

City of Baltimore
Department of Public Works

Consent Decree
Quarterly Report

Reporting Period:
November 29, 2023, to February 15, 2024

Wastewater Facilities Consent Decree
Case No. 24-C-22-000386



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1.0 INTRODUCTION

This Calendar Quarterly Report is submitted pursuant Paragraph 170 of the Consent Decree (Case No. 24-C-22-000386).

Since summer 2021, when the Baltimore City (the City) Department of Public Works (DPW) was notified by the Maryland Department of the Environment (MDE) of alleged permit violations at the Back River and Patapsco Wastewater Treatment Plants, DPW has implemented significant improvements at each plant resulting in the Back River plant meeting permit compliance with effluent limitations since June of 2022 (with the exception of a de minimis phosphorous excursion in April 2023 and a minor chlorine excursion in January 2024), and the Patapsco plant meeting its daily, weekly, and monthly effluent limitations since September 2022 and all effluent limits since January 2023.

Since 2022, DPW has made the following improvements:

- Created the Environmental Regulatory Compliance and Safety (ERCS) division – a team of multi-disciplined environmental compliance professionals who troubleshoot and execute timely compliance actions.
- Updated human resource hiring practices to improve hiring and recruiting new staff.
- Modernized and executed preventative maintenance programs, including the repair and rehabilitation of critical assets at both plants.
- Returned the solids processing operations at both plants to full service and removed the excess solids inventory.

The City continues to make improvements to operations at the Back River and Patapsco Wastewater Treatment Plants and has implemented or continued a number of corrective actions during the reporting period, which are summarized in this document and cumulatively in the attachment.

2.0 WORK TO BE PERFORMED – CURRENT QUARTER PROGRESS SUMMARY

A summary of Consent Decree (CD) work completed, or scheduled to be completed, during this reporting quarter is provided in the table below. Cumulative progress is included in Appendix 1.

Table 1: Progress Tracking Summary

| CD Paragraph Reference – Treatment Plant ¹ | Activity | CD Deadline | Actual Completion Date | Compliance Status |
|---|--|-------------|--|-------------------|
| 133(a)-BR | Clean and complete repairs on at least 8 PSTs to ensure they are fully functional and capable to operate as designed. | 12/15/2023 | Time extension request submitted on 12/20/23. Requested deadline: 3/31/2024. | 88% Complete |
| 135(a)-BR | Submit for review and Department approval the standard operating procedure (SOP) for removal of vegetative growth in the final clarifiers. | 1/15/2024 | 12/15/2023 | Complete |
| 138-BR | Repair and install one of the three non-operational Dissolved Air Flotation (DAF) systems and thickened sludge pumps. | 12/31/2023 | 12/5/2023 | Complete |
| 140-BR | Create and submit a Centrifuge Maintenance Plan to the Plaintiffs for review and the Department’s approval. | 12/15/2023 | 12/15/2023 | Complete |
| 141-BR | Complete repairs and installation of Centrifuge #4 to operate as designed. | 12/31/2023 | Time extension request submitted on 12/20/23 and 2/14/24. Requested deadline: 4/30/24. | Ongoing |
| 142-BR | Submit [staffing plan]... | 12/31/2023 | 12/22/2023 | Complete |
| 165-PAT | Submit [staffing plan]... | 12/31/2023 | 12/22/2023 | Complete |
| 172-BR | Install a sign at the pier adjacent to outfall 001 that notifies the public of the presence of the submerged treatment effluent pipe. | 12/15/2023 | 12/11/2023 | Complete |

| CD Paragraph Reference - Treatment Plant ¹ | Activity | CD Deadline | Actual Completion Date | Compliance Status |
|--|--|--------------------|-------------------------------|--------------------------|
| 172-PAT | Apply for and diligently pursue all permits, licenses, or other authorizations necessary for the installation of a sign at the location of the submerged outfall pipe that notifies the public of the presence of the submerged wastewater treatment effluent pipe. | 2/13/2024 | 2/13/2024 | Complete |
| 173-BR | Simultaneously with the installation of the signs required under Paragraph 172, Baltimore City shall install a red light next to, or on top of each sign that indicates when the plant experiences any by-pass as defined by the Discharge Permits. | 12/15/2023 | 12/11/2023 | Complete |
| 174-TEA | Baltimore City shall consult with the Plaintiffs and retain or engage a qualified, independent third-party engineer, to conduct an update to the comprehensive assessment of the Back River and Patapsco WWTPs prepared by Greeley and Hansen ("G&H") in June 2022, and to submit a report, signed and sealed by the licensed professional engineer, summarizing the findings simultaneously and directly to all Parties within 90 days of the Effective Date. | 2/13/2024 | 2/13/2024 | Complete |

¹ BR = Back River WWTP; PAT = Patapsco WWTP

3.0 STIPULATED PENALTIES

The potential stipulated penalties are shown below.

3.1 CURRENT QUARTER AND CUMULATIVE

Table 2: Potential Stipulated Penalties Due to Project Delays

| Back River WWTP | | | | |
|--------------------------|--------------------|------------------------------|---|--|
| CD Paragraph Ref. | CD Deadline | Requested CD Deadline | Date of Time Extension Request Submittal | Potential Stipulated Penalty Amount |
| 133a | 1/1/2024 | 3/31/2024 | 12/20/2023 | \$70,000 |
| 141 | 12/31/2023 | 3/1/2024 | 12/20/2023 | \$72,500 |
| Total | | | | \$142,500 |
| Patapsco WWTP | | | | |
| None | N/A | N/A | N/A | N/A |

Table 3: Potential Stipulated Penalties Due to Excursion/Discharge (Paragraphs 189 and 192)

| Back River WWTP | | | |
|--------------------------------------|--------------------------|---|-----------------|
| Date | Description | Date of Request to Waive Penalty Submittal | Amount |
| 12/1/2023 | Flushing Water Spill | N/A | \$10,000 |
| 12/18/2023 | Sanitary Sewer Overflow | 2/5/2024 | \$10,000 |
| 1/5/2024 | Flushing Water Spill | 2/5/2024 | \$10,000 |
| 1/9/2024 | Sanitary Sewer Overflow | 2/5/2024 | \$10,000 |
| 1/18/2024 | Chlorine - 0.23-0.9 mg/L | N/A | \$100 |
| 1/22/2024 | Flushing Water Spill | 2/5/2024 | \$10,000 |
| 2/2/2024 | Sanitary Sewer Overflow | N/A | \$10,000 |
| Back River Total | | | \$60,100 |
| Patapsco WWTP | | | |
| 12/18/2023 | Sanitary Sewer Overflow | 2/5/2024 | \$10,000 |
| 1/9/2024 | Sanitary Sewer Overflow | 2/5/2024 | \$10,000 |
| 1/9/2024 | Sanitary Sewer Overflow | 2/5/2024 | \$10,000 |
| Patapsco Total | | | \$30,000 |
| Back River and Patapsco Total | | | \$90,100 |

3.2 FORCE MAJEURE REQUESTS

Par. 133(a) – PST Repairs:

On December 20, 2023, the City submitted to MDE and Blue Water Baltimore (BWB) a time extension request to complete repairs of two primary settling tanks (PSTs) at the Back River Wastewater Treatment Plant, which have a Consent Decree deadline of January 1, 2024. The completion delay is due to project delays by Maryland Environmental Services, resulting PST activation/deactivation sequencing, and unforeseen additional repair work for RSPS A and miscellaneous damaged concrete. The requested deadline is March 31, 2024.

Par. 141 – Centrifuge 4 Repair:

On December 20, 2023, and February 14, 2024, the City submitted to MDE and BWB time extension requests to complete installation of Centrifuge 4 at Back River Wastewater Treatment Plant. The delay is due to more extensive repair work than originally anticipated for Centrifuge 4. Additionally, the centrifuge was returned to the plant, and some of the parts were still not in a condition to be installed and will require additional refurbishment and repair.

On February 5, 2024, the City submitted to MDE and BWB a request to waive stipulated penalties associated with the SSOs listed below:

Table 4: Par. 192 - Sanitary Sewer Overflows (SSOs):

| Date of Overflow | Treatment Plant Location | Overflow Volume (gallons) |
|------------------|--------------------------------|---------------------------|
| 12/18/2023 | Back River | 1,000 |
| 12/18/2023 | Patapsco | 6,700 |
| 1/9/2024 | Back River | 750,000 |
| 1/9/2024 | Patapsco | 5,000 |
| 1/9/2024 | Patapsco (Southwest Diversion) | 44,000 |

According to the City’s post-SSO analyses, the overflows listed above were caused by above average seasonal rainfall and excessive wet weather flows from Baltimore County which resulted in both plants receiving consistent flows above their design capacity.

On February 5, 2024, the City submitted to MDE and BWB a request to waive the stipulated penalties associated with the sewer discharges listed below. The City requested force majeure relief for the below flushing water spills because they were caused by unforeseen circumstances, and there was no way to prevent them through due diligence. The parts that malfunctioned are used on a daily basis and would have been addressed had there been any indication of failure prior to the spills in question. As soon as the equipment failures were noticed, plant staff took immediate action to mitigate the spills and repair the failed equipment.

Table 5: Par. 192 - Flushing water spills

| Date of Discharge | Treatment Plant Location | Discharge Volume (gallons) | Cause of Discharge |
|--------------------------|---------------------------------|-----------------------------------|--|
| 1/5/2023 | Back River (Synagro facility) | 2,000 | Faulty influent flushing water control valve |
| 1/22/2024 | Back River | 29,000 | Broken flushing water line |

4.0 PROJECT EXPENDITURES FOR QUARTER

The quarterly report includes all funds expended to comply with the CD and prior to entering the CD and funds encumbered to meet future CD deadlines. As projects progress, the City will provide more granular information on project expenditures.

4.1 CURRENT EXPENDITURES

Expenditures this quarter include:

Paragraphs 143&166: Support with O&M, SOP, Safety, - \$2.1M

Paragraphs 133(a) & (b): \$3M

Paragraph 139: \$1.8M

Paragraph 141: \$250k

Paragraph 142: \$3.5M

Paragraph 152: \$1.8M

Paragraph 165: \$550k

Paragraph 174: \$75k

4.2 CUMULATIVE EXPENDITURES

Cumulative investments include:

Back River WWTP = \$121.9M

Patapsco WWTP = \$408.5M

Other expenditures the City has incurred in support of both WWTPs include:

Maryland Environmental Service = \$7M

Staff Augmentation = \$23M

Maintenance support over 5 years = \$50M

Program Management Team to support compliance = \$9.1M

Plant Operations Efforts = \$12M

5.0 ACCOUNTING OF MAINTENANCE INADEQUACIES

DPW completes daily maintenance work at both Back River and Patapsco. There were no maintenance items that resulted in a plant effluent violation.

6.0 STAFFING

The City submitted a Staffing Report and Plan on December 22, 2023, in compliance with paragraphs 142 and 165. A summary of recommendations and steps taken by the City to implement those recommendations was included in the Staffing Report.

The tables below summarize the City's current staffing levels.

Table 6: Number of Existing and Recommended FTE Staff at BRWWTP

| Staff Description | Operations[†] | Maintenance | Safety[‡] |
|----------------------------|-------------------------------|--------------------|---------------------------|
| Total Current Staff | 127 | 103 | 1 |
| Vacancies | 26 | 21 | 0 |
| Recommended Staffing Level | 126 | 103 | 1 |

[†]Operations staff are responsible for process testing.

[‡]Safety Representatives are also Operators.

Table 7: Number of Existing and Recommended FTE Staff at PWWTP

| Staff Description | Operations[†] | Maintenance | Safety[‡] |
|----------------------------|-------------------------------|--------------------|---------------------------|
| Total Current Staff | 83 | 66 | 1 |
| Vacancies | 11 | 12 | 0 |
| Recommended Staffing Level | 83 | 66 | 1 |

[†]Operations staff are responsible for process testing.

[‡]Safety Representatives are also Operators.

Attachment 1

Overall Progress Summary

Overall progress is summarized in the table below.

Overall Progress Tracking Summary

| Consent Decree Paragraph Reference – Treatment Plant ¹ | Activity | Consent Decree Deadline | Actual Completion Date | Compliance Status |
|---|--|----------------------------|---|-------------------|
| 132-BR | Replace H ₂ S sensors | 12/15/2023 | 5/16/2023 | Complete |
| 133(a)-BR | Clean and complete repairs on at least 8 PSTs to ensure they are fully functional and capable to operate as designed | 1/1/2024 | FM Letter Sent 12/20/23 Requested extension: 3/31/24 | 88% Complete |
| 133(b)-BR | Clean and complete repairs to all 11 PSTs to ensure they are fully functional and available for use | 12/31/2025 | | 63% Complete |
| 134-BR | Baltimore City to have and maintain an adequate supply of Dissolved Oxygen (“D.O”) probes | 12/1/2023 | 11/7/2023 | Complete |
| 135-BR | Baltimore City shall maintain Activated Sludge Plants No. 2 & 3 as well as their associated clarifiers. | Ongoing | | Compliant |
| 135(a)-BR | Submit for review and Department approval the standard operating procedure (SOP) for removal of vegetative growth in the final clarifiers. | 1/15/2024 | 12/15/2023 | Complete |
| 135(b)-BR | Implement vegetative growth plan | Upon approval of 135(a)-BR | | Awaiting Approval |
| 135(c)-BR | Maintain average sludge blanket depth of 2 to 4 feet in final clarifiers | Ongoing | | Compliant |

| Consent Decree Paragraph Reference – Treatment Plant ¹ | Activity | Consent Decree Deadline | Actual Completion Date | Compliance Status |
|--|--|--|--|--------------------------|
| 135(d)-BR | Maintain manual operations until Activated Sludge PLCs are updated and set up for automatic operation | Ongoing | | Complaint |
| 136-BR | Complete evaluation of sand filters. Within 10 days of sand filter evaluation, request approval for change of use of the approved sand filter, OR submit plan and schedule for implementation of sand filter improvements (Sand Filter Improvement Plan). Immediately upon approval City shall implement the approved Sand Filter Improvement Plan | 4/30/2024 and 5/10/2024 | | 20% Complete |
| 137-BR | Repair all Gravity Belt Thickeners (GBTs) to operate as designed | 6/30/2024 | | 50% Complete |
| 138-BR | Repair and install one of the three non-operational Dissolved Air Flotation (DAF) systems and thickened sludge pumps | 12/31/2023 | 12/5/2023 | Complete |
| 139-BR | Issue notice to proceed with contract for rehab of the egg-shaped digesters. Complete rehabilitation of egg-shaped digesters. | 8/16/2023 (NTP) 9/16/2027 (Rehabilitation) | | Issued 10% Complete |
| 140-BR | Create and submit a Centrifuge Maintenance Plan to the Plaintiffs for review and the Department's approval. | 12/15/2023 | 12/15/2023 | Complete |
| 141-BR | Complete repairs and installation of Centrifuge #4 to operate as designed. | 12/31/2023 | FM Letter Sent: 12/20/2023 and 2/14/2024 Requested extension: 4/30/24 | 55% Complete |
| 142-BR | Submit Staffing Plan | 12/31/2023 | 12/22/2023 | Complete |

| Consent Decree Paragraph Reference – Treatment Plant ¹ | Activity | Consent Decree Deadline | Actual Completion Date | Compliance Status |
|--|--|--|-------------------------------|---------------------------------|
| 143-BR | City to have, maintain, and make available to the Department the formal written operation and maintenance procedures (Back River WWTP SOP) | 6/30/2024 | | 20% Complete |
| 144-BR | City to submit a report that identifies what processes are currently automated and conduct a feasibility study for automation of additional processes, with a plan and schedule for future automation. | 5/13/2024 | | 80% Complete |
| 145-BR | Baltimore City shall have, maintain, and update a Computerized Maintenance Management System (CMMS) as a functional work order system to ensure that the plant and its equipment operate as designed. | Ongoing | | Compliant |
| 146-BR | Complete a condition assessment and inventory of existing assets in order to develop an asset management program. Complete development and begin implementation of asset management program within 90 days of assessment and inventory. | 11/15/2024 (Assessment) 2/13/2025 (Commence Implementation) | | 75% Complete Not Yet Started |
| 147-PAT | Provide the Dryer Facility with access to, and control of, GST thickened sludge pumps to automate sludge withdrawal from the GSTs until the existing stored sludge from the SBTs is removed and the SBTs are returned to normal operating mode | 11/15/2023 | October 2023 | Complete |
| 148-PAT | Have and maintain contracts for on-call hauling services to serve as back-up to the Dryer Facility. | Ongoing | | Compliant |

| Consent Decree Paragraph Reference – Treatment Plant ¹ | Activity | Consent Decree Deadline | Actual Completion Date | Compliance Status |
|--|--|-------------------------------------|-------------------------------|--------------------------|
| 149-PAT | Complete replacement or rehabilitation of the grit facility, with includes provision for odour control and proper ventilation. Workers entering the grit facility to comply with Grit Facility SOPs | 4/30/2024 (Issue RFP) 12/31/2027 | | RFP 80% Completed |
| 150-PAT | Repair or refurbish Industrial Plant Influent Facility (IPI) screens and pumps, and replace or fully rehab the IPI Facility to operate as designed. | 6/30/2024 | | 95% Complete |
| 151-PAT | Repair all non-functional screens in the Fine Screen Facility, increase screen opening size for three screens, and install new conveyors, northern screen compactors, and curtains from the screen chutes to the belt. | 6/30/2024 | | 50% Complete |
| 152-PAT | Repair and upgrade scum trough actuators associated with the PSTs to allow for automatic operation of the scum removal system, and upgrade mechanisms of clarifiers #1-3 to provide automatic operation | 6/30/2024 | 10/23/2023 | Complete |
| 153-PAT | Ensure all six PSTs are fully functional and operating as designed. | 12/15/2023 | 9/5/2023 | Complete |
| 154(a)-PAT | Repair all RAS/WAS pumps for secondary clarifier #6a to operate as designed | 11/25/2023 | 8/16/2023 | Complete |
| 154(b)-PAT | Replace missing skimmer sections to increase scraper effectiveness. | 11/25/2023 | 9/22/2023 | Complete |
| 154(c)-PAT | Remove BAF media from secondary clarifier influent and BAF mudwells | 11/25/2023 | 11/18/2023 | Complete |

| Consent Decree Paragraph Reference – Treatment Plant ¹ | Activity | Consent Decree Deadline | Actual Completion Date | Compliance Status |
|--|---|--|-------------------------------|---------------------------------|
| 155-PAT | Complete evaluation of need for secondary clarifier #3. Within 10 days of evaluation: Request approval to discontinue or alter use of clarifier | 4/1/2024 (Complete evaluation) 5/1/2024 (Request Approval to Discontinue/Alter) | | 95% Complete Not Yet Started |
| 156-PAT | Investigate Biological Aerated Filter Facility (“BAF”) media state | 12/15/2023 | March 2023 | Complete |
| 157-PAT | Submit a plan and schedule to address BAF media loss and prohibit any discharge of media to waters of the State. | 1/14/2024 | 11/25/2023 | Complete |
| 158-PAT | Automate timed scum log operation of the Chlorine Contact Tank (CCT) | 1/31/2025 | | 95% Complete |
| 159-PAT | Ensure staff are present at all times during each shift to maintain manual skimming of FOGs or floating solids at the CCTs until 158-PAT is complete. | Ongoing | | Compliant |
| 160-PAT | Rehabilitate GST #4 and associated pumps | 3/14/2024 | 2/10/2023 | Complete |
| 161-PAT | Ensure all GSTs are fully functional and operating as designed. Baltimore City shall notify Plaintiffs upon receipt of parts. | 11/25/2023 or within 30 days of receipt of parts (whichever is sooner) | July 2023 | Complete |
| 162-PAT | Submit a PCB Minimization Plan | 12/15/2023 | 11/25/2023 | Complete |
| 163-PAT | Complete investigation into flow meter and complete root cause analysis of the discrepancy between influent and effluent flow volume. | 12/15/2023 | 5/29/2023 | Complete |

| Consent Decree Paragraph Reference – Treatment Plant ¹ | Activity | Consent Decree Deadline | Actual Completion Date | Compliance Status |
|--|--|--|-------------------------------|---------------------------------|
| 164-PAT | Submit a revised FOG Mitigation Plan | 11/25/2023 | 11/25/2023 | Complete |
| 165-PAT | Submit Staffing Report and Staffing Plan | 12/31/2023 | 12/22/2023 | Complete |
| 166-PAT | Have, maintain, and make available to the Department Patapsco WWTP SOP | 6/30/2024 | | 60% Complete |
| 167-PAT | Submit a report that identifies what processes at the Patapsco WWTP are currently automated, and conduct a feasibility study for the automation of additional processes, with a plan and schedule for future automation | 5/13/2024 | | 10% Complete |
| 168-PAT | Have, maintain, and update a Computerized Maintenance Management System (CMMS) as a functional work order system to ensure that the plant and its equipment and components operate as designed. | Ongoing | | Compliant |
| 169-PAT | Complete a condition assessment and inventory of existing assets in order to develop an asset management program, and within 90 days of the completion of the assessment and inventory, begin implementing the asset management program. | 11/15/2024 (Completion of assessment) 2/13/2025 (Commence Implementation) | | 40% Complete Not Yet Started |

| Consent Decree Paragraph Reference – Treatment Plant ¹ | Activity | Consent Decree Deadline | Actual Completion Date | Compliance Status |
|--|---|---|-------------------------------|--------------------------|
| 170-TPN | Every February 15, May 15, August 15, and November 15 during the pendency of the CD, Baltimore City shall submit to the Plaintiffs and post on its website quarterly progress reports detailing for the preceding calendar quarter, at a minimum, the implementation of any corrective actions and work performed under the CD, progress tracking on projects, required completion dates and actual completion dates, financial expenditures on each project, and all stipulated penalties that accrued during the quarter. | Annually 2/15 5/15 8/15 11/15 | Ongoing | Compliant |
| 171-TPN | Hold one virtual and one in-person meeting per year for each facility until completion of the CD | 11/15/2024 | | Pending |
| 172-BR | Install a sign at the pier adjacent to outfall 001 that notifies the public of the presence of the submerged treatment effluent pipe | 12/15/2023 | 12/11/2023 | Complete |
| 172-PAT | Apply for and diligently pursue all permits, licenses, or other authorizations necessary for the installation of a sign at the location of the submerged outfall pipe that notifies the public of the presence of the submerged wastewater treatment effluent pipe | 2/13/2024 | 2/13/2024 | Complete |
| 173-BR | Simultaneously with the installation of the signs required under Paragraph 172, Baltimore City shall install a red light next to, or on top of each sign that indicates when the plant experiences any by-pass as defined by the Discharge Permits | 12/15/2023 | 12/11/2023 | Complete |

| Consent Decree Paragraph Reference – Treatment Plant ¹ | Activity | Consent Decree Deadline | Actual Completion Date | Compliance Status |
|--|--|---------------------------------|-------------------------------|--------------------------|
| 173-PAT | Simultaneously with the installation of the signs required under Paragraph 172, Baltimore City shall install a red light next to, or on top of each sign that indicates when the plant experiences any by-pass as defined by the Discharge Permits | Dependent upon permit approval. | | Not Yet Started |
| 174-TEA | Baltimore City shall consult with the Plaintiffs and retain or engage a qualified, independent third-party engineer, to conduct an update to the comprehensive assessment of the Back River and Patapsco WWTPs prepared by Greeley and Hansen (“G&H”) in June 2022, and to submit a report, signed and sealed by the licensed professional engineer, summarizing the findings simultaneously and directly to all Parties within 90 days of the Effective Date. | 2/13/2024 | 2/13/2024 | 80% |
| 175-FCR | Final confirmation report after all Work to Be Performed is complete | 6/22/2027 | | 32% |

¹ BR = Back River WWTP, PAT = Patapsco WWTP, FM = Force Majeure