

# Monthly Operating Report

## Richmond WWTP and Collection System

### *February, 2017*

## Executive Summary

### Wastewater Treatment Plant

- There were two NPDES permit violations during the month each involving small amounts of chlorine present in the combined treatment plants effluent. Both events occurred during stormy weather and periods of high plant flows. On the morning of February 7<sup>th</sup>, incoming plant PG&E power was interrupted. At the end of the disruption, the emergency generator failed to transfer automatically back to utility power. For a period of time during the generator failure, the plant was without power. Later that evening, plant power was shut down intentionally for a contractor to affect repairs on the emergency generator. During that shutdown, an automatic valve on the emergency SBS (used to remove chlorine) supply failed to open and feed chemical. Consequently, chlorine was measured in the effluent for several minutes peaking at .13 mg/l.
- At 0642 the following morning (February 18), .31 mg/l of chlorine was detected and in this instance the chemical feed automation was determined to have reduced the SBS feed to a very low feed rate. The investigation indicates that several minutes before chlorine was detected, one of the SBS feed pumps was turned off by staff. Several additional changes were made to the SBS feed system in the intervening 15 minutes before adequate SBS delivery was reestablished. The details surrounding this incident are being investigated further to determine if additional corrective actions or discipline is warranted. An engineered rehabilitation/replacement project for the SBS storage and feed system is in the planning stages at this time.

A thorough evaluation of these events is ongoing and mitigating measures will be implemented. In regard to the electrical power issues, a full replacement of the treatment plant's electrical infrastructure is planned for completion in the next several months. The project includes upgrading the control aspects of the emergency generator in addition to replacing the ATS which is original and outdated equipment.

There was a total 10.47 inches of rainfall according to the rain gauge at the Richmond WWTP in February 2017. The largest single day amount was 2.42 inches on February 7. The monthly value represents about 39% of the annual average rainfall for the service area. January and February 2017 combined add up to about 82% of the average annual rainfall. By comparison, the County rain gauge at Richmond City Hall measured 10.15 inches.

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- There were 3 blending events in February as follows: (1) 2/7/17 from 0009 hours thru 2/10/17 at 1610 hours; (2) 2/17/17 at 1240 hours thru 2/18/17 at 1330 hours; (3) 2/20/17 at 0737 hours thru 2/22/17 at 1426 hours. The total volume blended was 88.88 million gallons and lasted for about 9 days. The treatment plant was staffed around the clock during these blending events. Resources expended on overtime for plant and collections staff (responding to SSOs and flooding), as well as chemical use during the period were extensive.
- The monthly acute aquatic bioassay test passed with 100% survival of the fathead minnows.
- There were no phoned in odor complaints or fence line H2S alerts in January.
- The monthly acute bioassay passed with 100% survival of the fathead minnows.
- Main switchgear for Plant Electrical Upgrade Project expected to arrive in March. Project expected to conclude in May.

<b>Table 1</b> Parameter	Monthly Performance Indicators	Limit/Target
<b>Treatment Plant Operations:</b>		
Influent Flow, daily average (MGD)	16.52	N/A
Effluent Flow, daily average (MGD)	18.52	N/A
Influent BOD <sub>5</sub> , avg. mg/L	178	N/A
Influent TSS, avg. mg/L	195	N/A
Effluent TSS, monthly average mg/L	14.4	30 or less
Effluent BOD, monthly average mg/L	12.7	30 or less
% BOD Removal	92.9	> 85
% TSS Removal	92.6	> 85
NPDES Effluent Limit Violations	2	0
Blending events	3	0
Total volume blended, MG	88.88	0
Odor complaints	0	0
Digested sludge pumped to drying beds, MG	1.59	N/A
Leachate received, GAL	333,016	N/A
Leachate received YTD, MG	.84	N/A

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## **Maintenance**

- Staff completed 164 Preventive maintenance work orders during the month; 61 at sewer lift stations, 49 for storm water pump stations, 93 corrective, and 61 preventative work orders at the treatment plant.
- The Cog Rake electrical panel upgrade is scheduled for installation in March
- New Ferry Point Lift Station pump replacement expected installation in March.
- Major repair of DAFT rake arm assembly
- Repair Digester – Dystor H2S meter
- Replaced main odor scrubber exhaust fan
- Responded to many lift station and plant maintenance issues during February storms. Supported operations staff responding to power failures
- On boarded 2 new maintenance mechanics (early March)

## **Collection Systems**

### **Sanitary Sewer System**

During the month of February there were twenty (20) sanitary sewer overflows (SSO's) all of which were capacity related.

There were a total of 16 sanitary sewer service calls in February 10 of which were related to private lateral issues. (See table 2).

### **Sanitary Sewer Point Repair Highlights:**

There were 2 sanitary sewer repair performed during the month of February. The 22<sup>nd</sup> St and Macdonald Ave sinkhole repair was completed. An SSO occurred on the beachfront below Western Dr. and staff determined that agitation from the heavy rains eroded the cement barrier on several manholes and pipe segments. The concrete cover repairs were completed at low tide. There are several additional storm water related point repairs scheduled to start in March weather permitting.

### **Storm Water**

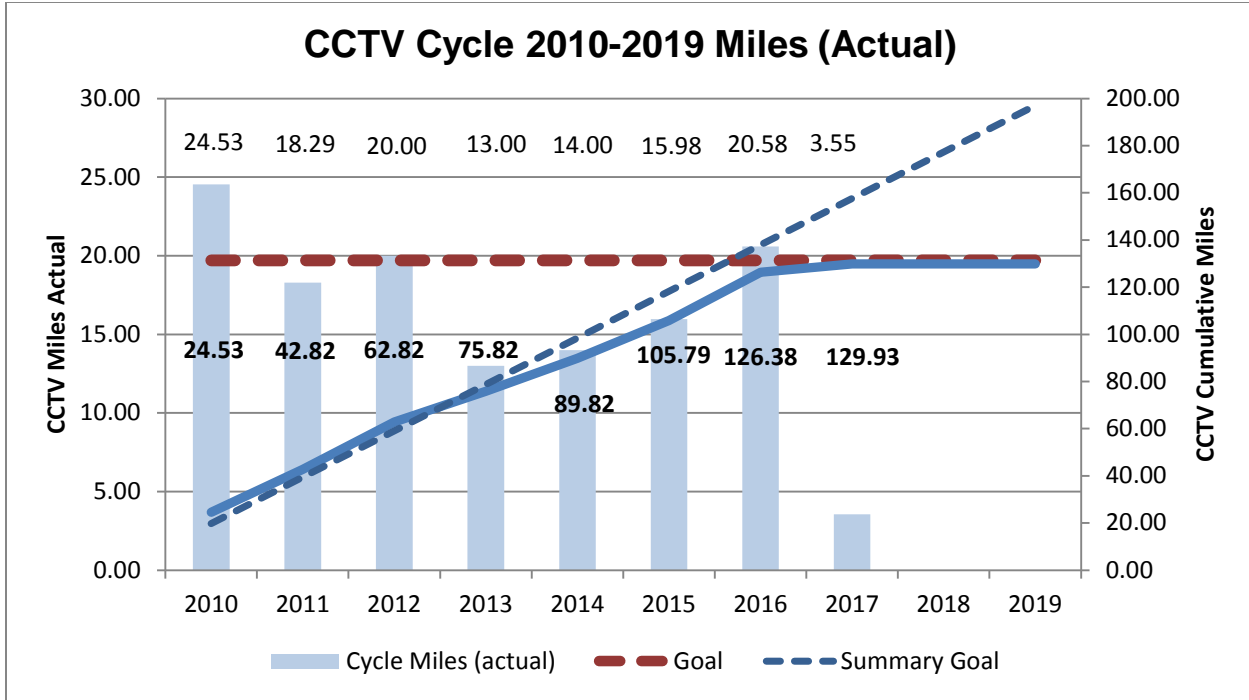
There were 37 storm-water related service calls in January (see table 3).

### **Storm Water Point Repair Highlights**

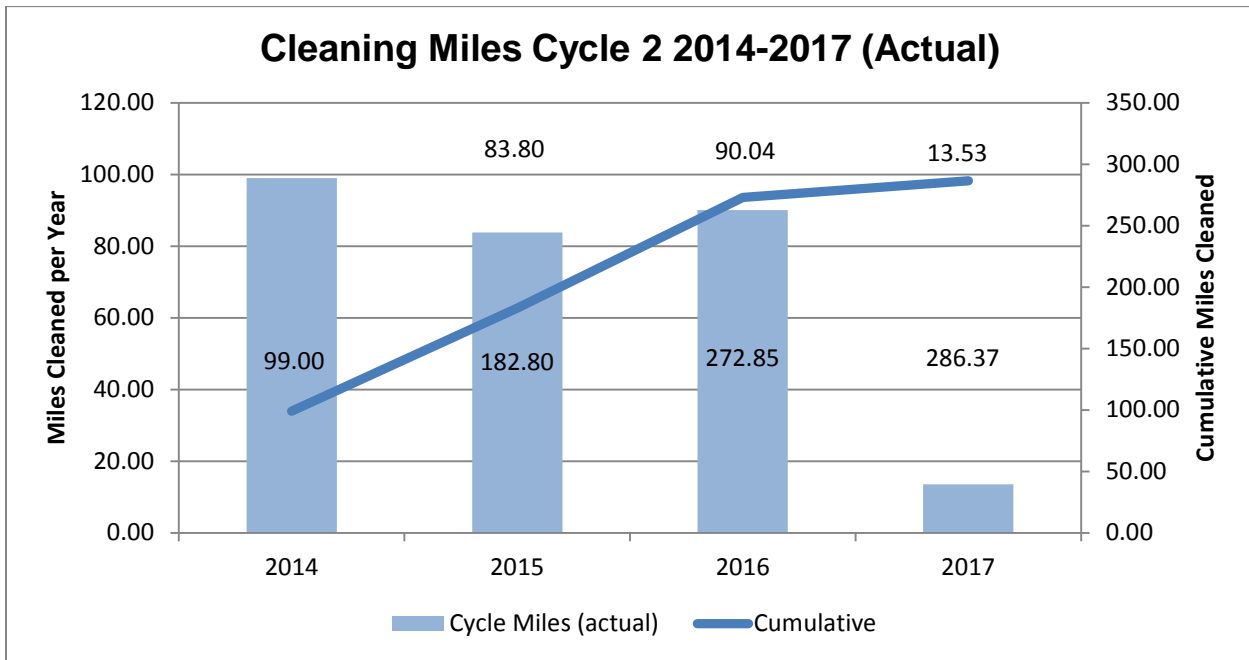
- Staff received numerous service calls regarding manhole cover popping on Amend Dr. by Carriage Hills during rain events causing a safety hazard on the street. Crews replaced the cover with a bolt down frame and vented cover.

**Collection Systems Monthly Performance Indicators**

Veolia is in the 8<sup>th</sup> year of a 10-year CCTV cycle. Cycle start date was January 1, 2010.



Veolia is in the 4<sup>th</sup> year of a 4-year sewer cleaning cycle. Cycle start date was January 1, 2014. Cumulative footage exceeds the goal to-date.



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**Sanitary System Performance Indicators**

**Table 2**

Performance Indicator	Monthly Actual	Target/Limit
Service Calls (Public Facilities/Assets)	27	N/A
Service Call Response Time (minutes)	<30	<30
Private Lateral Service Calls; Regular/After Hours	13/0	N/A
Regular/OT Hours Spent on Private Lateral Calls	0/0	N/A
Point Repairs Completed	2	N/A
Manhole Inspections	0	N/A
Manhole Repairs	0	N/A
CCTV (Closed Circuit TV) (ft.)	6,520	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	31,004	25,000
Cleaning QA/QC Events	0	4
SSOs for current month – Mainline	0	10/yr
Total Mainline SSO Volume (gallons)	0	0
Total Mainline SSO Volume Recovered (gallons)	0	100%
% Mainline SSO Volume Recovered	0	100%
# SSOs – Wet Weather (localized capacity issue)	19	0
# SSOs – Engineered Overflow Structure	1	0
Total SSO Volume from Engineered Overflow Structure (gallons)	625,286	N/A
SSOs – Private Laterals	0	N/A
General Maintenance	7	N/A
Sewer Lift Station PMs	61	N/A
Potential SSOs Eliminated due to SmartCover Monitors	0	N/A
SSOs – Mainline – Resulting in Property Damage	0	0
Total Wet Weather SSOs Year to Date	32	0
Total Dry Weather SSOs Year to Date	0	10 - Baykeeper
Number and Percentage of SSOs During 2017 with Discharge Reaching Storm Water Conveyance	32 of 32 - 100%	N/A

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**Storm Water System Performance Indicators**

**Table 3**

Performance Indicator	Monthly Actual	Target/Limit
Storm Point Repairs	1	N/A
Storm Manhole Repairs	0	N/A
Storm Manhole Inspections	0	N/A
Storm Service Calls	19	N/A
Storm CCTV (ft)	983	N/A
Storm GPS Surveys	0	N/A
Storm Pipe Cleaning (ft)	1,050	N/A
Storm General Maintenance Cleaning (Linear feet of V-Ditches, Culverts or Creeks)	5	N/A
Pump Stations Inlet/Outlet Channels Cleaned	0	N/A
Cash Basins/inlets Cleaned	4	N/A
Storm Vaults Cleaned/Inspected	0	N/A
GSRD (trash capture device) Cleaning/Inspections	1	4/year
Flap Gate/Duck Bill Inspections	1	4/year
Storm Water Pump Station PMs	49	N/A

**Capital Improvement Program**

Electrical Upgrade Project Construction

- Continued wire pull from SB-1 to Equipment
- Conduit from Sludge Transfer MCC to Equipment
- Conduit and wires to compressors at Sludge Control Building
- Install & inspect rebar at Main Switchgear Building slab
- Poured concrete slab at Main Switchgear building and two transformers.

13<sup>th</sup> Street Capacity Improvement Project Design

- This project replaces pipelines with NASSCO PACP Structural Grade 4 and 5 defects in the sewershed that flows to the 13th Street interceptor, and replaces and upsizes the 13th Street interceptor from Costa to Garvin.
- Bids were opened on October 20, 2016. The project has been on hold pending approval of SRF funding and will likely be re-bid when funding becomes available.

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23<sup>rd</sup> Street Sewer Replacement Project Design

- This project replaces the existing 21-inch diameter interceptor sewer and adjacent 6-inch diameter collector sewer between Ohio and Cutting Blvd.
- 100 percent design documents are complete and the project is ready to bid. Construction is anticipated for mid-2017.

Cutting, Carlson, and Hoffman Boulevard Project Designs

- This project replaces pipelines with NASSCO PACP Structural Grade 4 and 5 defects in the sewersheds that flows to Cutting Boulevard. Reduction of inflow and infiltration will reduce the need to upsize the Cutting Boulevard interceptor, thereby reducing overall cost and construction impact to the City.
- 90 percent design documents for the Hoffman Boulevard improvements have been completed and reviewed by Veolia and City staff. 90 percent design documents for Cutting/Carlson Boulevard are in progress and require completion of the remainder of CCTV inspections. Bidding for both projects will occur after the City receives approval for SRF funding.

WWTP Facility Plan Project

- Provided as-needed support for the CWSRF loan applications.
- Provided additional information requested by the State for the Environmental Package for the WWTP Critical Improvements Project and Sewer Project SRF Applications.

WWTP Critical Improvements Project Design

- Continued preparation of the 100% design deliverable.
- Provided as-needed support for the process sampling effort.