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DOCKET NO. D-2009-040 CP-3

DELAWARE RIVER BASIN COMMISSION

**Village of Buckingham Springs
Wastewater Treatment Plant
Buckingham Township, Bucks County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an application submitted to the Delaware River Basin Commission (DRBC or Commission) on October 10, 2017 (Application), for renewal of the docket holder's existing wastewater treatment plant (WWTP) and its discharge. National Pollutant Discharge Elimination System (NPDES) Permit No. PA0053279 for this discharge was issued by the Pennsylvania Department of Environmental Protection (PADEP) on April 23, 2015.

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 Bucks County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on February 13, 2019.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to renew approval of the docket holder's existing 0.1 million gallons per day (mgd) WWTP and its discharge. This docket also approves a total dissolved solids (TDS) determination for the WWTP discharge, consisting of an increase in the average monthly TDS effluent limit for the WWTP discharge from 1,000 mg/l to 1,500 mg/l.

2. Location. The docket holder's WWTP is located on Service Court at its intersection with Spring Meadow Circle in the Village of Buckingham Springs in Buckingham Township, Bucks County, Pennsylvania. The WWTP will continue to discharge treated effluent to Mill

Creek at River Mile 115.63 – 23.39 – 4.95 (Delaware River – Neshaminy Creek – Mill Creek), in the Neshaminy Creek Watershed as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001	40° 18' 01"	75° 02' 33"

3. **Area Served.** The docket holder's WWTP will continue to serve the Village of Buckingham Springs residential development located in Buckingham Township, Bucks County, Pennsylvania. 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 0.1 mgd WWTP utilizes a sequencing batch reactor (SBR) treatment process.

5. **Facilities.** The WWTP facilities consist of a flow equalization (surge) tank, two 50,000-gallon-per-day SBR tanks, an effluent tank for chlorination and dechlorination, a sludge holding tank, and 4 reed beds. Effluent is conveyed to detention ponds prior to discharge to Mill Creek.

The project facilities are not located in the 100-year floodplain.

Wasted sludge is directed to the on-site reed beds.

6. **Water Withdrawals.** The potable water supply in the project service area is provided by the docket holder. The water withdrawal is described in detail in Docket No. D-1994-049 CP-3 which was approved on March 16, 2016.

7. **NPDES Permit / DRBC Effluent Requirements.** NPDES Permit No. PA0053279 was issued by the PADEP on April 23, 2015 and includes final effluent limitations for the project discharge to surface waters classified by the PADEP as supporting warm water fishes (WWF) / migratory fishes (MF). EFFLUENT TABLES C-1 & C-2 included in Section C.1 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 0.1 mgd.

8. **Relationship to the Comprehensive Plan.** The existing WWTP was added to the Comprehensive Plan by Docket No. D-2009-040 CP-1 on May 5, 2010. The WWTP approval was renewed by Docket No. D-2009-040 CP-2 on September 10, 2014. Issuance of this docket continues the WWTP and its discharge in the Comprehensive Plan.

B. FINDINGS

The docket holder submitted an application to renew and to modify the DRBC approval of the existing Village of Buckingham Springs WWTP, consisting of an increase in the average monthly TDS effluent limits for Outfall No. 001 from 1,000 mg/l to 1,500 mg/l. No modifications to the existing WWTP facilities are proposed.

1. Total Dissolved Solids Determination

Section 3.10.4.D.2 of the Commission's Water Quality Regulations (WQR) states the following:

"Total dissolved solids shall not exceed 1000 mg/l, or a concentration established by the Commission which is compatible with designated water uses and stream quality objectives, and recognizes the need for reserve capacity to serve future dischargers."

The 1,000 mg/l effluent limit was included in Docket Nos. D-2009-040 CP-1 and D-2009-040 CP-2, approved on May 5, 2010 and September 10, 2014, respectively. On November 27, 2014, the docket holder notified DRBC of exceedances of the 1,000 mg/l limit. DRBC staff indicated to the docket holder that a TDS determination may be required if the WWTP effluent was unable to meet the 1,000 mg/l limit and advised the docket holder to perform more frequent TDS effluent monitoring. Bi-weekly effluent monitoring for TDS was performed from October, 2014 to May, 2017, and the results indicated that the WWTP effluent averaged 1,037 mg/l TDS, with a maximum of 1,228 mg/l.

The docket holder's engineer, Castle valley Consultants (Engineer), submitted a TDS determination request and TDS questionnaire in the 10/10/2017 DRBC application. The conclusions of the TDS determination questionnaire and the results of other monitoring performed by the docket holder, in support of its request for a TDS variance from the 1,000 mg/l effluent limit, is as follows:

1. Wastewater treatment chemicals are added to the WWTP treatment process, including ferric chloride to reduce phosphorous, and sodium hypochlorite for chlorination. The addition of these chemicals has the potential to increase TDS in the WWTP effluent, though the Engineer indicated that chemical addition is minimized so as not to increase TDS in the effluent. TDS influent and effluent monitoring performed in 2015 shows that TDS in the WWTP influent (prior to chemical addition) exceeds 1,000 mg/l in half of the samples taken, and that effluent TDS does not consistently exceed influent TDS. This indicates that TDS levels are high prior to chemical addition at the WWTP process, and chemical addition is at worst a minor contributor to exceedances of the 1,000 mg/l TDS limit,
2. In order to determine if winter time road salting is a contributor to elevated TDS, the Engineer analyzed TDS levels in the influent and effluent during wet weather rainfall events and during dry weather (no rainfall). The data analysis indicated that TDS levels did not increase or fluctuate during rainfall events, and therefore elevated TDS could not be attributed to road salting.
3. The Engineer performed raw water sampling for TDS at several locations in the community water supply system. The sampling shows that TDS averaged approximately 400-500 mg/l at the entry point to the community homes. The sampling also indicated elevated water hardness of the public water supply. Although

TDS levels are elevated in the public water supply, the public water supply is not the sole contributor to exceedances of the 1,000 mg/l TDS limit,

4. The docket holder submitted information that the majority of the homes served by the WWTP have water softeners to remove hardness in the public water supply. During the water softener regeneration process, water containing hardness minerals high in TDS is backwashed to the sewer system for conveyance to the WWTP. The Engineer believes that exceedances of the 1,000 mg/l TDS limit are a result of elevated TDS in the drinking water, and the water softeners backwash. The docket holder and Engineer performed community outreach to inform the Village of Buckingham Springs residents on proper operation and maintenance of the water softeners in order to reduce TDS levels in the WWTP influent.

DRBC staff determined that the monitoring/sampling and other information provided by the docket holder and Engineer support the claim that the elevated TDS levels in the WWTP effluent are not caused by the WWTP operations/processes, and may be a result of elevated hardness in the public water supply and water softeners regeneration backwash. Therefore, this docket grants the request for the TDS variance, and includes an average monthly TDS effluent limit of 1,500 mg/l. Additionally, the docket holder is required to monitor WWTP influent for TDS on a monthly basis (See EFFLUENT TABLE C-2 in Section C.1.).

2. Other

At the docket holder's WWTP discharge, Mill Creek has an estimated seven-day low flow with a recurrence interval of ten years (Q_{7-10}) of 0.49 mgd (0.76 cfs). The ratio of this low flow to the hydraulic design wastewater discharge from the 0.1 mgd WWTP is 5 to 1.

The nearest surface water intake of record for public water supply is located on Neshaminy Creek approximately 20 River Miles downstream of the docket holder's WWTP, and is operated by Aqua Pennsylvania.

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 are in compliance with Commission effluent quality requirements, where applicable.

The project is designed to produce a discharge meeting the effluent requirements as set forth in the Commission's WQR.

C. DECISION

Effective on the approval date for Docket No. D-2009-040 CP-3 below, the project described in Docket No. D-2009-040 CP-2 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-2009-040 CP-3; Docket No. D-2009-040 CP-2

is terminated and replaced by Docket No. D-2009-040 CP-3; 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.state.nj.us on the **Annual Effluent Monitoring Report Form** located at this web address: <http://www.state.nj.us/drbc/programs/project/pr/info.html>. 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 (Mill Creek)		
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) (5-1 to 10-31) (11-1 to 4-30)	10 mg/l	As required by NPDES Permit
	15 mg/l	
Ammonia Nitrogen (5-1 to 10-31) (11-1 to 4-30)	3.0 mg/l	As required by NPDES Permit
	7.0 mg/l	
Fecal Coliform	200 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 (Mill Creek)		
PARAMETER	LIMIT	MONITORING
Total Dissolved Solids*	1,500 mg/l	Monthly
Total Dissolved Solids Influent*	Monitor Only	Monthly
CBOD ₅ (at 20° C)	85 % minimum removal	Monthly
CBOD ₅ (at 20° C) Influent	Monitor Only	Monthly

* See DECISION Condition C.15.

Other Conditions

- 2.** 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.
- 3.** 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).
- 4.** 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).
- 5.** 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.
- 6.** 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.
- 7.** 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.
- 8.** 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.
- 9.** 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.
- 10.** 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).

11. 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, in order to ensure proper control, use and management of the water resources of the Basin.
12. 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).
13. 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*.
14. 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.
15. 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.
16. 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.
17. 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:

EXPIRATION DATE: April 30, 2025