BALTIMORE CITY DEPARTMENT OF PUBLIC WORKS
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STATUS REPORT

Progress and Improvements

DPW BUREAU/OFFICE: Back River Wastewater Treatment Plant (Back River WWTP) Date: 9/10/2023

Parameters	August 2023	Monthly Permit limit	Meeting Requirement
Total Suspended Solids (TSS)	2 mg/l (Outfall 001) 2 mg/l (Outfall 002)	10 mg/l (both outfalls)	Yes
Biochemical Oxygen Demand (BOD)	<2.0 mg/l (Outfall 001) <2.0 mg/l (outfall 002)	10 mg/l (both outfalls)	Yes
Total phosphorus (TP) *	<.10 mg/l (Outfall 001) .14 mg/l (Outfall 002)	0.20 mg/l (both outfalls)	Yes (Outfall 001) Yes (Outfall 002)
Ammonia (NH3)	0.6 mg/l (Outfall 001) 0.4 mg/l (Outfall 002)	5.1 mg/l (Nov,1 to Apr. 30) 2.0 mg/l (May 1 to Oct. 31), both Outfalls	Yes
E-coli	4 MPN/100 ml (Outfall 001) 1 MPN/100 ml (Outfall 002)	126 MPN/100 ml (both outfalls)	Yes

MPN = Most Probable Number

Parameters (Outfall 001)	Annual Limit	Seasonal Limit (May 1 to Oct. 31)	August Official Total	Meeting Requirements
Total Nitrogen (TN)	1,582,055 lbs./yr. cumulative	99,782 lbs./month	39,959 lbs.	Yes

Figure 1: Aerial View of Back River WWTP

Maintenance Updates

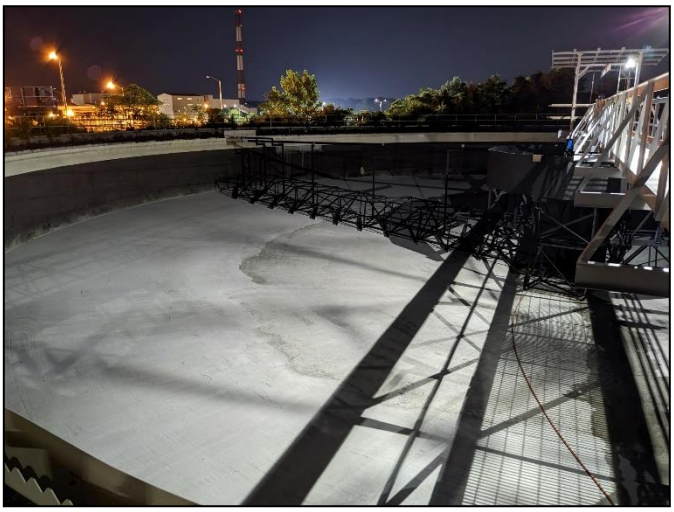

Figure 2: Back River WWTP PST #9 final repairs

Back River WWTP now has five Primary Settling Tanks (PST) in full service (#1, #7, #8, #9, and #11). Seven PSTs are necessary for maximum design flow. Six PSTs are scheduled to be in place by the end of 2023. PST # 2slated to return to service by mid-September. PST #3: expected to be placed in service in November 2023. PST #4: scheduled to be placed in service January 2024. PST #5: slated to begin repairs this summer once #2 is returned to service. PST #6: to be cleaned and repaired once the odor control system has been installed. PST#10: removed from service for cleaning and repairs, and its implementation date was moved to October 2023 due to a shipping issue.

All 18 reactors are available for the biological nutrient removal (BNR) process (12 are in service, with six on standby). The optimal number for regular flow is ten reactors. The secondaries have 34 of 36 final clarifiers available for service, 23 in service, and 11 available on standby. Plant staff continue to monitor the number of in-service reactors and clarifiers to ensure the optimal amount for the influent flow. This change has increased the overflow rate through the process and reduced detention times.

All 52 De-Nitrification Filters (DNF) remain available for service, including 13 filters for redundancy.

Thirty-five of 48 Sand Filters, historically used for final solids removal before the Enhanced Nutrient Removal (ENR) upgrades, are available for service as needed. Given the ENR upgrades and process improvements throughout the plant, the Baltimore City Department of Public Works (DPW) is analyzing the Sand filter process for potential changes. Twenty filters are required for average daily flow (ADF), leaving 15 on standby for wet-weather events.

Currently, three of four centrifuges are available for operation. The last centrifuge was shipped to Kentucky on Aug. 17, 2023, for its repairs and is expected to return to the plant by December 2023, giving the plant four refurbished centrifuge systems. The new polymer system noted in the August 2023 status report has improved the centrate quality, which is returned to the treatment process. The cake material produced from DPW's centrifuges is hauled out for composting. Composting is one way Back River WWTP supports DPW's environmental protection mission.

Rehabilitation of the in-ground and egg-shaped digesters began on August 16, 2023, and construction will take four years to complete. This critical work will rehabilitate processes and equipment at the end of their life cycle. The result will aid the plant in biosolids digestion (which reduces the amount of biosolids to process and dispose of by approximately 40%) while also generating methane gas used for heating and electrical generation to offset utility costs for the plant.

Methane generation and capture is another way Back River WWTP supports DPW's environmental protection mission by reducing the plant's carbon footprint.

Compliance and Safety

On August 31, 2023, DPW's Office of Environmental Regulatory Compliance and Safety (ERCS) participated in a Maryland Department of the Environment (MDE) field inspection with MDE environmental compliance specialists at Back River WWTP. ERCS continues to follow-up on areas observed during the MDE site walk.

The City and Atkins Global, the City's partner for ensuring compliance, continue implementing weekly safety meetings to address current site hazards and prior MOSH violations. A comprehensive health and safety plan is under development.

Job hazard assessments for operations staff have been completed and are currently under review. Health and safety professionals have been conducting a comprehensive safety audit, which is ongoing.

ERCS met with the plant staff to review the quality control data. ERCS continues to work with Synagro Technologies Inc., the contractor responsible for drying out sludge at the plant, on the root cause analysis of the March 2023 explosion and to review the current emergency action plan for Pelletec.

Training

The City's Program Management Team (PMT), Atkins Global, continues to work with the DPW staff to develop curriculum and training systems to support operations and maintenance staff's apprenticeship and ongoing training needs.

The Office of Safety and Training (OST) continues developing and conducting various leadership and staff trainings to support the professional growth of future plant leaders and improve the work culture. Investment in our City staff is a crucial component to long-term sustained success.

The next B'More WISE (Baltimore Water Infrastructure Strategic Education Program) cohort will begin in late September. The cohort includes current City personnel who have been attending training classes twice weekly for six months. Their participation in the program will prepare them to take the operations certification exam. The B'More WISE program has received positive feedback from the previous cohort and the host facility staff.

The DPW Bureau of Water and Wastewater continues focusing on 360Water training for operations and maintenance staff. The plant operations team met their August 2023 goal of 60 training hours utilizing the 360Watersystem.

Synagro Facility Update

Synagro continues operating its existing and temporary centrifuges while repairing the onsite dryers. The dryers are scheduled for a phased startup beginning in September 2023. The last dryer is expected to come online in October 2023. Synagro continues to coordinate the hauling of the cake material for land application.

Summary

DPW has made substantial progress toward full compliance at Back River WWTP**. All monthly effluent permit parameters have been met for August 2023.** DPW recognizes that Back River is an asset to the Baltimore region and is confident in the path forward and sustaining our compliance.