

Delaware River Basin Commission

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Project Review

NOTICE OF COMMISSION ACTION

Date: December 14, 2016

Docket No. D-1977-087 CP-4

Project Sponsor: Kent County Levy Court
Attention: Michael J. Petit de Mange, County Administrator
555 Bay Road
Dover, Delaware 19901

Kent County Department of Public Works
Attention: James Newton, Environmental Program Manager
139 Milford Neck Road
Milford, Delaware 19963

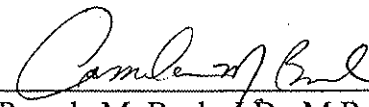
Project Description: Kent County Levy Court
Kent County Regional Wastewater Treatment Plant Expansion
Kent County, Delaware

Action by Commission:

This action is incorporated in the Commission's *Comprehensive Plan* for the Delaware River Basin and approved pursuant to Section 3.8 of the *Delaware River Basin Compact*. See docket for terms and conditions.

Explanatory Note:

This action has been taken by the Commission in accordance with its responsibilities under Sections 3.8, 11.1 and 11.2 of the *Delaware River Basin Compact*. The Commission maintains a comprehensive water resources plan for the Delaware River Basin and reviews water resources projects proposed by other public and private agencies. Review of projects enables the Commission to prevent conflicts among water users and to protect the integrity of the *Comprehensive Plan*.



Pamela M. Bush, J.D., M.R.P.
Commission Secretary/Assistant General Counsel

DOCKET NO. D-1977-087 CP-4

DELAWARE RIVER BASIN COMMISSION

**Kent County Levy Court
Kent County Regional Wastewater Treatment Plant Expansion
Kent County, Delaware**

PROCEEDINGS

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) by Kent County Levy Court (docket holder) on July 11, 2016 (Application), for review of a wastewater treatment plant (WWTP) upgrade and expansion. The State of Delaware Department of Natural Resources & Environmental Control (DNREC) issued draft National Pollutant Discharge Elimination System (NPDES) Permit No. DE0020338 for the project discharge on August 31, 2016.

The Application was reviewed for inclusion of the project in the Comprehensive Plan and approval under Section 3.8 of the *Delaware River Basin Compact*. The Kent County Planning Division has been notified of pending action. A public hearing on this project was held by the DRBC on November 9, 2016.

A. DESCRIPTION

- Purpose.** The purpose of this docket is to approve an upgrade and expansion to the docket holder's existing WWTP. The upgrade consists of the addition of two (2) new secondary clarifiers and tertiary filtration, along with improvements to the existing influent screening, secondary clarifiers, biological nutrient removal (BNR) treatment system blowers, ultraviolet light (UV) disinfection system, generators, and appurtenant structures and facilities. The project upgrade includes an expansion of the WWTP from 16.3 million gallons per day (mgd) to 20.0 mgd.
- Location.** The project WWTP is located approximately 3,000 feet northeast of the intersection of U.S. Route 113 and Route 120 in the unincorporated area of Kent County, Delaware, approximately 1.5 miles southeast of the Town of Frederica. The WWTP will continue to discharge treated wastewater to The Gut, which is a tidal tributary to the Murderkill River, itself a tidal tributary to the Delaware River Water Quality Zone 6 at River Mile 23.0 – 6.4 – 0.8 (Delaware River – Murderkill River – the Gut).

The project outfall is located in the Murderkill River Watershed as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001	38° 59' 37.0	75° 26' 14.4"

3. **Area Served.** The docket holder's existing WWTP will continue to receive domestic, commercial, and industrial wastewater flows from users in Kent County, southern portions of New Castle County, and portions of Sussex County in and near Milford.

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 existing WWTP will continue to utilize an extended aeration BNR treatment system with UV disinfection. The upgrades are proposed in order to expand the capacity of the WWTP from 16.3 mgd to 20.0 mgd and to increase the treatment capability of the WWTP to meet total maximum daily loads (TMDLs) imposed by DNREC in their NPDES permit.

b. **Facilities.** The existing WWTP facilities consist of influent screening, four (4) grit chambers, two (2) 10-million gallon extended aeration basins containing the BNR system, four (4) secondary clarifiers, and UV disinfection. Sludge handling consists of four (4) sludge holding tanks, a four-million gallon sludge lagoon, and belt filter presses.

The proposed upgrade consists of adding a manual bar screen and improvements to the existing influent screening, improvements to the air blowers in the extended aeration BNRs, adding two (2) new 120-foot diameter secondary clarifiers, adding an eight-cell downflow tertiary filter with chemical precipitation for phosphorous removal, replacing the mechanisms of two (2) of the four (4) existing secondary clarifiers, adding 16 new UV modules to the existing UV disinfection system, improvements to the backup power system (generators), and appurtenant improvements.

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

Dried bio solids generated at the facility are land applied to various County-owned farms.

c. **Water withdrawals.** The potable water supply in the project service area is provided by a number of utilities, including the City of Dover, the City of Milford, the Town of Smyrna and the Camden-Wyoming Water and Sewer Authority. The City of Dover groundwater withdrawal is described in detail in DRBC Docket No. D-2001-043 CP-1, which was approved on February 6, 2002. The City of Milford groundwater withdrawal is described in DRBC Docket No. D-1995-044 CP-1, approved on January 24, 1996. The Town of Smyrna groundwater withdrawal is described in DRBC Docket No. D-1993-072 CP-2, approved on September 27, 2006. The Camden-Wyoming Water and Sewer Authority groundwater withdrawal is described in DRBC Docket No. D-1997-030 CP-1, approved on May 27, 1998.

d. **NPDES Permit / DRBC Docket.** Draft NPDES Permit No. DE0020338, issued by the DNREC on August 31, 2016, includes effluent limitations for the project discharge to surface waters that are tidal, and can be either fresh or salt water in the vicinity of the discharge, in Delaware River Zone 6. The following average monthly effluent limits listed in EFFLUENT TABLE A-1, based on a flow of 20.0 mgd, are among those listed in the NPDES permit and meet or are more stringent than the effluent requirements of the DRBC.

EFFLUENT TABLE A-1: DRBC parameters included in NPDES permit

Outfall 001 (Discharge to Water Quality Zone 6)		
PARAMETER	LIMIT	MONITORING
pH (Standard Units)	6 to 9 at all times	As required by NPDES permit
Total Suspended Solids	15 mg/l	As required by NPDES permit
CBOD (5-Day at 20° C) 5/1 – 9/30	544 lbs/day	As required by NPDES permit
CBOD (5-Day at 20° C)	85% minimum removal	As required by NPDES permit
Enterococcus*	33 colonies per 100 ml	As required by NPDES permit
Total Nitrogen	Moving 12-month load of 327,405 pounds	As required by NPDES permit
Chronic Toxicity	Monitor & Report	As required by NPDES permit
PCBs**	Monitor & Report	As required by NPDES permit

* See *DRBC Effluent Quality Requirements* in the FINDINGS section

** See FINDINGS section and Condition II.w. in the DECISION Section

The requirements in EFFLUENT TABLE A-2 are not listed in the NPDES Permit, but are Commission basin-wide parameters that must be met as a condition of this docket approval.

EFFLUENT TABLE A-2: DRBC parameters not included in NPDES permit

Outfall 001 (Discharge to Water Quality Zone 6)		
PARAMETER	LIMIT	MONITORING
Ammonia Nitrogen	35 mg/l	Monthly
CBOD (5-Day at 20° C) Influent	Monitor & Report	Monthly

e. **Cost.** The overall cost of this project is estimated to be \$30,804,276.00.

f. **Relationship to the Comprehensive Plan.** The Kent County Levy Court WWTP was included in the DRBC Comprehensive Plan by Docket No. D-1967-073 CP-1 on June 23, 1967. The project WWTP was continued/modified via Docket Nos. D-1967-073 CP (Phase 1), D-1967-073 CP (Phase II), D-1977-087 CP-1, D-1977-087 CP-2, and D-1977-087 CP-3, on May 21, 1970, May 27, 1971; August 11, 1983; July 18, 2007, and July 11, 2012, respectively.

B. FINDINGS

This docket holder submitted an Application to upgrade and expand the Kent County Levy Court WWTP from 16.3 mgd to 20.0 mgd. The upgrade consists of the addition of two (2) new secondary clarifiers and tertiary filtration, along with improvements to the existing influent

screening, secondary clarifiers, biological nutrient removal (BNR) treatment system blowers, ultraviolet light (UV) disinfection system, generators, and appurtenant structures and facilities.

DRBC Effluent Quality Requirements

Section 4.30.4 of the Commission's *Water Quality Regulations (WQR)* contains the effluent quality requirement to provide effective disinfection. Effective disinfection is defined by the WQR as fecal coliform not exceeding 200 colonies per 100 milliliters as a geometric average (Section 4.30.4.); however, DRBC accepts other indicator organism methods such as analysis for Enterococcus or *E. coli* of demonstrating effective disinfection. Demonstration of compliance with DRBC's basin-wide Fecal Coliform effluent limit of 200 colonies per 100 mL can be achieved by the WWTP meeting the Enterococcus effluent limit of 33 colonies per 100 mL contained in draft NPDES Permit No. DE0020338 for the WWTP.

Total Dissolved Solids

Water Quality Zone 6 stream quality objectives do not explicitly include Total Dissolved Solids (TDS). As a consequence, the Basinwide TDS requirements are not always applied in Zone 6. The Commission reserves the right, in accordance with the WQR and the *Rules of Practice and Procedure*, to apply the Basinwide TDS requirements in Zone 6 when and where it determines that the requirements are necessary to protect water uses in Zone 6.

PCBs

The docket holder is required to monitor for 209 PCB congeners using Method 1668A two (2) times per year during dry weather at Outfall No. 001 and implement Pollution Minimization Plans (PMPs) for PCBs as required in the NPDES Permit.

There are no public water supply intakes downstream of the project discharge.

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 *WQR* of the DRBC.

C. DECISION

I. Effective on the approval date for Docket No. D-1977-087 CP-4 below:

a. The project described in Docket No. D-1977-087 CP-3 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-1977-087 CP-4; and

b. Docket No. D-1977-087 CP-3 is terminated and replaced by Docket No. D-1977-087 CP-4.

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

II. The project and appurtenant facilities as described in the Section A "Physical features" of this docket entitled "Physical features" above 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 DNREC in its NPDES permit and construction permit, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission's. Commission approval of this docket is contingent on the DNREC's approval of the construction permit.

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 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 discharge of wastewater shall not increase the ambient temperatures of the receiving waters by more than 4°F (2.2°C) from September to May and 1.5°F (0.8°C) from June to August, nor shall such discharge result in stream temperatures exceeding 85°F (29.4°C).

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

j. 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.

k. 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; (2) report the project's final construction cost as such cost is defined by the project review fee schedule in effect at the time the application was made; and (3) indicate the date on which the project was (or is to be) placed in operation. In the event that the final project cost exceeds the estimated cost used by the docket holder to calculate the DRBC project review fee, the statement must also include (4) the amount of any outstanding balance owed for DRBC review. The outstanding balance will equal the difference between the fee paid to the Commission and the fee calculated on the basis of the project's final cost, using the formula and definition of "project cost" set forth in the DRBC's project review fee schedule in effect at the time application was made.

l. The WWTP modifications shall be completed within three years of approval of this docket or the docket holder shall demonstrate to the Executive Director that it has expended substantial funds (in relation to the cost of the project) in reliance upon this docket approval. If the modifications have not been completed within three years of Docket Approval and the docket holder does not submit a cost analysis demonstrating substantial funds have been expended, Commission approval of the modifications to the existing WWTP shall expire. If this approval expires under this condition, the docket holder shall file a new application with the Commission and receive Commission approval prior to initiating construction of any modifications.

m. 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.

n. The docket holder shall make wastewater discharge in such a manner as to avoid injury or damage to fish or wildlife and shall avoid any injury to public or private property.

o. 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).

p. 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.

q. 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.

r. Unless the docket holder requests an application submittal extension, and the extension is 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.

s. 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.

t. 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.

u. 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.

v. The docket holder shall continue to submit PCB monitoring data and PMP Annual Reports to the Commission's Modeling, Monitoring and Assessment Branch as required in the NPDES Permit.

BY THE COMMISSION

DATE APPROVED: December 14, 2016

EXPIRATION DATE: December 14, 2021