STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

MEETING DATE: November 14, 2018

ITEM: **5**

SUBJECT: **EXECUTIVE OFFICER'S REPORT**

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD

EXECUTIVE OFFICER'S REPORT: *November 2018*

A Monthly Report to the Board and Public

NEXT MEETING: November 14, 2018 **WEBSITE:** http://www.waterboards.ca.gov/sanfranciscobay/

Items in this Report (Author[s])

Workshops and Compliance Assistance for Dairies and Horse Boarding Facilities (Laurie Taul)

Dairies: Annual Report Completion and Nutrient Management Planning Help

On October 16, the California Dairy Quality Assurance Program (CDQAP) hosted another set of educational workshops in Point Reyes Station and Petaluma. The workshops are designed to assist dairy producers in understanding and complying with the Board's Conditional Waiver of Waste Discharge Requirements (WDRs) for Dairies (Waiver). Immediately following the Board's adoption of the Waiver in 2015, CDQAP stepped forward and began to develop Waiver-specific courses to help dairy producers understand the conditions of the Waiver and to provide technical compliance assistance. CDQAP has also developed record-keeping forms, tools, and templates, specific to our Waiver, to help the producers with Waiver compliance and farm management. This fall's sessions focused on helping dairy producers develop a site-specific Nutrient Management Plan, with an emphasis on standards for land-application of liquid and solid manure (due November 2019), and complete this year's Annual Report form (due November 30).

The Western United Dairymen Association also provides free assistance to its members, helping them to complete their Annual Report or other plans required by the Waiver. In addition, the USDA Natural Resources Conservation Service provides technical and financial assistance to dairies. Those that apply within certain deadlines may receive professional assistance in completing their Nutrient Management Plan and financial assistance for installation of facility improvements for water quality protection.

Next spring, additional workshops and drop-in sessions will focus on completing Nutrient Management Plans, including developing a nutrient budget using site-specific sampling and analysis of ranch soil, manure, process water, irrigation water. and plant tissues.

Horse Boarding: Horse-Keeping for Clean Water

The Marin Horse Council, the Tomales Bay Watershed Council, and Halleck Creek Ranch hosted the second annual workshop for horse facility owners and managers on October 26 in Nicasio, Marin County. The workshop was well attended by local horse keepers who are required to comply with the Board's 2016 General WDRs for Confined Animal Facilities (Permit). The all-day event included presentations by Board staff and other experts in animal facility management practices (Figure 1). Followup discussion focused on facility assessment, ranch plan development, and monitoring requirements. Rob Carson, Marin County Stormwater Program Manager, demonstrated how to conduct easy onsite water quality testing, using simple test strips, and hand-held sampling probes. Attendees walked the grounds of Halleck Creek Ranch (Figure 2) to see field demonstrations of practical techniques for stormwater runoff, manure, and pasture management (Figures 3 and 4). In addition to the practical information for ranch planning and choosing best management practices, attendees also received important resources for equine emergency evacuation planning.

Figure 1. *Classroom session at Halleck Creek Ranch*

Figure 2*. Practical demonstration of best management practices to protect water quality*

Figure 3. *Good practices in managing runoff: roof gutter capture and redirection of clean stormwater*

Figure 4. *Sediment control for areas with concentrated flow*

Sanitary Sewer Overflow Strategy (Mary Boyd and Bill Johnson)

In the June Executive Officer's Report, we reported on our strategy for wet weather discharges, including discussing sanitary sewer overflows (SSOs) as they relate to wet weather. Here, we focus specifically on SSOs during both dry and wet weather.

SSOs are spills from sanitary sewer systems that collect and convey sewage to municipal wastewater treatment plants. We oversee 132 sanitary sewer systems, serving about 7.5 million people. These systems have about 18,000 miles of sewer pipe. Unfortunately, sometimes not all the sewage in these pipes makes it to the treatment plants. SSOs can release untreated sewage to land or surface waters or both. SSOs contain pollutants, such as pathogens, organic matter, nutrients, and solid materials, like personal hygiene products. The organic matter and nutrients in SSOs can suffocate aquatic life by depleting oxygen in receiving waters. The pathogens in SSOs can pose public health risks. The solid materials are both unsanitary and unsightly.

Figure 5 shows the primary causes of SSOs in the San Francisco Bay Region. Blockages caused by roots, debris, and fats, oils, and grease (FOG) account for almost 70 percent of SSOs. Root blockages can occur when moisture-seeking roots penetrate and grow within a collection system pipe. FOG contributes to blockages by accumulating in pipes with low or slow flows. Along with FOG, debris can build up on roots over time, further constricting flows. When a collection system is blocked, sewage backs up and overflows at the point of least resistance, such as a manhole cover, cleanout, broken pipe, or pump station.

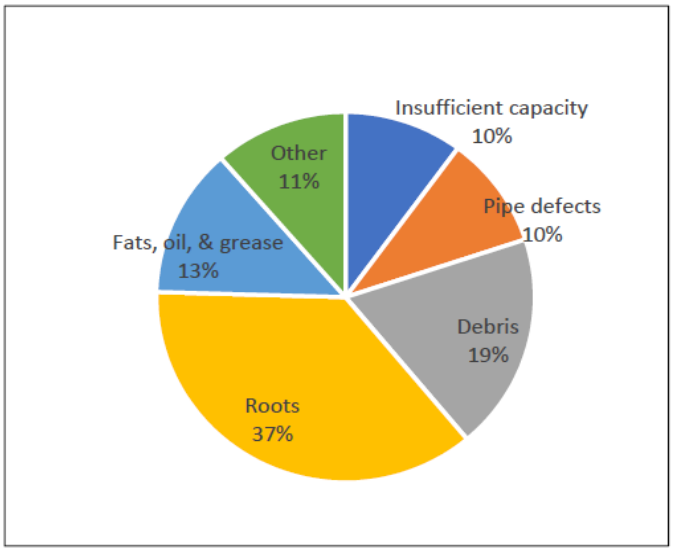

Figure 5: *SSO Causes in San Francisco Bay Region, 2016 through 2017*

Insufficient sewer system capacity (e.g., during periods of high wet-weather infiltration and inflow) accounts for about 10 percent of SSOs. Wet-weather infiltration and inflow can overwhelm a system's capacity, particularly if that capacity is already compromised by blockages or if there is a pipe defect. Infiltration occurs when groundwater seeps into leaky sewer lines, and inflow occurs when rain enters the collection system directly, such as through manhole covers or storm-sewer cross connections. Because of infiltration and inflow, wet-weather SSOs tend to be more dilute than dry-weather SSOs, but they also tend to involve greater volumes and are therefore more prone to reach surface water.

We focus our attention on SSOs to surface water, versus SSOs to land, because of their typically larger volumes and potential harm to water quality. The State Board's *General Waste Discharge Requirements for Sanitary Sewer Systems* (Statewide General WDRs) defines SSOs that reach surface waters as Category 1 SSOs. These include SSOs that reach a drainage channel tributary to a surface water or a storm sewer system and are not fully captured and returned to the sanitary sewer system or otherwise disposed of properly. Figures 6a and 6b show that Category 1 SSOs represent a relatively small fraction of all SSOs, both statewide and regionwide. These figures also show that the overall number of SSOs has declined over time, although this trend is less clear for Category 1 SSOs.

Category 1 SSOs correlate somewhat with rainfall. For example, the number of Category 1 SSOs increased in the 2016/2017 water year due to several large and sustained rain events. Figure 7 compares our Region's rainfall (based on a collection of California Department of Water Resources and National Oceanic and Atmospheric Administration data) to the number of Category 1 SSOs in the Region for each water year.

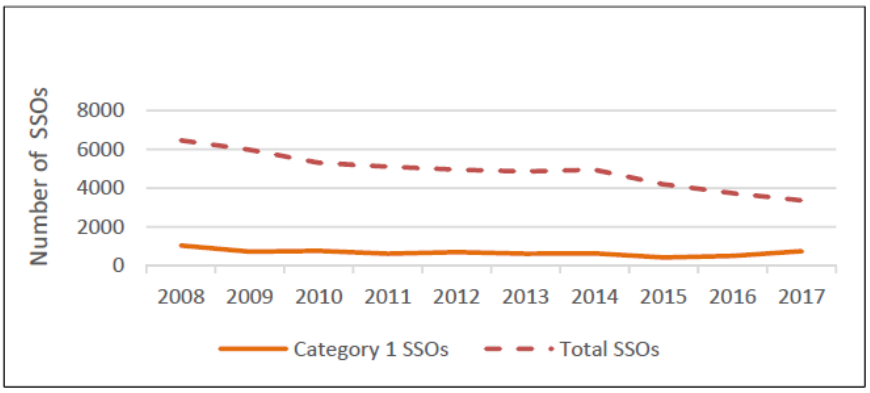

Figure 6a: *Total and Category 1 SSOs in California*

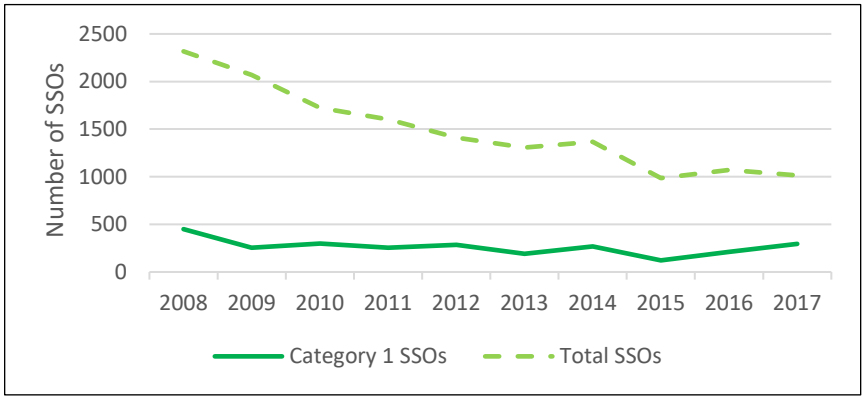

Figure 6b: *Total and Category 1 SSOs in San Francisco Bay Region*

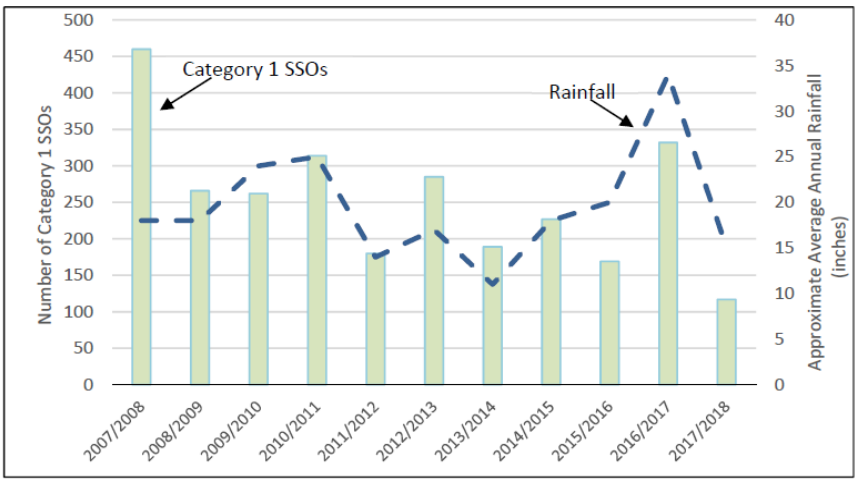

Figure 7: *Rainfall versus Category 1 SSOs in San Francisco Bay Region*

Decreasing SSO rates and volumes has been a Water Board priority for many years. We have invested significant time inspecting and auditing collection systems, issuing staff enforcement letters and notices of violation, assessing fines, and preparing cease and desist orders. Nevertheless, we expect SSOs to remain a priority for many years to come because (1) as shown in Figure 8, the Region's Category 1 SSO rate (per 100 miles of pipe) is somewhat higher than the statewide rate, and (2) our Region has relatively old collection systems, hilly urban terrain, and often abundant rain. Moreover, as also shown in Figure 8, Category 1 SSO rates in our Region may not yet be improving as much as we would like. SSO rates vary a great

deal from year to year, and, due to this variability, greater reductions are needed before a downward trend can be confirmed. We expect that it will take many more years for all collection system agencies to plan, secure funding for, and implement the significant infrastructure improvements needed to rehabilitate their systems and prevent most SSOs.

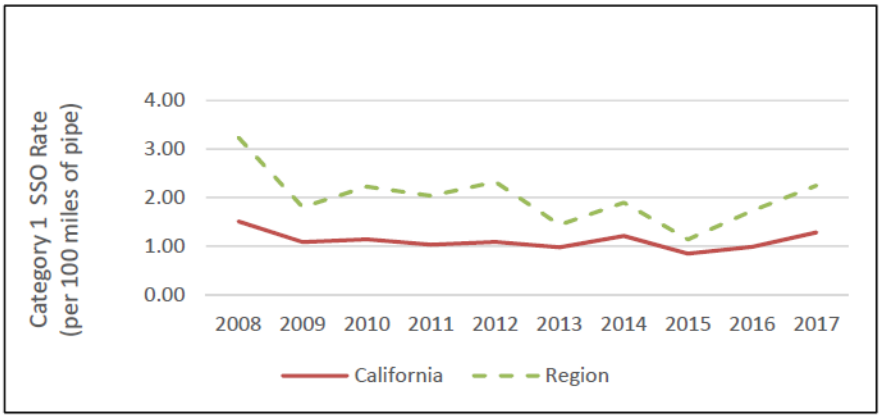

Figure 8: *Category 1 SSO Rates per 100 Miles of Pipe in California and San Francisco Bay Region*

As explained in June, we continue to assess collection system compliance with the Statewide General WDRs and, where applicable, NPDES permits. We work to bring non-compliant systems back into compliance, prioritizing our oversight based on each collection system's (1) number and volume of SSOs (relative to system size), (2) system age and construction materials, (3) adequacy of reporting, and (4) nature and history of violations. We target the poorest performing systems for inspections and audits. We also consider whether the Board has previously taken formal enforcement.

In the coming year, we specifically plan to evaluate each high-priority collection system agency's permit-required sewer replacement and rehabilitation plan and the extent to which the agency is implementing its plan. We will investigate whether completed and planned improvements are based on actual condition assessments, whether sewer fees are adequate to fund planned projects, and whether work is progressing at planned rates. We will seek improvements where necessary, either by encouraging voluntary actions or by proposing more specific requirements through NPDES permits or cease and desist orders. Finally, when the State Board considers amendments to the Statewide General WDRs, we will offer constructive suggestions to strengthen existing requirements.

Presentation of Sanitary Sewer Overflow (SSO) Data in NPDES Permits (Robert Schlipf)

We summarize SSO data in NPDES permit fact sheets for collection systems subject to NPDES permits. Sometimes, the information we present brings up as many questions as answers. To address some challenges in meaningfully presenting these data, we are changing how we compile this information. Going forward, we will focus solely on Category 1 SSOs (see previous item) and only compare each collection system's SSO rate (per 100 miles) with those of the San Francisco Bay Region and the State of California. Our reasons are twofold: (1) NPDES

permits focus on discharges that actually reach waters of the United States (e.g., Category 1 SSOs), and (2) comparisons using regionwide and statewide data provide a more robust basis for comparing collection system performance than the comparisons we previously presented.

In the past, we compared each system against similarly-sized collection systems within the same county. This approach sometimes led to misleading results. For instance, some agencies consider lower laterals (the pipes between private sewer laterals and a main sewer line, typically in the street) to be the homeowner's responsibility, and some do not. Therefore, some agencies report SSOs from both main lines and lower laterals, and some only report SSOs from main lines. Agencies reporting lower lateral SSOs have higher SSO rates, even if their performance is similar to those that do not report lower lateral SSOs. However, because most lower lateral SSOs involve relatively small volumes (e.g., 5 to 10 gallons) that rarely reach surface waters, this inconsistent reporting has little effect on Category 1 SSO rates.

Our new approach also eliminates the use of very small data sets for comparisons. Sometimes very few or no other similarly-sized collection systems exist within a county. These small data sets exhibit extremely high year-to-year variability (exacerbated by inconsistent lower lateral SSO reporting). Comparing SSO rates for an individual collection system to those for the entire San Francisco Bay Region and the entire State will provide more meaningful assessments.

The table below shows how we plan to present SSO data in future NPDES permit fact sheets. In this example, we present the City of Burlingame's SSO rates (we discussed the Burlingame's SSOs in the August Executive Officer's Report).

Burlingame Collection System Category 1 SSO Rates (SSOs per 100 miles)

	Length (miles)	Average Age of Pipe (years)	Category 1 SSO Rate				
			2013	2014	2015	2016	2017
City of Burlingame Collection System	118	72	2.5	0.8	0.0	0.8	0.8
San Francisco Bay Region	17,700	45	1.1	1.5	0.7	1.2	1.7
California	89,100	52	0.7	0.7	0.5	0.6	0.8

Although comparing Category 1 SSO rates is a useful way to evaluate collection system performance, the State Board's *Enrollee's Guide to the SSO Database* cautions, "Due to the large variation in facility specific characteristics, this metric should only be viewed as a rough comparison of the operation and maintenance performance of enrollees and their sanitary sewer systems." We welcome the Board's input on this issue.

Reducing Infiltration and Inflow through Private Sewer Lateral Ordinances
(Mary Boyd)

In the June Executive Offer's Report, we explained that a common culprit for both wet weather sanitary sewer overflows (SSOs) and treatment bypasses is excess infiltration and inflow. As illustrated in Figure 9, infiltration occurs through poorly maintained, leaky sewer pipes. Inflow occurs through manholes and illicit stormwater connections. Studies show that poorly maintained private sewer laterals (the connections from privately-owned buildings to

public collection systems) can account for roughly 50 percent of infiltration and inflow. Therefore, addressing private sewer laterals is essential to controlling infiltration and inflow.

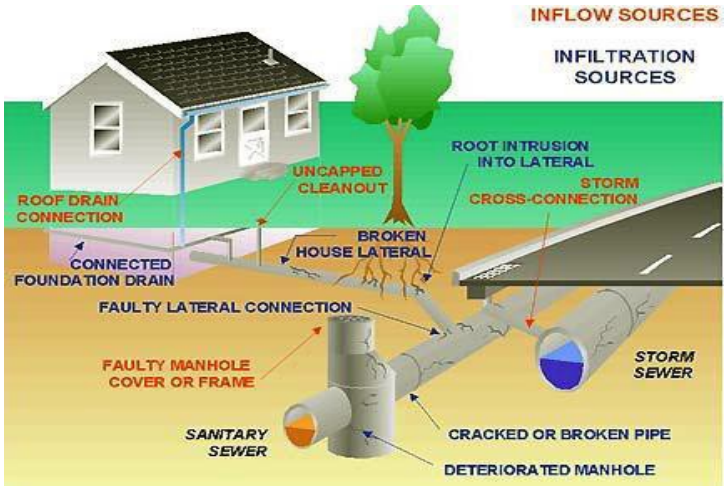

Figure 9: *Sources of Infiltration and Inflow (U.S. EPA Fact Sheet, June 2014)*

Through Resolution No. R2-2005-0059, the Board expressed its support for, and encouragement of, local communities and collection system agencies implementing programs that require inspection and rehabilitation of private sewer laterals to reduce infiltration and inflow. Ordinances mandating private sewer lateral improvements upon sale or significant remodel are an effective tool to address private sewer laterals (voluntary programs are less effective). 43 communities have adopted ordinances that require private sewer lateral inspection and repair upon property sale, title transfer, or significant remodel. Some communities and agencies have faced serious objections to such ordinances. 61 communities do not have a private sewer lateral ordinance for mandatory inspections and repair. We continue to leverage the tools at our disposal to encourage communities and agencies to adopt robust private sewer lateral ordinances.

Former Moffett Field Naval Air Station Dispute and Settlement (Elizabeth Wells)

On October 10, 2018, we, along with U.S. EPA, agreed to settle a dispute with the U.S. Navy for failure to operate a groundwater remedy at the former Moffett Field Naval Air Station (Moffett Field) in Mountain View. Under the settlement, referred to as the "Resolution of Stipulated Penalties", the Navy agreed to pay $436,250, half to U.S EPA and half to the State Board's Cleanup and Abatement Account.

The dispute occurred over the Navy's alleged failure to operate its Site 28 West-side Aquifers Treatment System (WATS) groundwater remedy, consisting of nine source control extraction wells and an ex-situ groundwater treatment system. The WATS was installed in the early 1990s by the Navy to hydraulically contain and remediate volatile organic compounds in groundwater. The Navy operated the WATS continuously until September 30, 2016, when its operation, maintenance, and monitoring was transferred to NASA. Following an in-person inspection on October 17, 2016, NASA and the Navy informed U.S. EPA and the Water Board

that the system was not operational, and it was unknown for how long it was dysfunctional. NASA repaired and restarted the WATS on November 28, 2016.

For several months U.S. EPA and Water Board staff (Elizabeth Wells) and attorneys, worked with the Navy to investigate why and for how long the WATS was not operating correctly. This culminated in issuance of a joint-agency Notice of Violation (NOV) on July 13, 2017. The NOV indicated that the agencies were evaluating stipulated penalties against the Navy for failure to operate, maintain, monitor, and report on the WATS remedy. Assessment of stipulated penalties is an enforcement option under the 1990 Federal Facilities Agreement (FFA) that governs regulatory oversight of Moffett Field.

Following discussion with Navy, U.S. EPA, in consultation with Water Board staff, determined that stipulated penalties were justified, and, on May 14, 2018, assessed penalties against the Navy for five FFA violations amounting to $477,500. The violations included:

1. Failure to Fully Operate Groundwater Remedy
2. Failure to Maintain Groundwater Remedy
3. Failure to Conduct Daily Remote Monitoring
4. Failure to Conduct Routine Monitoring and Reporting
5. Failure to Notify Agencies of Groundwater Remedy Shutdowns

After several meetings and discussions, the Navy agreed to a reduced penalty amount of $436.250.This is the first statewide test of the stipulated penalties clause in our FFAs. Although the process was challenging, it avoided a formal dispute process that could have ended in a waiver of all penalties.

In-house Training

In September, we kicked-off this fiscal year's in-house training with "Critical Thinking." We explored how we think, how we make decisions, and how to improve both. Our instructor was Mike Deas, PhD, of Watercourse Engineering, Inc. Dr. Deas' focus is surface water consulting, and his case study exercise was thinking through a dam removal project. The training was organized by the Groundwater Protection Division (Elizabeth Wells and David Tanouye). The next training is scheduled for January and the topic is technical writing.

In October, all managers also participated in an in-house leadership training session on knowledge transfer and succession planning. Continuously developing our staff has become increasingly important as our work becomes more complex, our workforce ages, and new staff are joining the Water Board. At the session, managers learned about steps to take to improve our knowledge transfer and succession planning. In preparation for the session, managers conducted an inventory of our current knowledge transfer processes and identified potential gaps in recording and passing on policies and procedures. These leadership sessions are self-directed and coordinated by Toxics Division Supervisor John Wolfenden with support from other managers.

Staff Presentations

Carrie Austin presented at the California Lake Management Society's annual conference on October 11. Carrie is the technical lead for the Statewide Mercury Control Program for Reservoirs, which is a joint program of the State and Regional Water Boards. Her presentation addressed comments from and the Water Board's responses to scientific peer review of the reservoir mercury program. Information on this program is available here.

On October 18, Celina Hernandez hosted an overseas group of scientists and engineers to discuss an innovative cleanup technology for volatile organic compounds (VOCs). The group was from Takenaka Company, one of the largest construction firms in Japan. They presented a new in-situ enhanced bioremediation technology that utilizes waste heat from nearby office buildings to increase the effectiveness of the treatment process. Groundwater is withdrawn from the downgradient end of the contamination plume, heated to 30-40°C (86-104°F), then reinjected at the upgradient end of the plume. The extra heat increases the rate at which VOCs desorb from soil particles and the rate at which subsurface bacteria can break down the VOCs to non-toxic byproducts. The process has the added benefit of saving energy for the office buildings, by reducing the need for air conditioning. The technology is currently being tested in Japan and, if successful, will be marketed in the U.S. and elsewhere. Several Board staff attended the session and provided feedback on how environmental agencies would regulate the new technology.

Enforcement Actions (Mary Boyd and Brian Thompson)

The following table shows the proposed enforcement actions since last month's report. In addition, enforcement actions are available on our website at:

http://www.waterboards.ca.gov/sanfranciscobay/public_notices/pending_enforcement.shtml

Proposed Settlements
The following are noticed for a 30-day public comment period. If no significant comment is received by the deadline, the Executive Officer will sign an order implementing the settlement.

Discharger	Violation(s)	Imposed Penalty	Comment Deadline
Montara Water and Sanitary District	12 unauthorized discharges of untreated sewage	$32,100	November 5, 2018
Tournesol Siteworks LLC	Failure to submit an annual report for the 2016/17 reporting year by July 15, 2017	$1,000	November 15, 2018
Lance Finkel and Mark Lutz – North Bay Steel Mill Supply Recycling Inc.	Failure to submit an annual report for the 2016/17 reporting year by July 15, 2017	$1,000	November 15, 2018

Robert Chrisp – Chrisp Co	Failure to submit an annual report for the 2016/17 reporting year by July 15, 2017	$1,000	November 15, 2018
Henkel Corps Aerospace Group	Failure to submit an annual report for the 2016/17 reporting year by July 15, 2017	$1,000	November 15, 2018
City of Oakland – Lake Chabot Golf Course Driving Range	Failure to submit an annual report for the 2016/17 reporting year by September 1, 2017	$1,000	November 15, 2018
Los Gatos Saratoga Joint Union HS District	Failure to submit an annual report for the 2016/17 reporting year by September 1, 2017	$1,000	November 15, 2018
Peninsula West LLC - Summerwind	Failure to submit an annual report for the 2016/17 reporting year by September 1, 2017	$1,000	November 15, 2018
Golden Shiloh LLC	Failure to submit an annual report for the 2016/17 reporting year by September 1, 2017	$1,000	November 15, 2018
JL Precision	Failure to submit an annual report for the 2016/17 reporting year by July 15, 2017	$1,000	November 28, 2018
Safety Kleen	Failure to submit an annual report for the 2016/17 reporting year by July 15, 2017	$1,000	November 28, 2018
Fremont State Center LLC	Failure to submit an annual report for the 2016/17 reporting year by September 1, 2017	$1,000	November 28, 2018

Settled Actions
On behalf of the Board, the Executive Officer approved the following:

Discharger	**Violation(s)**	**Imposed Penalty**	**Supplemental Environmental Project**
Livermore-Amador Valley Water Management Agency	Unauthorized discharge of 21.7 million gallons	$30,000	$15,000

401 Water Quality Certification Applications Received (Abigail Smith)

The table below lists those applications received for Clean Water Act section 401 water quality certification from September 12 through October 5, 2018. A check mark in the right-hand column indicates a project with work that may be in BCDC jurisdiction.

Project Name	City/Location	County	May have BCDC Jurisdiction
2019 Channel Bank Repair Projects	Dublin	Alameda	
Zeiss Springtown Mitigation	Livermore		
7196 Saroni Drive Bank Stabilization	Oakland		
Blessing Drive Residential Development	Pleasanton		
Maintenance of Five Bridges	Pleasanton		
Marsh Drive Bridge Borings Installation	Concord	Contra Costa	
Alhambra Creek Bank Stabilization	Martinez		
Parr Boulevard Development	Richmond		
Marina Plaza 2330 Marinship - Pile Repair	Sausalito	Marin	✓
108 Brookside, Angwin – Culvert and Storm Damage Repair	Angwin	Napa	
Ravenswood-Cooley Landing - Recontouring Project	East Palo Alto	San Mateo	✓
Levee Protection – Planning and Improvement	Foster City		✓
Bayfront Canal and Atherton Channel - Flood Management and Restoration	Menlo Park		✓
Bear Creek Public Access Project	Los Gatos	Santa Clara	
Mud Lake Improvement Project	Los Gatos		
Thompson Creek – Gas Line Exposure Mitigation	San Jose		
Stevens Creek Fish Counter Project	Sunnyvale		
Brighton Village Residential Development	Fairfield	Solano	
US 101 - Marin-Sonoma Narrows – High Occupancy Vehicle Widening	Petaluma	Sonoma	