

DOCKET NO. D-1988-054-8

DELAWARE RIVER BASIN COMMISSION

**Waste Management of Fairless LLC
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) on date October 30, 2019 (Application) for renewal of the docket holder's existing Leachate Treatment Plant (LTP) and its discharge to surface water. The discharge is permitted by the Pennsylvania Department of Environmental Protection (PADEP) in National Pollutant Discharge Elimination System (NPDES) Permit No. PA0043818.

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 February 10, 2021.

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:

Specific location information has been withheld for security reasons.

3. **Area Served.** The docket holder's LTP will continue to serve only Waste Management's Fairless Landfill Complex in Falls Township, Bucks County, Pennsylvania. These landfills include: Tullytown Resource Recovery Facility (TRRF), GROWS, GROWS North and Fairless Landfills. Non-hazardous waste 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. The landfills accept:

- 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.

In accordance with Section 2.30.6 of the Commission's Water Code, the docket holder is not credited with meeting wastewater treatment requirements for wastewater imported into the Delaware River Basin. The wasteload allocations assigned by this approval do not include loadings attributable to any importation of wastewater.

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 Section C. DECISION of this docket.

4. **Design Criteria.** The docket holder will continue to operate its existing 0.3 mgd LTP.

5. **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 docket holder's treated effluent (up to a maximum of 0.12 mgd) is conveyed via a pump station to the Municipal Authority of the Borough of Morrisville (MBMA) wastewater treatment plant (WWTP) following pre-treatment by the docket holder. The MBMA WWTP and the conditions under which treated effluent may be accepted are described in detail in Docket No. D-1987-008 CP-4.

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

Wasted sludge will continue to be handled in accordance with NPDES Permit No. PA0043818.

6. **Water withdrawals.** The potable water supply of the landfill complex is bottled water that is obtained from commercial sources. Water for sanitary use is provided by on-site wells, which have a collective withdrawal that is less than DRBC project review thresholds and does not require DRBC approval. 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-1991-090-3, which was approved by the Commission on June 10, 2020.

7. **NPDES Permit / DRBC Docket.** NPDES Permit No. PA0043818 issued by the PADEP includes final effluent limitations for the project discharge of 0.3 mgd to surface waters designated by the PADEP as supporting warm water fishes (WWF) and migratory fishes (MF).

EFFLUENT TABLES C-1 and C-2 included in Section C. DECISION Condition C.1. contains 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 0.3 mgd where applicable.

8. Relationship to the Comprehensive Plan. A portion of the docket holder's treated effluent is conveyed to the MBMA WWTP following pre-treatment by the docket holder. The MBMA WWTP and the conditions under which treated effluent may be accepted are described in detail in Docket No. D-1987-008 CP-4. The MBMA WWTP is included the Comprehensive Plan.

B. FINDINGS

The docket holder submitted an application to renew approval of their existing 0.3 mgd LTP and its discharge.

1. 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 remains over allocated.

1.2 CBOD₂₀ Allocation History

Docket 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 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 D-88-54-4 approved an allocation of 30 lbs/day of CBOD₂₀ on March 11, 2009.

Docket Nos. D-88-54-5, D-1988-054-6, and D-1988-054-7 approved an allocation of 42 lbs/day of CBOD₂₀ on July 15, 2009, March 2, 2011, and September 16, 2016, respectively.

1.3 CBOD₂₀ Determination

To more consistently manage the facilities treatment of raw leachate influent which exhibits day-to-day variability in BOD concentrations, the docket holder has requested a reinstatement of the previously approved CBOD₂₀ waste load allocation of 62 lbs./day. This aligns with the historical CBOD₂₀ allocation of 62 lbs./day previously assigned in Dockets D-88-54-2 and D-88-54-3. This equivalent 44.3 lbs./day BOD₅ load allocation requires the treatment facility to achieve a removal rate of 97% under average operating conditions which is greater than the required removal rate of 95% in Section C. DECISION Condition C.1. EFFLUENT TABLE C-1. It remains protective of water quality and will not increase the total waste load allocation initially assigned to DRBC Water Quality Zone 2. The treatment plant regularly demonstrates treatment efficiencies of 99 percent removal of BOD₅. Furthermore, the facility expanded from 0.1 mgd to 0.3 mgd in 2013 with no associated increase in the approved waste load allocation. This docket reinstates the previously approved allocation of 62 lbs/day CBOD₂₀ for the existing LTP. The DRBC 20-day Carbonaceous Biochemical (first-stage) Oxygen Demand (CBOD₂₀) wasteload allocation of 62 pounds per day as a monthly average value (equivalent to the monthly average BOD₅ mass effluent limit in Section C. DECISION Condition C.1. EFFLUENT TABLE C-1) shall not be exceeded. The CBOD₂₀ effluent value may be calculated by multiplying the measured effluent BOD₅ by a CBOD₂₀/BOD₅ mass ratio of 1.4 developed for this discharge.

2. Total Dissolved Solids (TDS)

The Commission's Stream Quality Objective Limits for TDS are that as a result of discharges: 1) the receiving stream's resultant TDS concentration shall not exceed 133% of the background and 2) the receiving stream shall not contain substances in concentrations that preclude the specified water uses to be protected (WQR Section 3.10.3.B.1.). As TDS concentrations in excess of 500 mg/l may preclude use of Water Quality Zone 2 as a drinking water source, TDS concentrations should not exceed 500 mg/l in Zone 2. 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 five, 2.54 centimeter (cm) diameter, ports. The diffuser is 8 meters in length and each port is spaced 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.

3. PCBs

The docket holder shall monitor for PCBs twice per year as required in their NPDES permit (See Section C. DECISION Condition C.3.).

4. 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, the docket holder 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 were 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*.

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 the docket holder, the Executive Director issued a Color Determination letter on August 16, 2010 requiring the installation of ozone in addition to GAC 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*. It was determined that a reverse osmosis (RO) unit would serve better to meet the color limit of 750 units on the platinum cobalt scale and the docket holder installed the RO unit.

4. Other Findings

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 Q_{7-10} flow and the low flow Trenton target results in an overall Q_{7-10} 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 conform 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-1988-054-8 below, Docket No. D-1988-054-7 is terminated and replaced by Docket No. 1988-054-8. 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 (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) Influent	Monitor & Report	As required by NPDES Permit
BOD (5-Day at 20° C) Effluent	44.3 lbs per day, 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
Whole Effluent Toxicity (Chronic and Acute)	Monitor & Report	As required by NPDES Permit

* See Section C. DECISION Condition C.6.

EFFLUENT TABLE C-2: DRBC Parameters not included in NPDES Permit

OUTFALL 001 (LTP & HLTP)		
PARAMETER	LIMIT	MONITORING
Gross Alpha (pCi/L)	Monitor & Report	Monthly

2. 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.

3. The docket holder shall continue to submit Polychlorinated Biphenyl (PCB) monitoring data and PMP Annual Reports to the Commission's Science & Water Quality Management Branch as required in NPDES Permit No. PA0043818.

4. 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.

Other Conditions

5. 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*.

6. 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.

7. 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.

8. 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.

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

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

11. 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 addition flow expansions shall be permitted until the deficiency is remedied.

12. 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.

13. 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.

14. 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.

15. 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).

16. 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).

17. 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).

18. 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.

19. 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.

20. 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: March 10, 2021

EXPIRATION DATE: March 10, 2026