



September 30, 2020

(Via electronic mail)

To:  
City of Richmond  
Yader A. Bermudez  
Director of Public Works  
450 Civic Center Plaza  
City of Richmond, CA 94804

Subject: August-2020 Monthly Operations Report

From:  
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Municipal Water  
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Mr. Bermudez,

Section 5.11 of the 2002 CITY OF RICHMOND WASTEWATER TREATMENT FACILITY CAPITAL IMPROVEMENTS, OPERATIONS, MAINTENANCE AND MANAGEMENT AGREEMENT BY AND BETWEEN THE CITY OF RICHMOND, CALIFORNIA AND VEOLIA NORTH AMERICA (as amended, the "Agreement") states (in part), "*The Company shall submit to the City a monthly progress report detailing work accomplished and an updated schedule. The monthly progress report shall include a summary of work activities during the reporting month, a listing of upcoming work activities, a listing of submittals delivered during the reporting month, a listing of submittals scheduled for delivery the following month, a listing of any permit violations, and an updated schedule which reflects critical path activities. The updated schedule shall set forth major activities and reflect any change in the Company's estimated construction progress schedule from the schedule submitted the prior month.*"

Therefore, the following Monthly Operations Report is being submitted pursuant to Section 5.11 of the Agreement.

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- I. Summary of work activities during the reporting month August-2020
  - a. Safety
    - i. There were no OSHA Recordable Incidents or Lost Time Accidents
  - b. Capital Projects Management
    - i. Baykeeper Settlement Agreement Projects
      1. Year-2 Sewer Pipe Rehabilitation project – Risk Assessment Analysis (RAA) project
        - a. The City decided to stop construction work on this project and utilize O&M emergency pipe segment repairs to fulfill the remaining mileage required under the Baykeeper Order. All initial work authorized by the City under the 2019 RAA project was completed by June 30, 2020.
        - b. Status of project:
          - i. PCO #7 (segment repair at 23<sup>rd</sup> and Garvin) was approved by the City on June 29, 2020.
          - ii. PCO #34 (segment repair at Barrett/34<sup>th</sup> Street) was approved by the City on July 22, 2020.
          - iii. All work is complete; a Task Authorization (TA) was submitted to the City for Change Order 1 on 6/24/20; a second TA (for Change Order 2) for the above change order work is being prepared for the City's review.
      2. Capacity-related sewer projects
        - a. Cutting/Carlson & Hoffman
          - i. The project was substantially complete by the revised completion date of March 15, 2020 provided to Baykeeper.
          - ii. Updated CCTV indicated Plan Line Q required complete replacement and additional work on Plan Lines R&T; Line Q work was completed and work is commencing on Plan Lines R&T; Staff is awaiting completion and acceptance of final post-construction CCTV.
          - iii. CCTV work was completed on July 24, 2020; video files were delivered to Veolia for review.
          - iv. All work is complete; a Task Authorization (CO6) for the above change order work is being prepared for the City's review.
        - b. Macdonald & Virginia
          - i. By the end of August 2020, the Contractor had installed approximately 16,070 linear feet (13,230 lf Macdonald; 2,840 lf Virginia) of main pipe and laterals.
          - ii. The Project is on schedule and is anticipated to be complete by January or February 2021.

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## c. First Street Design

- i. V. W. Housen & Associates delivered its 100% design drawings of the First Street sewer relief in August. Veolia transmitted copies of the 100% submittal to the City for review.
  1. Pursuant to City direction, two pipe segments have been identified as problematic due to operational concerns that they could contribute to SSOs (First and Bissell);
  2. Bid documents for this segment project were delivered to Veolia in August; preliminary construction documents are anticipated to address the two pipe segments prior to the entire original project bidding and award.
  3. CCTV footage of the First and Bissell segment was delivered to the City in August.
  4. The City requested CCTV confirmation of all of the First Street pipelines, which is planned to be submitted in September.

## d. Bush & Hayes Sag

- i. The City authorized W.R. Forde to complete the work.
- ii. All work was completed on July 17, 2020.
- iii. A change order TA was submitted on June 24, 2020; City approval is still pending.

## ii. Manhole Rehabilitation Program

1. The FY19/20 Manhole Rehabilitation Project opened bids on January 30, 2020; the project was awarded to W.R. Forde.
2. A Task Authorization was prepared and submitted to the City in early March. The project was approved at the May 19, 2020 Council Meeting.
3. Veolia received the executed TA from the City on June 22, 2020.
4. Subcontracting was completed on July 16, 2020, and the Notice to Proceed was issued July 21, 2020 effective July 27, 2020.
5. On August 5, 2020, the Contractor was given a notification of suspension of work.
6. On August 28, 2020, the W.R. Forde notified Veolia that its listed subcontractor, Nor-Cal Pipeline, refused to enter into a contract with W.R. Forde and that W.R. Forde would like to substitute H&R Plumbing for Nor-Cal Pipeline.
7. All work is on hold at the direction of the City.

## iii. Wastewater Treatment Plant Projects

1. The bid documents for the Grit/Screening and Aeration Upgrade Projects (as part of the High Priority Project) continued to be reviewed for constructability. Three rounds of comments were submitted to Carollo (designer) by Veolia regarding project document preparation; Carollo responded to the constructability comments in late July, and the responses are under review by Veolia. Bid documents were also forwarded to the City's

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Public Works Department in late May 2020 for review; no comments have been received to date. Veolia submitted a Sole Source Material request on August 13, 2020 to use current SCADA subcontractor Calcon Systems for the SCADA integration on this upcoming Plant project; that request was approved on August 20, 2020.

2. The Cogen Project Phase I was ongoing in August, with remote meetings continuing due to the COVID-19 constraints.
  - a. A draft Basis of Design Report (BODR) was submitted to the City in early June; the City provided initial comments, and Veolia continued its technical review in July.
  - b. The Design Build Entity (DBE, C. Overaa Co.) and Veolia continued review of the subcontract in August.
  - c. Veolia provided the City with their review comments on July 14, 2020. Overaa (DBE) submitted draft BODR responses to Veolia's comments on July 27, 2020; those responses are under review. Veolia transmitted comments to Overaa the week of August 10, 2020.
3. The SCADA (Supervisory Control and Data Acquisition) Phase I Project, which replaces the existing SCADA system and maintains the upgrade, was ongoing in July. The Phase I portion is expected to be complete by December 2021.
  - a. A No Cost Change Order #1 TA was submitted to the City in June to switch out Task 5 (Remote telemetry network audit for Plant Ethernet audit); that TA was still pending with the City as of August 31, 2020.
  - b. Calcon (Subcontractor) continued server integration into the SCADA system, screen construction, rollout of the ignition system usage, functionality test, reports, charts, etc.
  - c. Calcon submitted another no cost proposed change to reallocate task items within the approved authority; Veolia submitted No Cost Change Order #2 TA on August 3, 2020, and that TA was still pending with the City as of August 31.
4. Seismic Evaluation – The City selected ZFA Structural Engineers. A kick off meeting was held on June 30, 2020. July was spent gathering documentation for the project (i.e., past Plant project documentation, record drawings, etc.) ZFA continued to present the facility assessment during August and submitted a Basis of Design Report (BODR) on August 26, 2020.
5. Sludge Thickener Project (Design/Build) – RFQs were received on January 10, 2020, and evaluated on January 21, 2020.
  - a. A final RFP was submitted to the City in June with the updated sample design-build contract.
  - b. The City provided comments on June 24, 2020; Veolia submitted a revised RFP in August 2020 and received comments back in August.

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- iv. Storm Water Projects
  - 1. Trash Capture Device –
    - a. A new Trash Capture Device project was decided on for a Bayview location. This item was initially presented to the City Council for review and approved in May.
    - b. A Task Authorization (TA) for the new installation was submitted to the City by Veolia on July 14, 2020, and it was approved by the City Council on July 28, 2020. The fully executed TA was returned to Veolia by July 30, 2020.
    - c. A site visit with all participating entities (City, Veolia, designer, equipment manufacturer and Construction contractor) was completed on July 28, 2020
    - d. Targeted date for draft design is the week of 8/17 and final design is end of August; Targeted start of construction is late November/mid December 2020.
    - e. A project topographical survey, which is a critical path item, was completed on August 14, 2020.
- v. Other Projects
  - 1. Sewer Master Plan Update
    - a. The Final System Evaluation and Capacity Assurance Plan (SECAP) was submitted to the City on November 15, 2019.
    - b. The City is planning to have City Council adopt report once Baykeeper comments have been submitted.
    - c. A meeting to discuss Baykeeper comments with Nicole Granquist of Downey Brand was held on July 27, 2020. No update for August.
- c. Collections Systems and Wastewater Treatment Plant Operations and Maintenance
  - i. Collection Systems Operations and Maintenance
    - 1. Baykeeper Settlement Agreement Projects
      - a. The 2020 RAA was re-submitted to Baykeeper on 5/28/2020
        - i. Inclusive to Veolia's submission of the 2020 RAA to the City of Richmond, the City of Richmond, in its submission of the 2020 RAA to Baykeeper, requested relief for one year in the requirement to repair an average of 2-miles/year of pipe segments having PACP Grade-5/4 defects such that the funds required for this work could be used instead to address the remaining inaccessible pipe segments reporting in the 2020 RAA as requiring repairs so that the CCTV condition assessment of the entire wastewater collection system can be completed. At present, Veolia-CPM is completing the preparations for a project to address the reported 2020 RAA inaccessible pipe segments; though it has not been determined at this time if whether or not the entire list of inaccessible pipe segments are to be repaired under a single project

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2. 4-year-out wastewater system cleaning progress
  - a. Actual miles of system cleaned in 2020 = 105.23
    - i. 2020 miles planned for cleaning = 50.8
    - ii. 2004 Service Agreement annual cleaning miles objective = 49.8
    - iii. 2020 hotspot cleanings (altered by the BKSA) and pre-CCTV cleaning = 54.43
3. 10-year-out wastewater system CCTV condition assessment progress
  - a. Actual miles of system CCTVd in 2020 = 38.11
    - i. 2020 miles planned for cleaning = 19.7
    - ii. 2004 Service Agreement annual CCTV miles objective = 19.7
    - iii. Grade 4 and 5 annual condition assessments (altered by BKSA) and 70 % or less = 16.91
    - iv. Post Construction CCTV = 1.5
  - b. Total gravity pipe segments in system reporting in InfoNet = 3650
    - i. Pipe segments with CCTV < 10-years = 3584
    - ii. Pipe segments with CCTV > 10-years = 66
      1. (46) pipe segments CCTV pending
        - a. (41) Pipe segments have been attempted but are currently inaccessible due to various reasons. (Cars parked on manholes, private property, etc.)
        - b. 5 Segments scheduled but not completed as of Aug 30.
      2. (0) pipe segments needing point repairs before CCTV can be completed
      3. (20) are Inaccessible due to submerged pipes - Keller Beach
      4. Total numbers varies in this category from last month due to changed status from active to abandoned
4. Sanitary Sewer Overflows
  - a. Actual SSO's in August = 1
  - b. Actual SSO's YTD, 2020 = 6
    - i. Permissible by Baykeeper Settlement Agreement = 24 for 2020
5. Customer Service Calls = 10
6. Emergency & Miscellaneous Repairs
  - a. (5) wastewater point repairs
  - b. (0) manhole cover repair
  - c. (0) storm water point repairs
7. Storm water collection system progress
  - a. Customer service calls = 2
  - b. City service calls = 0
  - c. Catch basins cleaned = 2
  - d. Trash capture devices cleaned = 0
  - e. Pipe segment cleaned = 0

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f. V-ditched cleaned = 0-Ft

ii. Wastewater Treatment Plant Operations

1. Permit Violations – Yes, See explanation at V below.

a. Average daily flow = 4.65 MGD

b. Peak daily flow = 10.72 MGD

c. Effluent BOD/TSS mg/L = 32.3/31.4

i. Permit Limits for Effluent BOD/TSS mg/L = 30/30

d. Plant Odor complaints = 3

These were reported from BAAQMD; all were anonymous and by email.

2. Non-standard operating conditions

a. Heavy influent loading with higher grease & oils has continued from the Plant upset in July. Outside lab results came back confirming the high FOG and other results showed higher than normal results in Phenol and Zinc. We are continuing to battle the heavy foam buildup in the Aeration basins.

b. DAF # 1 went out of service. Had to make major piping modifications to have the ability to pump the waste sludge back to the head of the plant. Made emergency piping modifications to have the ability to pump Polymer & Ferric to the Primary Basins from small chemical totes. Brought in contractor, Synagro, to assess equipment and piping needed for the portable gravity belt thickener. Worked with contractors to connect the temporary emergency piping needed for the Gravity Belt Thickener to the underground DAF sludge piping. Made piping modifications to the DAF sludge pumps in order for us to pump the sludge from the gravity belt thickener to the Digesters.

3. Regulatory agency reporting – All standard monthly reports submitted in a timely manner with no exceptions reported back from the regulator

iii. Collection System Pump Station and Wastewater Treatment Plant Equipment/Facility Maintenance

1. Total preventive maintenance work orders completed = 162

2. Total corrective maintenance work orders completed = 23

3. All wastewater treatment plant mission-critical and redundant systems and equipment were observed and/or maintained and/or repaired as scheduled and/or required

4. All Storm and wastewater collection system pump stations were routinely checked and maintained as scheduled

a. Storm water pumps stations monitored = 8

b. Wastewater pump stations monitored = 15

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## 5. Special projects

- a. Install new 8" bypass pipeline to divert RAS inflow to the Secondary Process Aeration Channel
- b. Install new sludge skimmer pump at the confluent channel
- c. Upgrade existing emergency SBS tote injector with a more reliable Protek actuator unit
- d. Replace the influent Flow shark metering unit

## II. List of upcoming activities

- a. Continue discussions with City staff regarding prioritization and procurement delivery method for various maintenance and construction projects noted previously
- b. Continue planned CPM and O&M activities previously described in section I.b and I.c, respectively, above

## III. List of submittals delivered during the month

### a. CPM

- i. On-Call Engineering Services on City Development Projects TA – sent 3/27/20 (in legal review).
- ii. SCADA Project No Cost Change Order #1 TA – submitted to the City on June 22, 2020.
- iii. 2019-20 Sewer Segment Rehab Project, RAA Year Two Change Order 1 TA – submitted June 24, 2020.
- iv. SCADA Project No Cost Change Order #2 TA – submitted on 8/3/20
- v. Ferry Point Force Main Assessment TA – Dornan Drive – submitted on 8/3/20
- vi. Marina Bay Parkway FM Extension Project TA – submitted on 8/12/20

### b. O&M

- i. RAA/SECAP/Master Plan TA – Submitted March 27<sup>th</sup>, COR responded It is with the Attorney's
- ii. Boiler Burner #2 TA – Submitted May 20<sup>th</sup>, COR responded June 3<sup>rd</sup>, It is with the Attorney's
- iii. NASSCO upgrade from 6.0 to 7 TA – Submitted May 19<sup>th</sup>
- iv. Collection Camera Cable Replacement TA – Submitted on 5/22, COR requested detail on 7/15, we provided on 7/21
- v. Collection Gas Detectors TA – Submitted 6/23/2020, COR asked further detail on 6/24, we provided requested detail on 6/26, COR asked further detail on 7/21, we provided on 8/10
- vi. Portable Sludge Thickener TA – Submitted 8/25/20 – Received written approval by email from Yader on 8/25/20 to order the unit from Synagro while the TA is processed

## IV. List of submittal scheduled for the following month

- a. To be determined

## V. Listing of permit violations – Starting the week of July 26 – August 1

- a. The Richmond Water Pollution Control Plant experienced high levels of FOG entering and affecting the plant from the collections system. The excessive loading caused a destabilization of the ideal MLSS microbe community and resulted in poor settling. This destabilization produced higher than normal TSS/BOD at our EFF-002 sample site as seen in the table below.

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Lab Results for August 2020 @ EFF-002

	BOD (mg/L)	TSS (mg/L)
Week of 7/26 - 8/1	27.2	42.57
Week of 8/2 - 8/8	31.67	37.57
Week of 8/9 - 8/15	43.83	<b>49.71</b>
Week of 8/16 - 8/22	37.14	26.57
Week of 8/23 - 8/29	22.14	17.86
Week of 8/30 - 9/5	16.0	16.28
August 2020 monthly average	<b>32.3</b>	<b>31.39</b>

- b. On August 8, 2020, in addition to providing notice about the challenging influent loadings at the plant, Michael Beck, Veolia's Chief Plant Operator, notified the San Francisco Bay Regional Water Quality Board that the one remaining functional dissolved air flotation thickener (DAF) at the Richmond WPCP suffered a critical failure of the center drive/recirculation pipe on August 8, 2020 causing the process unit to be decommissioned pending further analysis.
- c. On August 8, 2020, due to the DAF failure and the age of the facility and the limitations of operational flexibility with the equipment available, Operations staff began diverting WAS (waste activated sludge) to the headworks to be settled in the primary clarifiers.
- d. Starting on August 8, 2020, as soon as piping modifications could be set up, ferric chloride was applied to the headworks in an attempt to mitigate any additional odors and help precipitate the additional solids. Operations staff then ordered polymer and began applying it to the primaries upon delivery beginning August 17, 2020 to assist in enhancing the primary removal of solids.
- e. During the Week of August 9 – August 15, with not enough time to mitigate the impacts of the DAF failure in the middle of the previous upset from FOG loading, the plant experienced a weekly violation of TSS @ 49.71 mg/L. The BOD, although similarly affected, did not exceed the weekly allowed limit. With additional efforts and time, the plant has been adjusted to achieve weekly permit limit levels since the TSS exceedance, but the damage to the monthly average values proved insurmountable and resulted in an exceedance of the targeted monthly average of both TSS (31.39 mg/L) and BOD (32.3 mg/L).

## VI. Corrective Actions:

- a. The operations staff at the plant consulted with Carollo's Engineering / Water Quality experts as well as one of Veolia's technical experts, Kumar Upendrakumar, P.E., BCEE, Director of Engineering / Technical & Performance, to determine options for corrective action and the most effective solutions. Samples of MLSS and the resulting foam were also sent to AquaFix for technical analysis. Based on the data from the microscopic observations in the lab report and recommendations from both technical groups, Veolia

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determined that Nocardia was the dominant filament present following the upset. As a result, Veolia operations chlorinated the RAS and wasted heavily during a 48-hour period to remove the dead organic material from the system. These actions stabilized the system, and continual chlorination and the addition of a nutrient defoamer to the Aeration system allowed the proper microbial community to dominate. The application of ferric chloride, polymer, and degreaser to the primary clarifiers has contributed to a stabilization of the system in lieu of the DAF system.

- b. Veolia filed reports with the City of Richmond in regard to the high FOG loading. The City's pretreatment program coordinator did increase monitoring and inspections of businesses thought to be contributing to the loading. In partnership with the City, Veolia placed portable samplers around the collection system and at the plant to investigate any possible discharge events. Results were inconclusive.
- c. Upon draining the DAF unit, Veolia maintenance staff conducted an assessment of the DAF unit and was able to identify that the main shaft for the unit had completely corroded and had sheared in half. Because of the age of the unit and unavailability of parts, the unit cannot be repaired until custom pieces can be fabricated. The lead time of the parts is at least 14 -16 weeks before they can be delivered and installed, with anticipated delivery in mid-December. The new permanent sludge thickener for the Richmond plant is in the final design stage and should go out to bid in the next few months. Estimated installation and completion is 16 - 30 months, depending upon approval and notice to proceed from the City of Richmond. With no other options and no way to shorten the delivery of the permanent solution, Veolia has moved forward with securing the use of a temporary portable sludge thickener until the repairs are in place. The thickening unit is currently onsite and functioning.

### VII. Updated critical path schedule

- a. There are no current projects operating under a critical path method of delivery

### VIII. Other Project Discussion

- a. CPM
  - i. None
- b. O&M
  - i. Provided Veolia's rolling stock audit review and recommendations to the City on August 24, 2020.