ATTACHMENT A

Back River WWTP Requested Information
(March 3, 2022)

a. Adequate Staffing

Baltimore City (the "City") has had difficulty in recent years recruiting and retaining employees at the Back River Wastewater Treatment Plant ("Back River WWTP"). In the summer of 2021, the Back River WWTP had a vacancy rate of 25%.

Within 30 days, provide the following information regarding plant personnel

- the optimum number of permanent staff necessary for each of the major process units (*e.g.*, primary clarification, activated sludge, etc.) to ensure the plant can operate efficiently and produce effluent quality as designed,
- the cost of employing the optimum number of permanent staff to efficiently operate the plant,
- the number of temporary staff currently working at each major process unit,
- the remaining vacancies for permanent positions in each of the major process unit, and
- the webpages where job postings are located, and the anticipated dates that the optimum number of permanent staff will be in place at each of the major process units.

Additionally, as detailed in the "Operators Certification 2021-2022-PWWTP" attachment to the November 22, 2021 email regarding "Operator Certifications - PWWTP and BRWWTP," many of the superintendents and operators have temporary certifications.

Within 14 days, update and submit to the Department the attached "211112 Back River Operators Cert.status.xlsx" spreadsheet.[1]

The Board of Waterworks & Waste Systems Operators Board ("WWSO") has also informed the Department that the City submits confusing or incomplete applications or payments, has a history of not providing proof of attendance for approved City-led training for operators, does not appear to provide any guidance on appropriate outside training, and generally does not appear to understand the certification process requirements.

[1] During the March 1, 2022 conference call, the Department was informed that the City had added approximately seven additional temporary certified operators and was likely to add three more in two weeks.

Within 30 days, please also provide a plan to obtain and maintain appropriate certifications for superintendents and operators.

b. Primary Settling Tank Cleaning, Maintenance, & Repair

The Back River WWTP was designed to treat a maximum of 400 million gallons per day ("MGD"), more than twice the estimated average daily receipt of wastewater (180 MGD). To do so, the Back River WWTP has eleven primary settling tanks ("PSTs") in its wastewater treatment chain. Assuming that each PST has a proportional treatment capacity of the plant's maximum treatment capacity, each PST can treat 36.36 MGD (400 MGD / 11 PSTs). In 2021, the Back River WWTP's average flow was approximately 114 MGD, which is only 63% of its average design capacity.

The 220211 Back River Status Spreadsheet.xlsx states that

a. "3 [PSTs are] currently functioning,"
b. "[t]wo more [will] be in service with [sic] two weeks,"
c. "funds [have been] procured for synagro [sic] to clean a third PST," and
d. "coupled with SC 954 will bring all 11 PST's into service."

The Back River WWTP does not presently have sufficient PST treatment capacity for an extreme wet weather event. Therefore, the Back River WWTP continues to violate General Condition III(B)(3)(a) of the Back River Discharge Permit, as it has failed to operate the Back River WWTP efficiently to minimize upsets and discharges of excess pollution, and General Condition III(B)(4)(b) as it has failed to "take all reasonable steps to minimize any adverse impact to the waters of this State, human health or the environment."

Within 30 days, provide a detailed description of each PST with

a. the present operational status,
b. any maintenance, repair, or replacement activities that are necessary to place it in service, and
c. the date by which it will be placed in service[2].

Within 30 days, provide also

a. the projected cost to bring all PSTs into service,

[2] During the March 1, 2022 conference call, the Department was informed that the City would repair two PSTs in 90 to 120 days (May 30, 2022 to June 29, 2022).

b. the minimum number of PSTs required to operate the plant as designed and to meet discharge permit effluent limits,
c. the anticipated date that a sufficient number of PSTs will be in service to operate the plant as designed and to meet discharge permit effluent limits, and
d. a PST maintenance and rotation plan, specifying the frequency and order that PSTs will be rotated out of service for maintenance and repair ito optimize PST performance and service life.

c. Enhanced Nutrient Reduction & Denitrification Filters

While the Back River WWTP includes an Enhanced Nutrient Removal ("ENR") process to treat nitrogen and phosphorus pollution in the wastewater, it exceeded the concentration-based annual loading limits for both total nitrogen ("TN") and total phosphorus ("TP") in 2021.

Poor ENR performance at the Back River WWTP is largely a result of insufficient solids removal from upstream processes clogging the denitrification filters ("DN Filters") and inadequate control and maintenance of the DNFs. *See* Back River WWTP Plant Operational Assessment," undated, submitted on December 20, 2021, at 4.

Although Baltimore City has implemented several short-term corrective actions to improve ENR performance, it appears likely that the Back River WWTP will not meet effluent nutrient limitations in the near future.

The January 5, 2022 BRWWTP Progress Report identifies the completion of the engineering review of the Denitrification Facility operations "with recommended repairs for optimal performance" review. However, the February 11 and 15, 2022 Back River status spreadsheet includes no recommendations or time-frame for completion of this project.

Within 7 days, provide appropriate reports from the "data dashboard" sufficient to show each pollutant's concentration throughout the full treatment process.

Within 30 days, provide a detailed description of each DN Filter, including:

a. the present operational status,
b. any maintenance, repair, or replacement activities that are necessary to operate the DNF efficiently, and
c. the date by which improvements to the DN Filters will be completed.

Within 30 days, provide also:

a. a report regarding DN Filters operations, including recommendations for improvements and a schedule for completion[3],
b. the projected cost to bring the DN Filters into service,
c. the minimum number of DN Filters required to operate the plant as designed and to meet discharge permit effluent limits,
d. the anticipated date that a sufficient number of DN Filters will be in-service to operate the plant as designed and to meet discharge permit effluent limits.

d. Sand Filter Rehabilitation

In order to treat the Back River WWTP's 2021 114 MGD average flow, the plant has 48 sand filters in its wastewater treatment chain. The 220211 Back River Status Spreadsheet.xlsx states that, of the plant's 48 sand filters, only "15 [are] currently operational."

With only a third of the sand filters operational, the plant may not have sand filter treatment capacity for the average flow or extreme wet weather events. The City has not provided a date by which the other 33 sand filters will be operational.

Within 30 days, provide:

a. a report regarding sand filter operations, including recommendations for improvements and a schedule for completion[4],
b. the projected cost to bring the sand filters into service,
c. the minimum number of sand filters required to operate the plant as designed and to meet discharge permit effluent limits,
d. the anticipated dates[5] by which a sufficient number of sand filters will be in-service to operate the plant as designed and to meet discharge permit effluent limits, and

[3] During the March 1, 2022 conference call, the Department was informed that the City needed to re-automate the DN Filters and would do so in 30 to 45 days (March 31, 2022 to April 15, 2022).

[4] During the March 1, 2022 conference call, the Department was informed that Ace Construction would provide a quote to the City by March 11, 2022.

[5] During the March 1, 2022 conference call, the Department was informed that the City would have 20 additional sand filters in service by September 2022.

e. the anticipated date of completion of the sand filter capital improvement project.[6]

e. Suspended Solids Reduction

Milestones for significant projects necessary to achieve compliance with total suspended solids ("TSS") are identified in the October 7, 2021 strategic plan for the Back River WWTP as "immediate" and "long-term." In addition to the rehabilitation of sand filters, the City has explained, during the February 15, 2022 conference call, that reducing total suspended solids ("TSS") will have a "significant impact" on the plant's ability to achieve compliance with its discharge permit effluent limits.

The most recently reviewed Discharge Monitoring Reports ("DMRs") for December 2021 indicate that the plant experienced six total phosphorus ("TP") excursions, including violations of monthly average and daily maximum loading and concentration effluent limits. Further, for the full year of 2021, the plant exceeded its TSS annual loading limit by more than 2.7 million pounds. For the same year, the plant exceeded its TN and TP concentration-based limits by approximately 622,000 and 84,000 pounds, respectively.

The 220211 Back River Status Spreadsheet.xlsx designates the biosolids (December 31, 2025 completion date) and egg digester rehabilitation (no planned completion date) projects as "Long Term" projects. The Department is concerned that the plant will continue to experience effluent violations until such time that these major projects are completed.

Within 30 days, provide accelerated schedules for the completion of the biosolids and egg digester rehabilitation projects.

f. Capital Project List

Within 30 days, provide the Department with a full list of all capital improvement projects related to the operation of the Back River WWTP. For each project, include the sanitary contract number, the names of all vendors, and all categories contained in 220211 Back River status spreadsheet.xlsx.

For each project, include:

a. the date the project was first identified,
b. the date the project was advertised,
c. the date a notice to proceed was issued,

[6] During the March 1, 2022 conference call, the Department was informed that the City would completely rehabilitate all of the sand filters in five years (March 1, 2027).

d. the names of all vendors,
e. the sanitary contract number,
f. the budget amount, and
g. the following categories contained in the 220211 Back River status spreadsheet.xlsx:
    i. planned completion date,
    ii. present estimated completion date,
    iii. actual completion date,
    iv. percent completed,
    v. funding status,
    vi. progress, and
    vii. timeframe.

g. Third-Party Certified Engineering Evaluation & Report

Within 90 days, provide the Department with a third-party certified engineering evaluation and report for the plant's operation and equipment. The report shall include a comprehensive list of needed improvements, ranked by their impact on compliance with discharge permit effluent limits.

The Department intends that a negotiated resolution of the pending litigation will require the implementation of the findings and recommendations of this third-party certified engineering evaluation report.

h. Industrial Stormwater Discharge Permit

Within 14 days, provide a detailed description of all the actions taken in response to the June 25, 2021 inspection and report regarding the plant's compliance with its 12-SW permit authorization.

i. Plant Tour & Meeting

Please provide three dates in March 2022 for the City to provide a tour of the Back River WWTP with a follow up meeting regarding the engineering plan details and schedule.