

**DOCKET NO. D-2005-006 CP-3**

**DELAWARE RIVER BASIN COMMISSION**

**Borough of Strausstown  
Wastewater Treatment Plant  
Upper Tulpehocken Township, Berks County, Pennsylvania**

**PROCEEDINGS**

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) by Systems Design Engineering, Inc. on behalf of Borough of Strausstown (BS or docket holder) on July 22, 2013 (Application), for renewal of the docket holder's existing wastewater treatment plant (WWTP) and its discharge. National Pollutant Discharge Elimination System (NPDES) Permit No. PA0246611 for this facility was issued by the Pennsylvania Department of Environmental Protection (PADEP) on August 19, 2009, effective September 1, 2009. Renewal of the NPDES Permit is expected shortly.

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 Berks County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on September 9, 2014.

**A. DESCRIPTION**

**1. Purpose.** The purpose of this docket is to renew approval of the docket holder's existing 0.065 million gallons per day (mgd) WWTP and its discharge. The docket holder has also requested a variance to the Commission's basin-wide effluent standard of 1,000 mg/l for total dissolved solids (TDS). Commission staff have recommended a macro-invertebrate study be performed prior to acting on the requested variance (See FINDINGS Section).

**2. Location.** The WWTP will continue to discharge treated effluent to Jackson Creek at River Mile 92.47 – 76.8 – 15.4 – 0.8 – 6.5 – 0.4 (Delaware River – Schuylkill River – Tulpehocken Creek – Northkill Creek – Little Northkill Creek – Jackson Creek) via Outfall No. 001, in Upper Tulpehocken Township, Berks County, Pennsylvania as follows:

<b>OUTFALL NO.</b>	<b>LATITUDE (N)</b>	<b>LONGITUDE (W)</b>
001	40° 29' 17"	76° 10' 47"

**3. Area Served.** The docket holder's WWTP will continue to serve the Borough of Strausstown and a portion of Upper Tulpehocken Township, both in Berks 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. Physical Features.

a. Design Criteria. The docket holder will continue to operate its existing 0.065 mgd WWTP.

b. Facilities. The existing WWTP consists of a grinder/bar screen chamber, a two-chamber aerated influent equalization tank, two (2) aeration tanks [each with four (4) chambers that include chemical phosphorus removal equipment], two (2) clarifiers, an ultraviolet disinfection unit with four (4) low-pressure/high intensity lamps arranged in series mode, and a post-aeration/metering chamber.

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

Wasted sludge will continue to be hauled off-site by a licensed hauler for disposal at a state-approved facility.

c. Water withdrawals. The potable water supply in the project service area is supplied by individual on-lot wells. There is no centralized system withdrawing 100,000 gallons per day (gpd) of water as a 30-day average to supply the docket holder's service area and therefore no docket approvals are required by the Commission for the withdrawal.

d. NPDES Permit / DRBC Docket. NPDES Permit No. PA0246611 was issued by the PADEP on August 19, 2009 (effective September 1, 2009) and includes final effluent limitations for the project discharge of 0.065 mgd to surface waters classified by the PADEP as a cold water fishery (CWF). The following average monthly effluent limits are among those listed in the NPDES Permit, meet or are more stringent than the effluent requirements of the DRBC, and are expected to be in the renewed Permit.

**EFFLUENT TABLE A-1: DRBC Parameters Included in NPDES Permit**

OUTFALL 001 (WWTP)		
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 <sub>5</sub> (at 20° C)	25 mg/l (85% minimum removal)	As required by NPDES Permit
Ammonia Nitrogen (5-1 to 10-31) (11-1 to 4-30)	13 mg/l 20 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 requirement in EFFLUENT TABLE A-2 is not listed in the NPDES Permit, but is a Commission basin-wide parameter that must be monitored as a condition of this docket approval.

Commission staff have requested PADEP include this parameter in their renewed Permit. Docket No. D-2005-006 CP-2 required the docket holder to meet the Commission's basin-wide limit, which it was not able to do during the last docket cycle. As a result the docket holder is now required to monitor and report for the parameter and perform a macro-invertebrate study to determine if the discharge from Outfall No. 001 is having a negative effect on the aquatic community as a result prior to Commission staff acting on a variance request to the basin-wide standard (See DECISION Conditions II.r. and II.s.).

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

OUTFALL 001 (WWTP)		
PARAMETER	LIMIT	MONITORING
Total Dissolved Solids*	Monitor & Report	Quarterly *

\* See DECISION Condition II.p.

*PADEP has required a Phosphorous limit of 1.0 mg/l from Outfall No. 001 for the docket holder's WWTP. The DRBC does not require Phosphorous effluent limits outside of Special Protection Waters.*

- e. **Cost.** There are no construction costs associated with this WWTP renewal.
- f. **Relationship to the Comprehensive Plan.** The docket holder's 0.065 mgd WWTP was included into the Comprehensive Plan upon approval of Docket No. D-2005-6 CP-1 on May 18, 2005. Issuance of Docket No. D-2005-006 CP-2 on March 3, 2010 continued that approval and issuance of this docket will do the same (See DECISION Condition I.c.).

## B. FINDINGS

The purpose of this docket is to renew approval of the docket holder's existing 0.065 mgd WWTP and its discharge. The docket holder has also requested a variance to the Commission's basin-wide effluent standard of 1,000 mg/l for TDS.

### **Total Dissolved Solids (TDS)**

The Commission's basin-wide TDS effluent limit is 1,000 mg/l [Section 3.10.4D.2. of the Commission's *Water Quality Regulations (WQR)*]. The Commission's basin-wide in-stream TDS criteria is that 1) the receiving stream's resultant TDS concentration be less than 133% of the background (Section 3.10.3B.1.b. of the Commission's *WQR*). and 2) the receiving stream's resultant TDS concentration be less than 500 mg/l (Section 3.10.3B.2. of the Commission's *WQR*).

The 133% of the background TDS requirement is for the protection of aquatic life. The 500 mg/l TDS requirement is to protect the use of the receiving stream as a drinking water source. The EPA's Safe Drinking Water Act's secondary standard for TDS is 500 mg/l.

DRBC Docket No. D-2005-006 CP-2 was approved on March 3, 2010 and required the docket holder to meet the basin-wide effluent standard of 1,000 mg/l without first requiring the

docket holder to monitor for TDS to confirm effluent concentrations. During the docket cycle the docket holder exceeded the basin-wide standard on at least six (6) occasions. On October 18, 2013 the docket holder was issued a notice of violation (NOV) for these infractions. It was determined that the area has high TDS concentrations in its drinking water. That coupled with the TDS produced by the process to meet the docket holder's phosphorous limit imposed by the PADEP caused effluent violations for TDS. Since the Commission did not first require monitoring for TDS and because it was determined that the influent into the docket holder's WWTP was high in TDS due to drinking water in the service area Commission staff terminated the NOV and informed the docket holder that a TDS Determination would be necessary during the renewal of the docket.

As part of the Application, the docket holder requested a variance of up to 1,500 mg/l of TDS from Outfall No. 001. Neither the docket holder nor Commission staff have background data to establish an in-stream TDS concentration for Jackson Creek at/near Outfall No. 001. However, with a seven-day low flow with a recurrence interval of ten years ( $Q_{7-10}$ ) of 0.28 mgd (0.44 cfs) as established by the United States Geological Survey (USGS) Streamstats program, it can be assumed that the discharge will not meet requirement 1) above as the stream most likely does not have enough capacity to maintain a concentration less than 133% of background for the average CWF stream should effluent TDS concentrations approach 1,500 mg/l at full discharge.

The docket holder's effluent limit has been modified to a Monitor & Report until stream data can be collected and a macro-invertebrate study performed. The docket holder is therefore required to perform low flow sampling of Jackson Creek up-stream of Outfall No. 001 (between 500 and 2,000 feet) to confirm background TDS concentrations and to determine the ionic constituent breakdown of their TDS (See DECISION Conditions II.s. and II.t.).

The low flow sampling program shall consist of sampling Jackson Creek up-stream of Outfall No. 001 once per month from July 1 to September 30 in 2015, 2016, 2017, and 2018 (at least 12 samples) when flows are expected to be low. Within thirty (30) days of the renewal application submission of this docket, the data from the monitoring/sampling program shall be provided to the Commission's Project Review Section (by October 10, 2018).

DECISION Condition II.r. requires the docket holder to perform an annual ecological study (macro-invertebrate study) at three sampling locations (upstream, downstream, and at Outfall No. 001) on Jackson Creek in accordance with PADEP In-stream Comprehensive Evaluation (ICE) methods in 2015 and 2016. Flow, TDS, and conductivity samples shall be taken at these locations simultaneously so that the study can be reviewed in unison with the TDS sampling data of Jackson Creek prior to a TDS determination decision by the Commission. These reports shall be submitted with the following year's annual report (See DECISION Condition II.d.). Sampling shall occur once per year between July 15 and September 15 during targeted low-flow periods. The annual ecological study is required to support the requested variance of 1,500 mg/l of TDS from Outfall No. 001 and shall be performed in corroboration with DRBC's Modeling, Monitoring, and Assessment Branch. The annual ecological assessments will be evaluated by Commission and PADEP staff to confirm that the discharges from the docket holder's WWTP will not result in an impact to the aquatic life of the receiving

stream. The docket holder will also be required to submit this assessment to the Pennsylvania Fish and Boat Commission (PFBC).

During the next renewal, Commission staff will evaluate the results of the TDS low flow sampling program and the ecological studies. Commission staff will determine the  $Q_{7-10}$  background TDS concentration that should be used to evaluate compliance of the docket holder's discharge with the Commission's TDS requirements. Exceedance of the Commission's TDS requirements at low flows may require effluent storage during low flow conditions in the future should it be determined that the docket holder's discharge does negatively impact the aquatic community near Outfall No. 001. As such, DECISION Condition II.u. has been included in this docket requiring the docket holder to perform a Storage Optimization Plan (SOP) within three (3) years of issuance of this docket (by September 10, 2017).

### Other

The nearest surface water intake of record for public water supply is located on Tulpehocken Creek approximately 17.9 River Miles downstream of the docket holder's WWTP, and is operated by the Western Berks Water 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 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* except with respect to TDS.

## **C. DECISION**

I. Effective on the approval date for Docket No. D-2005-006 CP-3 below:

a. The project described in Docket No. D-2005-006 CP-2 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-2005-006 CP-3; and

b. Docket No. D-2005-006 CP-2 is terminated and replaced by Docket No. D-2005-006 CP-3; and

c. The project and the appurtenant facilities described in Section A "Physical Features" of this docket shall be continued in the Comprehensive Plan.

II. The project and appurtenant facilities as described in Section A "Physical Features" of this docket are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

a. Docket approval is subject to all conditions, requirements, and limitations imposed by the PADEP in its NPDES Permit, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission's.

b. The facility and operational records shall be available at all times for inspection by the DRBC.

c. The facility shall be operated at all times to comply with the requirements of the Commission's *WQR*.

d. The docket holder shall comply with the requirements contained in the EFFLUENT TABLES in Section A.4.d. of this docket. The docket holder shall submit the required monitoring results electronically to the DRBC Project Review Section via email [aemr@drbc.state.nj.us](mailto: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/application/index.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..

e. 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*.

f. 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.

g. 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.

h. The docket holder is permitted to treat and discharge wastewaters 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.

i. 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.

j. 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).

k. Nothing in this docket approval shall be construed as limiting the authority of DRBC to adopt and apply charges or other fees to this discharge or project.

l. 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.

m. Unless an extension is requested and approved by the Commission in advance, in accordance with paragraph 11 of the Commission's Project Review Fee schedule (Resolution No. 2009-2), the docket holder is responsible for timely submittal of a docket renewal application on the appropriate DRBC application form at least 12 months in advance of the docket expiration date set forth below. The docket holder will be subject to late charges 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 (or the later date established by an extension that has been timely requested and approved), 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.

n. 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.

o. 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.

p. 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.

q. 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.

r. An annual ecological study on Jackson Creek shall be performed and results submitted to the DRBC, PFBC, and PADEP in accordance with the FINDINGS Section of this docket. The docket holder will coordinate with DRBC staff as described in the

FINDINGS Section prior to conducting the study. The study will be required to include multiple stations, with replicates, upstream and downstream of Outfall No. 001 between July 15 and September 15 in 2015 and 2016. The study shall be submitted by January 31 of the following year.

s. The docket holder shall submit the results of the low flow sampling program to the Commission's Project Review Section by October 10, 2018. The low flow sampling program shall consist of sampling Jackson Creek upstream of Outfall No. 001 as described in the FINDINGS Section of this docket.

t. Within two (2) years of approval of this docket a complete ionic constituent breakdown shall be submitted to the DRBC Project Review Section (by September 10, 2016).

u. The docket holder shall perform a SOP within three (3) years of issuance of this docket (by September 10, 2017) to analyze available storage on-site for future use if it is determined that such measures are necessary during low flow to ensure water quality is met downstream.

**BY THE COMMISSION**

**DATE APPROVED: September 10, 2014**

**EXPIRATION DATE: August 31, 2019**