

DOCKET NO. D-1971-078 CP-5

DELAWARE RIVER BASIN COMMISSION

Discharge to a Tributary of Special Protection Waters

**City of Bethlehem
Wastewater Treatment Plant
Bethlehem City, Northampton County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an application submitted to the Delaware River Basin Commission (DRBC or Commission) on March 28, 2022 (Application), for approval of modification of the docket holder's existing wastewater treatment plant (WWTP) and its discharge. National Pollutant Discharge Elimination System (NPDES) Permit No. PA0026042 for this discharge was issued by the Pennsylvania Department of Environmental Protection (PADEP).

The Application was reviewed for continuation of the project in the Comprehensive Plan and approval under Section 3.8 of the *Delaware River Basin Compact*. The Lehigh Valley Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on August 10, 2022.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to approve a modification to increase primary settling in the docket holder's existing 20.0 million gallons per day (mgd) WWTP. The proposed modifications consist of increasing primary settling by the addition of a coagulant and polymer at the primary clarifiers and generally involve the following elements: new concrete tank pad and spill containment wall, new 12,500-gallon bulk coagulant storage tank, new coagulant feed pumps, piping, induction mixer and appurtenances, new polymer building, two new polymer totes, polymer blend units and feed piping, associated electrical and instrumentation/SCADA system updates.

2. Location. The docket holder's WWTP is located at Shimersville Road in the City of Bethlehem, Northampton County, Pennsylvania. The WWTP will continue to discharge treated effluent to Lehigh River, at River Mile 183.7 – 9.5 (Delaware River – Lehigh River). The WWTP also has an emergency outfall, which is permitted to discharge treated effluent to Saucon Creek at River Mile 183.7-9.5-0.3 (Delaware River – Lehigh River – Saucon Creek). The WWTP discharge is located in the drainage area to the Lower Delaware Special Protection Waters (SPW).

The WWTP outfall is located in the Lehigh River Watershed as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001 (WWTP)	40° 37' 12.10"	75° 20' 11.50"
006 (Emergency)	40° 37' 6.00"	75° 20' 1.10"

3. **Area Served.** The docket holder’s WWTP will continue to serve the following municipalities all located in the Delaware River Basin in Pennsylvania.

MUNICIPALITY	COUNTY
City of Allentown (portions)	Lehigh
Fountain Hill Borough	Lehigh
Salisbury Township	Lehigh
Hanover Township	Lehigh & Northampton
Lower Saucon Township	Northampton
Hellertown Borough	Northampton
Palmer Township	Northampton
Bethlehem Township	Northampton
Lower Nazareth Township	Northampton
Borough of Freemansburg	Northampton
East Allen Township	Northampton

For the purpose of defining the Area Served, Section B (Type of Discharge) and D (Service Area) of the docket holder’s Application are incorporated herein by reference, to the extent consistent with all other conditions contained in the DECISION Section of this docket.

4. **Design Criteria.** The docket holder’s existing 20.0 mgd WWTP utilizes an activated sludge treatment process. The proposed project will enhance the chemical treatment in the primary treatment process of the facility to improve treatment for the plant during wet weather events and increase nitrification stability.

5. **Facilities.** The existing WWTP facilities consist of four mechanical bar screens, four grit collectors, two primary clarifiers, three aeration tanks, two intermediate clarifiers, four trickling filters, two final clarifiers, and three chlorine contact tanks.

The proposed project involves the addition of chemically enhanced primary treatment (CEPT) to the primary clarifiers to improve the performance of primary settling, both in terms of BOD and TSS removal. CEPT adds polyaluminum chloride (PACI), and a small amount of polymer to increase flocculation and make the settling process faster and more efficient than conventional primary settling. The project consists of the addition of two PACI tanks, two polymer totes, feed pumps, and a blending unit. Sludge handling operations at the plant consist of three primary anaerobic digesters, a secondary digester, a sludge gravity thickener, two gravity belt thickeners and two centrifuges for sludge digestion and dewatering.

The docket holder's WWTP discharges to waters classified as SPW and is required to have available standby power. The existing WWTP has a dual electrical power supply installed capable of providing standby power. The proposed upgraded facility will also be powered by the power source of the existing facility.

The docket holder's WWTP is staffed 24 hours per day and continuously monitors plant operations in accordance with the Commission's SPW requirements. The existing WWTP has a SCADA system installed that continuously monitors plant operations. The proposed upgraded WWTP will be connected to the existing monitoring system.

The docket holder has prepared and implemented an emergency management plan (EMP) for the expanding existing and new WWTP in accordance with Commission SPW requirements.

Several of the WWTP facilities are located in the 100-year floodplain. The docket holder indicated in the application that the WWTP facilities located in the floodplain are not located in the floodway and are flood proofed up to the flood protection elevation (one foot above the 100-year flood elevation). The WWTP facilities are protected by an existing dike system that surrounds the facility and is equipped with a dual electrical power supply system that is capable of pumping during stormwater events.

Wasted sludge will continue to be handled in accordance with NPDES Permit No. PA0026042.

6. Water Withdrawals. The potable water supply in the project service area is provided by surface water intakes owned and operated by the docket holder. The docket holder's water withdrawal is described in detail in Docket No. D-1995-019 CP-2, which was approved on June 14, 2017.

7. NPDES Permit / DRBC Effluent Requirements. NPDES Permit No. PA0026042 issued by the PADEP includes final effluent limitations for the project discharge to surface waters classified by the PADEP as supporting migratory fishes (MF), warm water fishes (WWF), and cold water fishes (CWF). EFFLUENT TABLES C-1 & C-2 included in Section C. DECISION Condition C.1. of this docket contain effluent requirements for DRBC parameters that must be met as a condition of this approval. Effluent requirements for Outfall No. 001 are based on a discharge rate of 20.0 mgd.

8. Relationship to the Comprehensive Plan. The existing WWTP was added to the Comprehensive Plan as part of Addendum No. 1, adopted on July 25, 1962. Expansions/modifications/renewals of the WWTP were approved by Docket Nos. D-1971-078 CP-1, D-1971-078 CP-2, D-1971-078 CP-3, and D-1971-078 CP-4 on June, 22, 1971, October 22, 2009, December 5, 2012, and June 12, 2019, respectively. Issuance of this docket will renew and continue the WWTP and its discharge in the Comprehensive Plan.

B. FINDINGS

The docket holder applied for approval of a modification to increase primary settling to the docket holder's existing 20.0 million gallons per day (mgd) WWTP.

1. Special Protection Waters

On July 16, 2008, the DRBC approved amendments to its *Water Quality Regulations (WQR)* that provide increased protection for waters that the Commission classifies as SPW. The portion of the Delaware River and its tributaries within the boundary of the Lower Delaware River Management Plan Area was approved for SPW designation.

The docket holder's WWTP discharges to the drainage area to the Lower Delaware SPW. The docket holder's WWTP discharge is required to comply with the SPW requirements, as outlined in Article 3.10.3A.2. of the *WQR*.

Article 3.10.3A.2.e.1). and 2). of the Commission's *WQR* states that projects subject to review under Section 3.8 of the Compact that are located in the drainage area of SPW must submit for approval a Non-Point Source Pollution Control Plan (NPSPCP) that controls the new or increased non-point source loads generated within the portion of the docket holder's service area which is also located within the drainage area of SPW. The service area of the docket holder is located in the drainage area to the SPW. Since this project does entail additional construction of facilities and service area and there are increased non-point source loads associated with this approval, the NPSPCP requirement is applicable at this time. The City of Bethlehem has adopted and implemented a stormwater ordinance requirements and post-construction stormwater control. The docket holder has submitted an Erosion and Sediment Control plan that satisfies the NPSPCP requirements of the Commission.

2. Other

At the docket holder's WWTP discharge, the Lehigh River has an estimated seven-day low flow with a recurrence interval of ten years (Q_{7-10}) of 210 mgd (325 cfs). The ratio of this low flow to the hydraulic design wastewater discharge rate from the 20 mgd WWTP is 10.5 to 1.

The nearest surface water intake of record for public water supply is located on the Delaware River approximately 36 River Miles downstream of the docket holder's WWTP and is operated by Bucks County Water and Sewer Authority.

The project does not conflict with the Comprehensive Plan and is designed to prevent substantial adverse impact on the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

The effluent limits in the NPDES Permit conform with Commission effluent quality requirements, where applicable.

The project is designed to produce a discharge that meets the effluent requirements as set forth in the Commission’s *Water Quality Regulations (WQR)*.

C. DECISION

Effective on the approval date for Docket No. D-1971-078 CP-5 below, the project described in Docket No. D-1971-078 CP-4 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-1971-078 CP-5; Docket No. D-1971-078 CP-4 is terminated and replaced by Docket No. D-1971-078 CP-5; and the project and the appurtenant facilities described in Section A “DESCRIPTION” of this docket shall be continued in the Comprehensive Plan. The project and appurtenant facilities as described in Section A of this docket are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

Monitoring and Reporting

1. The docket holder shall comply with the requirements contained in the EFFLUENT TABLES below. The docket holder shall submit the required monitoring results electronically to the DRBC Project Review Section via email aemr@drbc.gov on the **Annual Effluent Monitoring Report Form** located at this web address: <https://www.nj.gov/drbc/programs/project/docket-app-info.html#3>. The monitoring results shall be submitted annually, absent any observed limit violations, by January 31. If a DRBC effluent limit is violated, the docket holder shall submit the result(s) to the DRBC within 30 days of the violation(s) and provide a written explanation that states the action(s) the docket holder has taken to correct the violation(s) and protect against any future violations. The following average monthly effluent limits are among those listed in the NPDES Permit and meet or are more stringent than the effluent requirements of the DRBC.

EFFLUENT TABLE C-1: DRBC Parameters Included in NPDES Permit

OUTFALL 001 (Discharging to the Lehigh River)		
PARAMETER	LIMIT	MONITORING
pH (Standard Units)	6 to 9 at all times	As required by NPDES Permit
Total Suspended Solids	30 mg/l	As required by NPDES Permit
CBOD ₅ (at 20° C)	25 mg/l	As required by NPDES Permit
Ammonia Nitrogen (5-1 to 10-31) (11-1 to 4-30)	5 mg/l 15 mg/l	As required by NPDES Permit
Fecal Coliform (5-1 to 9-30) (10-1 to 4-30)	200 colonies per 100 ml as a geo. avg. 2000 colonies per 100 ml as a geo. avg.	As required by NPDES Permit

The following monitoring requirements and average monthly effluent limits are for DRBC parameters not listed in the NPDES Permit.

EFFLUENT TABLE C-2: DRBC Parameters Not Included in NPDES Permit

OUTFALL 001 (Discharging to Lehigh River)		
PARAMETER	LIMIT	MONITORING
Dissolved oxygen	Monitor & Report	Monthly
Total Dissolved Solids*	1,000 mg/l *	Quarterly*
CBOD ₅ (at 20° C)	Monitor & Report Percent Removal	Monthly
CBOD ₅ (at 20° C) Influent	Monitor & Report	Monthly
Nitrate as N	Monitor & Report	Monthly
Total Nitrogen	Monitor & Report	Monthly

* See DECISION Condition C.9

2. Within 10 days of the date that construction of the project has started, the docket holder shall notify the DRBC of the starting date and scheduled completion date. Within 30 days of the date of project completion, the docket holder shall notify the DRBC of the project completion date.

3. Within 30 days of completion of construction of the approved project, the docket holder is to submit to the attention of the Project Review Section of DRBC a Construction Completion Statement (“Statement”) signed by the docket holder’s professional engineer for the project. The Statement must (1) either confirm that construction has been completed in a manner consistent with any and all DRBC-approved plans or explain how the as-built project deviates from such plans; and (2) indicate the date on which the project was (or is to be) placed in operation.

Other Conditions

4. Sound practices of excavation, backfill and reseedling shall be followed to minimize erosion and deposition of sediment in streams.

5. Nothing in this docket constitutes a defense to any penalty action for past conduct of the docket holder or ongoing activity not authorized by this approval. In particular, renewal of this docket does not resolve violations – whether in the past or continuing – of provisions of the Delaware River Basin Compact (“Compact”) or any rule, regulation, order or approval duly issued by the Commission or the Executive Director pursuant to the Compact. The Commission reserves its right to take appropriate enforcement action against the docket holder, including but not limited to recovery of financial penalties consistent with Section 14.17 of the Compact, for any and all such prior or continuing violations.

6. Prior to allowing connections from any new service areas or any new developments, the docket holder shall either submit and have approved by the Executive Director of the DRBC a NPSPCP in accordance with Section 3.10.3.A.2.e, or receive written confirmation from the Executive Director of the DRBC that the new service area complies with a DRBC-approved NPSPCP.

7. Prior to the docket holder initiating any substantial alterations or additions to the existing WWTP as defined in Section 3.10.3A2.a.16) of the Commission's WQR, an application must be submitted and approved by the Commission. Such an application shall be submitted prior to final design to ensure that the Commission can provide the docket holder with draft effluent limitations for SPW specific parameters as guidance for design as to not require duplication of work or cause a substantial expenditure of public funds without Commission approval. The docket holder is encouraged to contact the Commission staff during the planning stages to identify the potential effluent limitations required to meet the no measurable change parameters under SPW.

8. Except as otherwise authorized by this docket, if the docket holder seeks relief from any limitation based upon a DRBC water quality standard or minimum treatment requirement, the docket holder shall apply for approval from the Executive Director or for a docket revision in accordance with Section 3.8 of the *Compact* and the *Rules of Practice and Procedure*.

9. The docket holder may request of the Executive Director in writing the substitution of specific conductance for TDS. The request should include information that supports the effluent specific correlation between TDS and specific conductance. Upon review, the Executive Director may modify the docket to allow the substitution of specific conductance for TDS monitoring.

10. Section 2.3.10 of the Commission's Rules of Practice and Procedure (18 C.F.R. 401.41), limiting the Commission's approval to three years in the absence of an expenditure of substantial funds by the project sponsor in reliance on the approval, is hereby waived for good cause shown in accordance with Section 2.9.3 (18 C.F.R. 401.123) of the same regulations. This approval shall expire on the expiration date set forth below unless prior thereto the docket holder has applied to the Commission to renew or extend this approval.

11. The docket holder is responsible for timely submittal to the DRBC of a docket renewal application on the appropriate application form including the appropriate docket application filing fee (see 18 CFR 401.43) at least 6 months in advance of the docket expiration date set forth below. The docket holder will be subject to late filed renewal surcharges in the event of untimely submittal of its renewal application, whether or not DRBC issues a reminder notice in advance of the deadline or the docket holder receives such notice. In the event that a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below, the terms and conditions of the current docket will remain fully effective and enforceable against the docket holder pending the grant or denial of the application for docket approval.

12. The docket holder is permitted to treat and discharge wastewater as set forth in the Area Served Section of this docket, which incorporates by reference Sections B (Type of Discharge) and D (Service Area) of the docket holder's Application to the extent consistent with all other conditions of this DECISION Section.

- 13.** The docket holder is prohibited from treating/pre-treating any hydraulic fracturing wastewater from sources in or out of the Basin at this time. Should the docket holder wish to treat/pre-treat hydraulic fracturing wastewater in the future, the docket holder will need to first apply to the Commission to renew this docket and be issued a revised docket allowing such treatment and an expanded service area. Failure to obtain this approval prior to treatment/pre-treatment will result in action by the Commission.
- 14.** The facility and operational records shall be available at all times for inspection by the DRBC.
- 15.** The facility shall be operated at all times to comply with the requirements of the Commission's WQR.
- 16.** If at any time the receiving treatment plant proves unable to produce an effluent that is consistent with the requirements of this docket approval, no further connections shall be permitted until the deficiency is remedied.
- 17.** Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.
- 18.** The docket holder shall discharge wastewater in such a manner as to avoid injury or damage to fish or wildlife and shall avoid any injury to public or private property.
- 19.** No sewer service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).
- 20.** The issuance of this docket approval shall not create any private or proprietary rights in the waters of the Basin, and the Commission reserves the right to amend, suspend or rescind the docket for cause, to ensure proper control, use and management of the water resources of the Basin.
- 21.** The docket holder shall be subject to applicable DRBC regulatory program fees, in accordance with duly adopted DRBC resolutions and/or regulations (see 18 CFR 401.43).
- 22.** This approval is transferable by request to the DRBC Executive Director provided that the project purpose and area served approved by the Commission in this docket will not be materially altered because of the change in project ownership. The request shall be submitted on the appropriate form and be accompanied by the appropriate fee (see 18 CFR 401.43).
- 23.** The docket holder shall request a name change of the entity to which this approval is issued if the name of the entity to which this approval is issued changes its name. The request for name change shall be submitted on the appropriate form and be accompanied by the appropriate fee (see 18 CFR 401.43).

24. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

25. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the Rules of Practice and Procedure. In accordance with Section 15.1(p) of the *Delaware River Basin Compact*, cases and controversies arising under the *Compact* are reviewable in the United States district courts.

BY THE COMMISSION

APPROVAL DATE: September 8, 2022

EXPIRATION DATE: September 30, 2027