hours and re-weighed to determine the total dry weight of fish in each replicate. The total dry weight was then divided by the initial number of fish per composited replicate to determine the "biomass value." The resulting survival and biomass value data were analyzed to evaluate any impairments caused by the ambient waters. All statistical analyses were performed using CETIS.

3. RESULTS

3.1 Chronic Toxicity of Ambient Water on *Ceriodaphnia dubia*

The results of this testing are summarized in Table 2. There was no significant reduction in survival in the SC-1R sample. There was a significant reduction in reproduction in the SC-1R sample. The test data and summary of statistical analyses are presented in Appendix B.

Table 2. Chronic toxicity of ambient water on *Ceriodaphnia dubia*.

Treatment/Sample ID	Mean % Survival	Mean Reproduction (# neonates/female)
Lab Water Control	100	38.9
SC-1R	90	**21.9***

* The response at this test treatment was significantly less than the Lab Water Control treatment response ($p < 0.05$).

3.2 Chronic Toxicity of Ambient Water on Fathead Minnows

The results of this testing are summarized in Table 3. There were no significant reductions in survival or growth in the SC-1R sample. The test data and summary of statistical analyses for this testing are presented in Appendix C.

Table 3. Chronic toxicity of ambient water on fathead minnows.

Treatment/Sample ID	Mean % Survival	Mean Biomass Value (mg)
Lab Water Control	100	0.36
SC-1R	100	0.39

4. SUMMARY AND CONCLUSIONS

Chronic Toxicity of Urban Ambient Waters to *Ceriodaphnia dubia*
There was no significant reduction in survival in the SC-1R sample. There was a significant reduction in reproduction in the SC-1R sample.

Chronic Toxicity of Urban Ambient Waters to Fathead Minnows
There were no significant reductions in survival or growth in the SC-1R sample.

4.1 QA/QC Summary

Test Conditions – All test conditions (pH, D.O., temperature, etc.) were within acceptable limits. All test analyses were performed according to laboratory Standard Operating Procedures.

Negative Control –The biological responses at the Lab Control treatments were within acceptable limits.

Appendix A

Chain-of-Custody Record for the Collection and Delivery of the Sample

This page intentionally left blank for printing purposes

Condor Earth Technologies, Inc.

Sample Results TAT: ☐ Rush ☑ Standard

CONDOR

☐ PO Box 3905/21663 Brian Lane, Sonora, CA 95370, 209.532.0361, 209.532.0773 fax
☑ 188 Frank West Circle, Suite I, Stockton, CA 95206, 209.234.0518, 209.234.0538 fax
☐ 2941 Sunrise Blvd, Suite 150, Rancho Cordova, CA 95742, 916.783.2060, 916.783.2464 fax
☐ 1739 Ashby Road, Suite B, Merced, CA 95348, 209.388.9601, 209.388.1778 fax

SHIPPED TO:

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534 (707) 207-7760

SEND RESULTS TO:

NAME: Micheline Doyle Kipf
E-MAIL: mkipf@condorearth.com
E-MAIL:

☑ PLEASE FAX/EMAIL RESULTS TO ADDRESS MARKED ABOVE

PROJECT NAME/LOCATION: COS Urban Discharge
EDF RESULTS REQUIRED ☐ YES ☑ NO
SITE GLOBAL ID:
PROJECT NO.: 6066J-06-01
SAMPLED BY: (Signature) Rebecca Fox

Date	Time	Sample Site Name	Sample ID (if different)	Matrix	# of containers	Preservatives (see below)	ANALYSIS /METHOD:	Field Filtered	Chronic Ceriodaphnia	Chronic flathead minnow							REMARKS	LAB ID#
6/19/19	0905	1819-DW38	SC-1R	S	2	1		N	✓	✓							chronic Ceriodaphnia dubia toxicity	
																	chrionic flathead minnow toxicity	
																	follow up dilution series as	
																	necessary (100% mortality/24hrs)	

Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)	Date:	Time:
[signature]	06/20/19	1230	[signature]	6/20/19	1230
Relinquished By: (Signature)			Received By: (Signature) Santel Thomas	6/20/19	1405

Matrix: DW Drinking Water; WW Waste Water; HWW Hazardous Waste (Water); S Soil/Solid; SW Storm Water; GW Ground Water

Preservative: 1 4°C; 2 HCL; 3 NaOH; 4 $Na_2S_2O_3$; 5 HNO_3; 6 H_2SO_4; 7 Other______

Original – Send   Yellow – File   Pink – Log Book

This page intentionally left blank for printing purposes

Appendix B

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the Ambient Water Sample to *Ceriodaphnia dubia*

This page intentionally left blank for printing purposes

CETIS Summary Report

Report Date: 07 Jul-19 10:25 (p 1 of 1)
Test Code/ID: CE_0620CD_C1 / 14-9449-5951

Ceriodaphnia Survival and Reproduction Test — **Pacific EcoRisk**

Batch ID: 21-1035-7356	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	James Lem	
Start Date: 20 Jun-19 14:59	**Protocol:**	EPA-821-R-02-013 (2002)	**Diluent:**	Not Applicable	
Ending Date: 27 Jun-19 10:17	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length: 6d 19h	**Taxon:**	Branchiopoda	**Source:**	In-House Culture	**Age:** 1

Sample Code	Sample ID	Sample Date	Receipt Date	Sample Age	Client Name	Project
CE_0620CD_C1	07-3522-3641	20 Jun-19 14:59	20 Jun-19 14:59	n/a (25.2 °C)	Condor Earth Technologi	28974
1819-DW38-SC-1R	16-3834-8904	19 Jun-19 09:05	20 Jun-19 14:05	30h (5.2 °C)		

Sample Code	Material Type	Sample Source	Station Location	Lat/Long
CE_0620CD_C1	Lab Water	Stockton Stormwater	LABQA	
1819-DW38-SC-1R	Ambient Water	Stockton Stormwater	SC-1R	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
13-5992-8114	Reproduction	Equal Variance t Two-Sample Test	2.3E-04	1819-DW38-SC-1R failed reproduction	1
13-4855-2638	Survival	Fisher Exact Test	0.5000	1819-DW38-SC-1R passed survival	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	TAC Limits Upper	Overlap	Decision
13-5992-8114	Reproduction	Control Resp	38.9	15	>>	Yes	Passes Criteria
13-5992-8114	Reproduction	PMSD	0.177	0.13	0.47	Yes	Passes Criteria

Reproduction Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_0620CD_C1	LW	10	38.9	35.2	42.6	27	46	1.66	5.24	13.46%	0.00%
1819-DW38-SC-1R		10	21.9	13.7	30.1	0	37	3.62	11.4	52.22%	43.70%

Survival Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_0620CD_C1	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
1819-DW38-SC-1R		10	0.900	0.674	1.000	0.000	1.000	0.100	0.316	35.14%	10.00%

Reproduction Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
CE_0620CD_C1	LW	46	42	39	34	42	40	39	42	27	38
1819-DW38-SC-1R		24	17	7	37	27	32	20	31	24	0

Survival Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
CE_0620CD_C1	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1819-DW38-SC-1R		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000

Survival Binomials

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
CE_0620CD_C1	LW	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
1819-DW38-SC-1R		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	0/1

CETIS Analytical Report

Report Date: 07 Jul-19 10:24 (p 1 of 1)
Test Code/ID: CE_0620CD_C1 / 14-9449-5951

Ceriodaphnia Survival and Reproduction Test — **Pacific EcoRisk**

Analysis ID:	13-4855-2638	**Endpoint:**	Survival	**CETIS Version:**	CETISv1.9.6
Analyzed:	07 Jul-19 10:23	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1

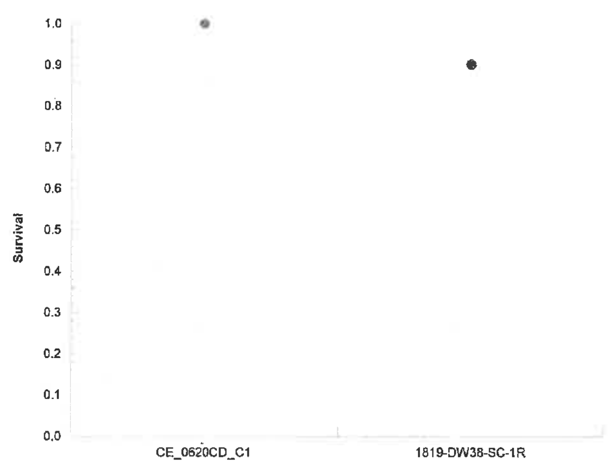
Fisher Exact Test

Sample I vs	Sample II	Test Stat	P-Type	P-Value	Decision(α:5%)
Lab Water Control	1819-DW38-SC-1R	0.500	Exact	0.5000	Non-Significant Effect

Data Summary

Sample	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
CE_0620CD_C1	LW	10	0	10	1	0	-11.1%
1819-DW38-SC-1R		9	1	10	0.9	0.1	0.0%

Graphics



CETIS Analytical Report

Report Date: 07 Jul-19 10:23 (p 1 of 1)
Test Code/ID: CE_0620CD_C1 / 14-9449-5951

Ceriodaphnia Survival and Reproduction Test — **Pacific EcoRisk**

Analysis ID:	13-5992-8114	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.9.6
Analyzed:	07 Jul-19 10:23	**Analysis:**	Parametric-Two Sample	**Status Level:**	1

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-DW38-SC-1R failed reproduction	17.73%

Equal Variance t Two-Sample Test

Sample I vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Control	1819-DW38-SC-1R*	4.27	1.73	6.9	18	CDF	2.3E-04	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1445	1445	1	18.3	4.6E-04	Significant Effect
Error	1423.8	79.1	18			
Total	2868.8		19			

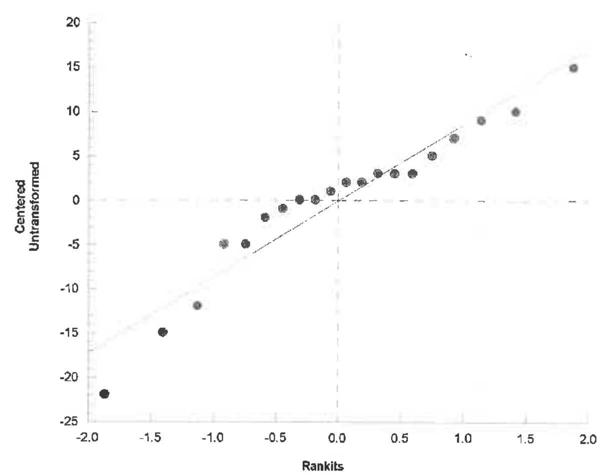
ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test	4.77	6.54	0.0293	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.936	0.866	0.1984	Normal Distribution

Reproduction Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0620CD_C1	LW	10	38.9	35.2	42.6	39.5	27	46	1.66	13.46%	0.00%
1819-DW38-SC-1R		10	21.9	13.7	30.1	24	0	37	3.62	52.22%	43.70%

Graphics



This page intentionally left blank for printing purposes

Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data

Client: **Condor Earth: Stockton** Material: SC1 **Effluent** Test Date: 6/20/19

Project #: 28974 Test ID: 78634 Control Water: Mod EPAMH

Lab Water Control

Day	pH New	pH Old	D.O. New	D.O. Old	Cond. (µS/cm)	Temp (°C)	A	B	C	D	E	F	G	H	I	J	SIGN-OFF
0	7.90		8.3		376	25.2	0	0	0	0	0	0	0	0	0	0	Date: 6/20/19 New WQ: KG Test Init.: RG Sol'n Prep: KG Time: 1459
1	8.02	8.08	8.8	8.4	358	24.7	0	0	0	0	0	0	0	0	0	0	Date: 6/21/19 New WQ: SR Counts: RG Sol'n Prep: SMC Old WQ: NN Time: 1252
2	8.00	8.01	8.5	8.6	363	24.8	0	0	0	0	0	0	0	0	0	0	Date: 6/22/19 New WQ: SAT Counts: TK Sol'n Prep: RG Old WQ: SAT Time: 1120
3	8.03	8.28	9.2	8.4	355	24.4	0	0	0	0	0	0	0	0	5	0	Date: 6/23/19 New WQ: NN Counts: TK Sol'n Prep: KG Old WQ: NN Time: 1230
4	8.03	8.09	8.8	7.9	344	24.3	6	7	7	6	8	6	7	8	0	7	Date: 6/24/19 New WQ: [illegible] Counts: KG Sol'n Prep: KG Old WQ: TF Time: 1237
5	7.96	7.96	7.3	7.7	346	24.1	14	15	14	12	15	13	15	14	11	11	Date: 6/25/19 New WQ: NN Counts: KL Sol'n Prep: KG Old WQ: [illegible] Time: 1330
6	8.09	7.68	8.6	6.3	346	24.4	0	0	0	16	19	21	17	0	11	0	Date: 6/26/19 New WQ: MB Counts: TF Sol'n Prep: KL Old WQ: TA Time: 1439
7	—	7.80	—	7.5	368	24.2	26	20	18	0	0	0	0	20	0	20	Date: 6/27/19 New WQ: — Counts: RG Sol'n Prep: — Old WQ: TF Time: ~~0954~~
8																	Date: Old WQ: Counts: Time:
						Total=	46	42	39	34	42	40	39	42	27	38	Mean Neonates/Female = 38.7

nc 6/27/19
1017

100%

Day	pH New	pH Old	D.O. New	D.O. Old	Cond. (µS/cm)		A	B	C	D	E	F	G	H	I	J	SAMPLE ID
0	7.72		8.1		213	25.1	0	0	0	0	0	0	0	0	0	0	53246
1	7.82	8.10	8.5	7.7	232	24.8	0	0	0	0	0	0	0	0	0	0	53246
2	7.75	7.99	8.4	7.8	220 ~~314~~ TK 6/22/19	24.8	0	0	0	0	0	0	0	0	0	0	53246
3	7.95	8.21	9.2	8.0	218	24.5	0	0	0	0	0	0	0	0	0	0	53246
4	8.00	8.13	9.3	8.0	212	24.3	2	2	0	5	4	1	1	5	0	X/0	53246
5	7.86	8.04	8.0	7.6	218	24.1	1	1	0	7	4	8	0	3	9	–	53246
6	8.01	7.79	8.6	6.5	212	24.2	0	14	7	25	18	22	18	0	15	–	53246
7	—	8.03	—	7.8	226	24.4	21	0	0	0	1	1	1	23	0	–	—
8																–	
						Total=	24	17	7	37	27	32	20	31	24	X/0	Mean Neonates/Female = 21.9

0 = split brood. included in total. - NL 7/11/19

This page intentionally left blank for printing purposes

Appendix C

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the Ambient Water Sample to Fathead Minnows

This page intentionally left blank for printing purposes

CETIS Summary Report

Report Date:	08 Jul-19 16:23 (p 1 of 1)
Test Code/ID:	28974 / 16-5747-9186

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Batch ID:	17-4500-2864	**Test Type:**	Growth-Survival (7d)	**Analyst:**	James Lem
Start Date:	20 Jun-19 15:15	**Protocol:**	EPA-821-R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	27 Jun-19 08:12	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 17h	**Taxon:**	Actinopterygii	**Source:**	Aquatox, AR **Age:** 1

Sample ID:	01-3689-5449	**Code:**	Ambient Water	**Project:**	28974
Sample Date:	20 Jun-19 09:05	**Material:**	Lab Water	**Source:**	Stockton Stormwater
Receipt Date:	20 Jun-19 14:05	**CAS (PC):**		**Station:**	SC-1R
Sample Age:	6h (5.2 °C)	**Client:**	Condor Earth Technologies		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
20-7038-1511	7d Survival Rate	Equal Variance t Two-Sample Test	0.5000	100% passed 7d survival rate	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	TAC Limits Upper	Overlap	Decision
20-7038-1511	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
100		10	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	LW	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
100		2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2

CETIS Analytical Report

Report Date:	08 Jul-19 16:21 (p 1 of 1)
Test Code/ID:	28974 / 16-5747-9186

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Analysis ID:	20-7038-1511	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.6
Analyzed:	08 Jul-19 16:21	**Analysis:**	Parametric-Two Sample	**Status Level:**	1

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% passed 7d survival rate	12.50%

Equal Variance t Two-Sample Test

Control vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Contr	100	0	1.73	2E-08	18	CDF	0.5000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	0	1.0000	Non-Significant Effect
Error	7.105E-15	3.947E-16	18			
Total	7.105E-15		19			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test	1	6.54	1.0000	Equal Variances

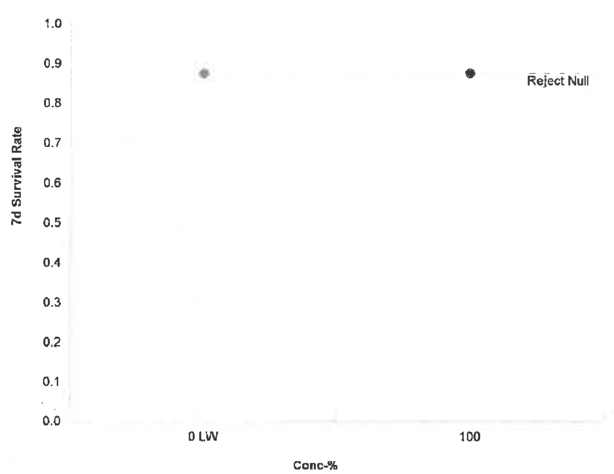
7d Survival Rate Summary

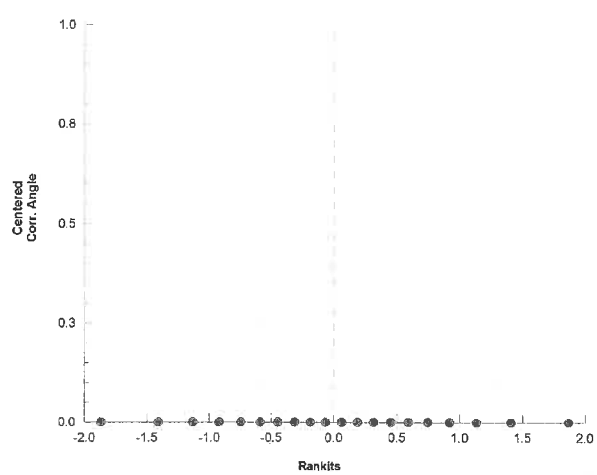
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
100		10	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	10	1.21	1.21	1.21	1.21	1.21	1.21	0	0.00%	0.00%
100		10	1.21	1.21	1.21	1.21	1.21	1.21	0	0.00%	0.00%

Graphics





7 Day Chronic Fathead Minnow Toxicity Test Data

Client:	**Condor Earth - Stockton**	Organism Log#:	11650
Age:	<48hr	Sample:	ScR
Organism Supplier:	Aquatox	Test ID#:	78635
Project #:	28974	Control/Diluent:	EPAMH
Test Date:	6/20/19	Control Water Batch:	2192

Day	Treatment (%)	Temp (°C)	pH New	pH Old	D.O. (mg/L) New	D.O. (mg/L) Old	Conductivity (µS/cm)	A	B	C	D	E	F	G	H	I	J
Day 0	Control	24.5	7.94		8.2		305	2	2	2	2	2	2	2	2	2	2
	100	24.9	7.86		7.9		214	2	2	2	2	2	2	2	2	2	2
	Meter ID	54	PH24		RD11		EC11										
	Date: 6/20/19	Sample ID: 53246	Test Solution Prep: KG		New WQ: KG			Initiation Time: 1515					Initiation Sign-off: WC				
Day 1	Control	25.0	7.82	7.77	8.5	6.5	310	2	2	2	2	2	2	2	2	2	2
	100	25.1	7.76	7.58	8.5	5.8	217	2	2	2	2	2	2	2	2	2	2
	Meter ID	99A	PH24	PH25	RD11	RD11	EC11										
	Date: 6/21/19	Sample ID: 53246	Test Solution Prep: SMC		New WQ: SR	Old WQ: TA		Renewal Time: 1141					Renewal Sign-off: [illegible]				
Day 2	Control	25.8	7.94	7.48	8.7	6.5	319	2	2	2	2	2	2	2	2	2	2
	100	25.9	7.78	7.47	7.4	6.2	209	2	2	2	2	2	2	2	2	2	2
	Meter ID	105A	PH24	PH24	RD11	RD11	EC11										
	Date: 6/22/19	Sample ID: 53246	Test Solution Prep: RG		New WQ: SAT	Old WQ: SAT		Renewal Time: 1011					Renewal Sign-off: RG				
Day 3	Control	25.7	8.00	7.72	8.5	6.8	301	2	2	2	2	2	2	2	2	2	2
	100	25.7	7.84	7.75	8.9	6.7	211	2	2	2	2	2	2	2	2	2	2
	Meter ID	54	PH26	PH26	RD12	RD12	EC14										
	Date: 6/23/19	Sample ID: 53246	Test Solution Prep: KG		New WQ: NN	Old WQ: NN		Renewal Time: 1140					Renewal Sign-off: TK				
Day 4	Control	25.4	7.93	7.92	8.2	6.9	302	2	2	2	2	2	2	2	2	2	2
	100	25.4	7.94	7.90	8.8	7.1	215	2	2	2	2	2	2	2	2	2	2
	Meter ID	40A	PH26	PH26	RD11	RD11	EC10										
	Date: 6/24/19	Sample ID: 53246	Test Solution Prep: KG		New WQ: NN	Old WQ: WC		Renewal Time: 1140					Renewal Sign-off: TK				
Day 5	Control	25.7	7.87	7.36	6.6	5.0	305	2	2	2	2	2	2	2	2	2	2
	100	25.8	7.88	7.48	7.5	5.0	215	2	2	2	2	2	2	2	2	2	2
	Meter ID	105A	PH24	PH24	RD13	RD13	EC13										
	Date: 6/25/19	Sample ID: 53246	Test Solution Prep: KG		New WQ: NN	Old WQ: TA		Renewal Time: 1118					Renewal Sign-off: RG				
Day 6	Control	25.1	8.01	7.69	8.1	6.6	304	2	2	2	2	2	2	2	2	2	2
	100	25.1	7.88	7.72	9.1	6.2	201	2	2	2	2	2	2	2	2	2	2
	Meter ID	105A	PH24	PH26	RD10	RD10	EC10										
	Date: 6/26/19	Sample ID: 53246	Test Solution Prep: KL		New WQ: MB	Old WQ: TA		Renewal Time: 1045					Renewal Sign-off: RG				
Day 7	Control	25.1		7.75		6.8	311	2	2	2	2	2	2	2	2	2	2
	100	25.3		7.77		6.4	222	2	2	2	2	2	2	2	2	2	2
	Meter ID	112A		PH24		RD11	EC11										
	Date: 6/27/19					Old WQ: TF		Termination Time: 0812					Termination Sign-off: SMC				

CETIS Summary Report

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Batch ID:	09-2449-8133	**Test Type:**	Growth-Survival (7d)	**Analyst:**	James Lem
Start Date:	20 Jun-19 15:15	**Protocol:**	EPA-821-R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	27 Jun-19 08:12	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 17h	**Taxon:**	Actinopterygii	**Source:**	Aquatox, AR **Age:** 1

Sample Code	Sample ID	Sample Date	Receipt Date	Sample Age	Client Name	Project
CE_0620PP_C1	01-0122-5554	20 Jun-19 15:15	20 Jun-19 15:15	n/a (24.5 °C)	Condor Earth Technologi	28974
1819-DW38-SC-1R	16-3834-8904	19 Jun-19 09:05	20 Jun-19 14:05	30h (5.2 °C)		

Sample Code	Material Type	Sample Source	Station Location	Lat/Long
CE_0620PP_C1	Lab Water	Stockton Stormwater	LABQA	
1819-DW38-SC-1R	Ambient Water	Stockton Stormwater	SC-1R	

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
06-4714-8070	Mean Dry Biomass-mg	Equal Variance t Two-Sample Test	0.7095	1819-DW38-SC-1R passed mean dry biom	1
20-4812-8552	Mean Dry Weight-mg	Equal Variance t Two-Sample Test	0.7095	1819-DW38-SC-1R passed mean dry weig	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	TAC Limits Upper	Overlap	Decision
06-4714-8070	Mean Dry Biomass-mg	Control Resp	0.364	0.25	>>	Yes	Passes Criteria
06-4714-8070	Mean Dry Biomass-mg	PMSD	0.213	0.12	0.3	Yes	Passes Criteria

Mean Dry Biomass-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_0620PP_C1	LW	5	0.364	0.282	0.446	0.258	0.423	0.0296	0.0663	18.21%	0.00%
1819-DW38-SC-1R		5	0.388	0.306	0.47	0.315	0.475	0.0294	0.0657	16.92%	-6.59%

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
CE_0620PP_C1	LW	5	0.364	0.282	0.446	0.258	0.423	0.0296	0.0663	18.21%	0.00%
1819-DW38-SC-1R		5	0.388	0.306	0.47	0.315	0.475	0.0294	0.0657	16.92%	-6.59%

Mean Dry Biomass-mg Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
CE_0620PP_C1	LW	0.423	0.258	0.388	0.408	0.345
1819-DW38-SC-1R		0.43	0.338	0.382	0.315	0.475

Mean Dry Weight-mg Detail

Sample	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
CE_0620PP_C1	LW	0.423	0.258	0.388	0.408	0.345
1819-DW38-SC-1R		0.43	0.338	0.382	0.315	0.475

Chronic Larval Fish Survival and Growth Test			Pacific EcoRisk
Analysis ID: 06-4714-8070	**Endpoint:** Mean Dry Biomass-mg	**CETIS Version:** CETISv1.9.6	
Analyzed: 07 Jul-19 10:35	**Analysis:** Parametric-Two Sample	**Status Level:** 1	

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-DW38-SC-1R passed mean dry biomas	21.31%

Equal Variance t Two-Sample Test

Sample I vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Control	1819-DW38-SC-1R	-0.575	1.86	0.078	8	CDF	0.7095	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0014397	0.0014397	1	0.331	0.5810	Non-Significant Effect
Error	0.0348105	0.0043513	8			
Total	0.0362502		9			

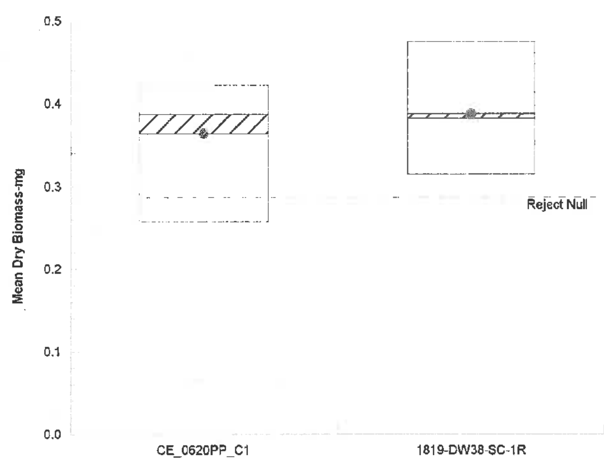
ANOVA Assumptions Tests

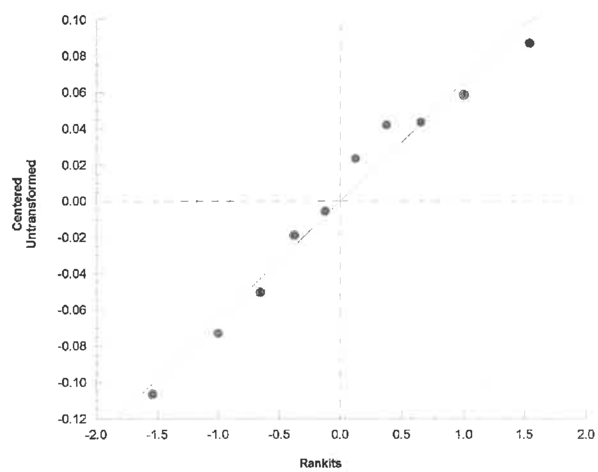
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test	1.02	23.2	0.9859	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.963	0.741	0.8169	Normal Distribution

Mean Dry Biomass-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0620PP_C1	LW	5	0.364	0.282	0.446	0.388	0.258	0.423	0.0296	18.21%	0.00%
1819-DW38-SC-1R		5	0.388	0.306	0.47	0.382	0.315	0.475	0.0294	16.92%	-6.59%

Graphics





Analyst: JL QA: [illegible]

Chronic Larval Fish Survival and Growth Test					Pacific EcoRisk
Analysis ID: 20-4812-8552	**Endpoint:** Mean Dry Weight-mg		**CETIS Version:** CETISv1.9.6		
Analyzed: 07 Jul-19 10:35	**Analysis:** Parametric-Two Sample		**Status Level:** 1		

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	1819-DW38-SC-1R passed mean dry weight-	21.31%

Equal Variance t Two-Sample Test

Sample I vs	Sample II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Control	1819-DW38-SC-1R	-0.575	1.86	0.078	8	CDF	0.7095	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0014397	0.0014397	1	0.331	0.5810	Non-Significant Effect
Error	0.0348105	0.0043513	8			
Total	0.0362502		9			

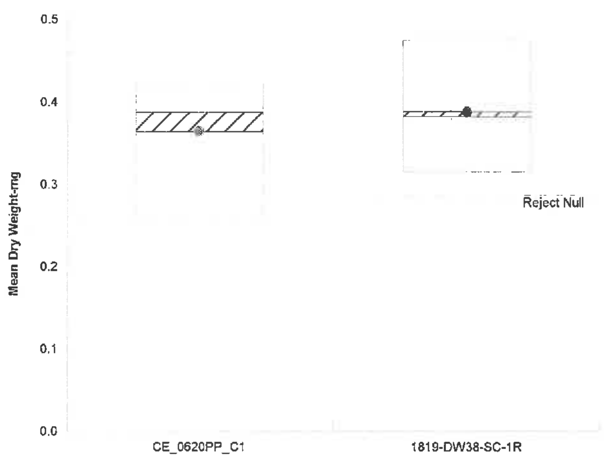
ANOVA Assumptions Tests

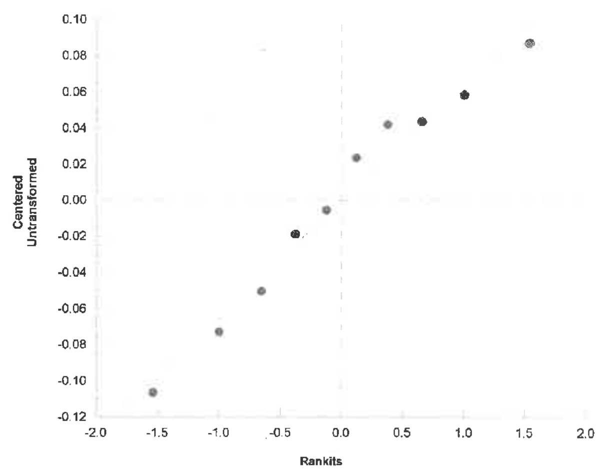
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test	1.02	23.2	0.9859	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.963	0.741	0.8169	Normal Distribution

Mean Dry Weight-mg Summary

Sample	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
CE_0620PP_C1	LW	5	0.364	0.282	0.446	0.388	0.258	0.423	0.0296	18.21%	0.00%
1819-DW38-SC-1R		5	0.388	0.306	0.47	0.382	0.315	0.475	0.0294	16.92%	-6.59%

Graphics





Fathead Minnow Dry Weight Data Sheet

Client: **Condor Earth - Stockton** Test ID #: 78635 Project #: 28974

Sample: SC1R 'eight Date: 6/22/19 Sign-off: TA

Test Date: 6/20/19 Final Weight Date: 6/29/19 Sign-off: BM

Pan	Concentration	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Control	A+B	407.20	408.89	4	~~0.169~~ 0.423
2		C+D	409.86	410.89	4	~~0.103~~ 0.258
3		E+F	404.65	406.20	4	~~0.155~~ 0.388
4		G+H	400.08	401.71	4	~~0.163~~ 0.408
5		I+J	406.54	407.92	4	~~0.138~~ 0.345
6	100%	A+B	415.25	416.97	4	~~0.172~~ 0.430
7		C+D	399.61	400.96	4	~~0.135~~ 0.338
8		E+F	413.33	414.86	4	~~0.153~~ 0.382
9		G+H	415.86	417.12	4	~~0.126~~ 0.315
10		I+J	402.43	404.33	4	~~0.190~~ 0.475
QA 1	—		405.29	405.29	—	—
QA 2	—		410.29	410.29	—	—
Balance ID			Bal.04	Bal 04		