

DOCKET NO. D-1988-054-7

DELAWARE RIVER BASIN COMMISSION

**Waste Management Disposal Services of Pennsylvania, Inc.
Landfill Leachate Treatment Plant
Falls Township, Bucks County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) by Brown and Caldwell (B&C) on behalf of Waste Management Disposal Services of Pennsylvania, Inc. (WM or docket holder) on October 31, 2014 (Application), for renewal of the docket holder's existing GROWS Landfill leachate treatment plant (LTP) and its discharge. National Pollutant Discharge Elimination System (NPDES) Permit No. PA0043818 for this facility was issued by the Pennsylvania Department of Environmental Protection (PADEP) on October 18, 2010, effective November 1, 2010. Renewal of the NPDES Permit is expected shortly.

The Application was reviewed for 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 September 15, 2015.

A. DESCRIPTION

- 1. Purpose.** The purpose of this docket is to renew approval of the docket holder's existing 0.3 million gallons per day (mgd) LTP and its discharge.
- 2. Location.** The LTP will continue to discharge treated effluent to Water Quality Zone 2 of the tidal Delaware River at River Mile 125.6 via Outfall No. 001, in Falls Township, Bucks County, Pennsylvania as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001	40° 07' 58.4"	74° 45' 57.4"

- 3. Area Served.** The docket holder's LTP will continue to serve the Tullytown Landfill, GROWS Landfill, the GROWS North Landfill, and the proposed Fairless Landfill that is to open in 2016. These landfills are located in Falls Township, Bucks County, Pennsylvania. In addition, non-hazardous waste liquids and sludges that are approved by PADEP are disposed of at the landfills. Some of this waste stream originates from municipalities that are located outside of the Delaware River Basin. 100 percent removal of the loading associated with these truck-transported out of basin waste streams is required to be removed at the LTP. The landfills receives wastes from:

- a. In-basin wastes: residential and commercial refuse; incinerator ash and PADEP-approved specialty wastes; plus municipal and private sewage treatment plant sludge.
- b. Out-of-basin wastes: residential and commercial refuse; incinerator ash and PADEP-approved specialty wastes; plus municipal and private sewage treatment plant sludge.

For the purpose of defining the Area Served, Section B (Type of Discharge) and D (Service Area) of the docket holder's Application are also 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 0.3 mgd LTP.

b. **Facilities.** The LTP consists of a grit chamber two (2) storage tanks, a primary solids clarifier, a sequencing batch reactor (SBR), a decant storage tank, two (2) dissolved air flotation unit, a multi-media filtration unit, a cartridge filter, a reverse osmosis (RO) unit, an evaporator, a crystallizer, a plate and frame filter press, a sludge storage tank, and a centrifuge.

Hazardous leachate at the site has similar characteristics as non-hazardous leachate and will continue to be treated by a smaller Hazardous Leachate Treatment Plant (HLTP) which consists of a feed tank, an SBR, an effluent equalization tank, a sludge storage tank, and a plate and frame filter press. The hazardous waste flow will continue to address RCRA considerations and contain sludge management restrictions set forth in that review. The flow from the HLTP will be monitored prior to its combining with the flow from the LTP.

A portion of the treated effluent is conveyed to the Municipal Authority of the Borough of Morrisville (MBMA) wastewater treatment plant (WWTP) following pre-treatment by the docket holder via a pump station. MBMA is currently performing pilot testing to determine if the WWTP can accept more than 0.06 mgd without causing plant upsets and/or effluent violations.

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 at the Tullytown and GROWS landfills is bottled water that is obtained from commercial sources. At GROWS landfill, water for sanitary use is provided by on-site wells, which have a collective yield that is less than DRBC project review thresholds. Both landfills use water for industrial purposes, such as on-site dust control and maintenance purposes. This water is obtained from Manor Lake and the docket holder has approval to withdrawal this water in accordance with Docket No. D-1991-090-2, which was approved by the Commission on September 15, 2010.

d. **NPDES Permit / DRBC Docket.** NPDES Permit No. PA0043818 was issued by the PADEP on October 18, 2010 (effective November 1, 2010) and includes final effluent limitations for the project discharge of 0.3 mgd to surface waters classified by the PADEP as warm water, migratory fisheries (WWF/MF). Renewal of the NPDES Permit is expected shortly. The following average monthly effluent limits are among those listed in the existing NPDES Permit, are expected to be renewed, 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 (LTP & HLTP)		
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
BOD (5-Day at 20° C)	30 mg/l, 95% Minimum Removal	As required by NPDES Permit
Ammonia Nitrogen	4.9 mg/l	As required by NPDES Permit
Fecal Coliform	200 colonies per 100 ml as a geo. avg.	As required by NPDES Permit
Total Dissolved Solids*	15,000 mg/l (monthly average) 20,000 mg/l (daily max.)	As required by NPDES Permit
True Color (Pt-Co)	750 units (Instantaneous Maximum)	As required by NPDES Permit
Toxicity (Chronic and Acute)	Monitor & Report	As required by NPDES Permit
PCBs	Monitor & Report	As required by NPDES Permit

* See DECISION Condition II.o.

The parameter in EFFLUENT TABLE A-2 is listed in the existing NPDES Permit, but does not have the same limit that appeared in Docket No. D-1988-054-6, and Commission staff have requested PADEP adjust this parameter in their renewed Permit (See DECISION Condition II.e.).

EFFLUENT TABLE A-2: DRBC Parameter to be Adjusted in NPDES Permit

OUTFALL 001 (LTP & HLTP)		
PARAMETER	LIMIT	MONITORING
CBOD ₂₀	42 lbs/day	Monthly

e. **Cost.** There are no construction costs associated with this LTP renewal.

B. FINDINGS

The purpose of this docket is to renew approval of the docket holder's existing 0.3 mgd LTP and its discharge.

CBOD₂₀ Wasteload Allocation

The Commission's *Water Quality Regulations (WQR)* provide for the allocation of the stream assimilative capacity where waste discharges would otherwise result in exceeding such

capacity. It was determined in the late 1960's that discharges to the Delaware Estuary be limited to a total of 322,000 lbs/day of carbonaceous biochemical (first stage) oxygen demand (CBOD₂₀). In accordance with the Regulations, the assimilative capacity of each Delaware Estuary zone minus a reserve was originally allocated in 1968 among the individual dischargers based upon the concept of uniform reduction of raw waste in a zone (Zones 2, 3, 4 and 5). The totals and percent reduction for each zone are given in Table 1 of the Commission's *Status of CBOD₂₀ Wasteload Allocations* (Revised October 1, 2000). The docket holder's LTP will continue to discharge treated effluent to Water Quality Zone 2 of the tidal Delaware River at River Mile 125.6. Water Quality Zone 2 is currently over allocated.

CBOD₂₀ Allocation History

A letter from the Executive Director on August 12, 1983 approved an allocation of 31 lbs/day of CBOD₂₀.

Docket No. D-88-54 approved an allocation of 61 lbs/day (10-1 to 5-31) and 31 lbs/day (6-1 to 9-30) of CBOD₂₀ (50 mg/l of BOD₅) on September 28, 1988.

Dockets Nos. D-88-54-2 and D-88-54-3 approved an allocation of 62 lbs/day of CBOD₂₀ (53 mg/l of BOD₅) on January 19, 2005 and September 27, 2006, respectively.

Docket No. D-88-54-4 approved an allocation of 30 lbs/day of CBOD₂₀ on March 11, 2009.

Docket Nos. D-88-54-5 and D-1988-054-6 approved an allocation of 42 lbs/day of CBOD₂₀ on July 15, 2009 and March 2, 2011, respectively.

CBOD₂₀ Determination

DMR data submitted by the docket holder continues to support the allocation of 42 lbs/day CBOD₂₀ for the existing LTP.

Total Dissolved Solids (TDS)

The Commission's basin-wide TDS effluent limit is 1,000 mg/l (Section 3.10.4.D.2. of the Commission's *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 3.10.3.B.1.b. of the Commission's *WQR*), and 2) the receiving stream's resultant TDS concentration be less than 500 mg/l (Section 3.10.3.B.1.c. 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.

Docket Application No. D-88-54-5 requested an average monthly and daily maximum TDS effluent concentration of 15,000 mg/l and 20,000 mg/l, respectively. Subsequent modeling

work was performed to evaluate the requested TDS effluent limits. A separate report was submitted to the Commission via email on June 26, 2009. The report focused on the required mixing zone dimensions to meet the 133 % of the background TDS concentration under the proposed diffuser design condition. The background TDS concentration in Zone 2 is defined as 200 mg/l in the Commission's *WQR*. Consequently, 133 % of the background TDS concentration is 266 mg/l. With a daily maximum TDS effluent concentration of 20,000 mg/L, a dilution factor of 300 to 1 is required to meet the 266 mg/l ambient water concentration. A CORMIX model simulation demonstrates that a dilution factor of 300 to 1 can be obtained at the edge of a 30 meter radius mixing zone from the diffuser.

The docket holder's multiport diffuser consists of 5 ports, each sized with a 1 inch diameter. The diffuser is 8 meters in total length and each port is 2 meters apart.

The 20,000 mg/l daily maximum TDS effluent limit results in an in-stream TDS concentration of 202.5 mg/l (1.3% increase). The increase in TDS is well below the allowable 33% and the in-stream concentration of 202.5 mg/l is well below the 500 mg/l standard. Accordingly, this docket continues approval of the requested TDS effluent limitations at Outfall 001.

PCBs

The docket holder shall monitor for PCBs twice per year as required in their NPDES permit (See DECISION Condition II.q.).

Color

Section 4.30.5.A of the Commission's *WQR* requires a monthly average color effluent limitation of 100 units on the platinum cobalt scale or its equivalent unless natural color of the receiving stream is higher. Section 4.30.5.A.2.c. allows for a true color effluent limitation greater than 100 if it is demonstrated that :

- 1) the maximum practicable treatment will be provided, and
- 2) rapid dispersion will take place, and
- 3) the natural color characteristics of the receiving waters will be protected

Background color in the Delaware River at the Outfall for the LTP was estimated to be 20 units on the platinum cobalt scale. With the new diffuser in place, WM concluded that an effluent limit of 2,000 units on the platinum cobalt scale would result in complete mixing of color within 15 meters of the outfall diffuser during Q7-10 conditions (*see* B&C Report of May 19, 2010). An effluent color limit of 750 units on the platinum cobalt scale, achievable through use of both ozone and granular activated carbon (GAC), would require a smaller mixing zone. Because the effluent is negatively buoyant and will tend to remain at the bottom of the river at a depth of about 20 feet during Q7-10 conditions, Commission staff are of the view that the natural color characteristics of the river will be protected with a 750 unit on the platinum cobalt scale effluent color limit as required by section 4.30.5.A.2.c.3) of the Commission's *WQR*.

DECISION Condition II.aa. of Docket No. D-88-54-5 granted the Executive Director the authority to approve or deny a variance from the Commission's basin-wide effluent color limit of 100 units on the platinum cobalt scale. On the basis of the information provided by WM, the Executive Director issued a Color Determination letter on August 16, 2010 requiring WM to install ozone in addition to GAC in order to meet an effluent color limit of 750 units on the platinum cobalt scale as such a limit was determined to meet Section 4.30.5.A of the Commission's *WQR*. After further discussion with WM and the review of additional information submitted by WM, the Commission staff agreed that WM could install a reverse osmosis (RO) unit to meet the color limit of 750 units on the platinum cobalt scale. WM has installed the RO unit.

Other

At Outfall No. 001, the Delaware River is tidal and its flow is regulated by upstream reservoir releases. The Trenton low flow target is 2,500 cfs (1.62 billion gallons per day). The addition of the tidal tributaries upstream of the discharge location at their Q₇₋₁₀ flow and the low flow Trenton target results in an overall Q₇₋₁₀ of approximately 2,634 cfs (1.702 billion gallons per day) for the Delaware River at River Mile 125.6. The ratio of this low flow to the hydraulic design wastewater discharge from the docket holder's 0.3 mgd LTP is 5,673 to 1.

The nearest surface water intake of record for public water supply within a 5 mile tidal influence of the docket holder's LTP is located on the Delaware River approximately 3.3 River Miles away and is operated by the Lower Bucks County Joint Municipal 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*.

C. DECISION

I. Effective on the approval date for Docket No. D-1988-054-7 below, Docket No. D-1988-054-6 is terminated and replaced by Docket No. D-1988-054-7.

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 maintain and make available to DRBC upon request, records identifying the sources, volumes and characteristics of all wastewaters and sludges treated at the LTP, as well as the dates when off-site wastes were received and treated. Records are to be retained for 5 years.

e. 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.

f. 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*.

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. 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.

k. 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.

l. 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.

m. 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.

n. 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.

o. 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.

p. 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.

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

BY THE COMMISSION

DATE APPROVED: September 16, 2015

EXPIRATION DATE: October 31, 2020