DOCKET NO. D-1994-030-4

DELAWARE RIVER BASIN COMMISSION

The Boeing Company
Industrial Wastewater Treatment Plant & Cooling Tower Blowdown Discharge
Ridley Township, Delaware County, Pennsylvania

PROCEEDINGS

This docket is issued in response to an application submitted to the Delaware River Basin Commission (DRBC or Commission) on April 10, 2024 (Application), for renewal of the docket holder's existing industrial wastewater treatment plant (IWTP) and its discharge. The Pennsylvania Department of Environmental Protection (PADEP) issued National Pollutant Discharge Elimination System (NPDES) Permit No. PA0013323 A-1 for this discharge.

The application was reviewed for approval under Section 3.8 of the *Delaware River Basin Compact*. The Delaware County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on February 5, 2025.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to renew approval of the docket holder's existing 0.05 million gallons per day (mgd) IWTP and its discharge of treated industrial wastewater effluent along with cooler tower blowdown. This docket also continues a total dissolved solids (TDS) determination for the docket holder's discharge consisting of an average monthly effluent concentration limit of 2,000 mg/l and a daily maximum effluent concentration limit of 2,500 mg/l.

2. Location. The docket holder's headquarters, aircraft manufacturing facility, and IWTP are located at Stewart Avenue and Pennsylvania Route 291 in Ridley Township, Delaware County, Pennsylvania. The facility monitors treated industrial wastewater effluent from its IWTP at Monitoring Point No. 101 (MP 101) prior to combining the treated effluent with cooling tower blowdown and stormwater followed by discharge via existing Outfall No. 001 to Crum Creek, which is a tidal tributary of the Delaware River Water Quality Zone 4 at River Mile 84.9 – 0.5 (Delaware River – Crum Creek).

The location of the IWTP outfall in the Crum Creek Watershed is as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001	31° 51' 51"	75° 19' 32"

3. **Area Served**. The docket holder's IWTP will continue to serve its aircraft manufacturing facility located in Ridley Township, Delaware County, Pennsylvania. For the purpose of defining the Area Served, the Type of Discharge and the Service Area sections from the docket holder's Application are 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's 0.05 mgd IWTP treats industrial process wastewater generated by fabrication, electroplating, cleaning, and finishing operations at the facility. The IWTP utilizes oil/water gravity separation, ferrous sulfate addition for hexavalent chromium reduction, lime and hydrochloric acid addition for pH adjustment, and polymer addition for flocculation and solids settling. Treated IWTP effluent is batch discharged to MP 101 and then combined with approximately 0.037 mgd of cooling tower blowdown from on-site cooling towers for a process wastewater and cooling tower blowdown flow rate of 0.087 mgd. This flow is combined with stormwater generated on-site prior to discharge via Outfall No. 001 to the tidal portion of Crum Creek, in Delaware River Water Quality Zone 4.

5. **Facilities**. The IWTP facilities consist of an oil/water separator, three 50,000 gallon chromic acid alkaline (CAA) treatment tanks, a chemical feed system, and two pH adjustment tanks. Sludge is thickened in a sludge holding tank and then dewatered in a filter press. Additionally, two holding tanks are designated for alkaline (soapy) wastewater to accumulate this type of wastewater until a tanker full volume is met. Then this soapy wastewater is shipped offsite for treatment/disposal.

Wasted sludge will continue to be hauled off-site for disposal in accordance with the NPDES Permit No. PA0013323 A-1.

6. **Water Withdrawals**. The potable water supply in the project service area is provided by Aqua, Pennsylvania, as described in detail in DRBC Docket No. D-1985-029 CP-2 approved on August 10, 2022.

7. **NPDES Permit / DRBC Effluent Requirements**. NPDES Permit No. PA0013323 A-1 issued by the PADEP includes final effluent limitations for the project discharge to surface waters classified by the PADEP as supporting warm water fishes (WWF). EFFLUENT TABLES C-1 & C-2 included in Section C. DECISION condition C.1. of this docket, contain effluent requirements for DRBC parameters that must be met as a condition of this approval. Effluent requirements for MP 101 (IWTP effluent) are based on a discharge rate of 0.05 mgd. Effluent requirements for Outfall No. 001 (IWTP and cooling tower blowdown discharge) are based on a discharge rate of 0.087 mgd.

B. FINDINGS

The docket holder applied to renew approval of their existing 0.05 mgd IWTP and its discharge, along with cooling tower blowdown.

1. TDS Effluent Limit Determination

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

> *"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 Commission's basin-wide in-stream TDS criteria is that the receiving stream's resultant TDS concentration be less than 133% of the background (WQR Section 3.10.3.B.1.b.). The 133% of the background TDS requirement is for the protection of aquatic life.

The sources of the elevated TDS at the Outfall No. 001 discharge appears to be: 1) IWTP treatment processes that utilize chemical addition for treatment which results in a by-product of salts in the effluent; 2) the recycling effect of the cooling towers which results in concentrating existing TDS in the cooling tower feed water which ultimately gets blown down to Outfall No. 001; and 3) the application of road salt in the winter for de-icing purposes that leads to higher TDS in the stormwater which drains to and discharges from Outfall No. 001.

According to the PADEP, the estimated seven-day low flow with a recurrence interval of ten years ($Q_{7\text{-}10}$ flow) of Crum Creek at Outfall No. 001 is 28.1 cfs (18.1 mgd). With their Application the docket holder provided the Chester – Ridley – Crum (CRC) Watershed Association's *Final Draft Water Quality Monitoring Report 2015-2017* (Report), dated June 2018, which included the results of Crum Creek in-stream TDS concentration sampling. Based on data from the Report, the estimated background TDS concentration in Crum Creek upstream of the IWTP outfall is 340 mg/l. 133% of 340 mg/l is 452 mg/l.

Based on the estimated background TDS concentration in Crum Creek of 340 mg/l, the $Q_{7\text{-}10}$ flow of Crum Creek of 18.1 mgd, the IWTP discharge rate of 0.087 mgd with a maximum effluent TDS concentration of 2,500 mg/l, the TDS in Crum Creek would be raised to 350 mg/l during $Q_{7\text{-}10}$ flows. If there was a discharge from the WWTP under these conditions, the WWTP flow would raise background TDS to 103 %.

Although the discharge exceeds DRBC's basin-wide TDS effluent limit of 1,000 mg/l, DRBC staff determined the discharge to be compatible with the Commission's designated water uses and water quality objectives in conformance with DRBC Water Quality Regulations since the in-stream concentrations in Crum Creek are not expected to exceed the Commission's criteria of 133% of background as a result of the facility discharge. Therefore, the TDS determination consisting of an average monthly effluent concentration limit of 2,000 mg/l and a daily maximum effluent concentration limit of 2,500 mg/l for Outfall No. 001 is approved via this docket.

2. Heat Dissipation Area

The docket holder's facility discharges cooling tower blowdown to a tidal portion of Crum Creek in Delaware River Water Quality Zone 4 at River Mile 84.9 – 0.5 (Delaware River – Crum Creek) Section 4.30.6. of the Commission's Water Quality Regulations (WQR) contains temperature requirements for Delaware River Basin discharges regulated by the Commission. WQR Section 4.30.6.C. requires that discharges to Zone 4 shall not result in an induced temperature increase of 5° F (2.8° C) above the average 24-hour temperature gradient displayed during the 1961-1966 period (see TABLE B-1 below), or a maximum of 86° F (30.0° C), whichever is less.

TABLE B-1: Average Daily Temperatures (1961-1966)
(Temperatures may be interpolated)

DATE	Zone 4 Delaware Estuary from Big Timber Creek to Pennsylvania-Delaware State Line
January 1	42
February 1	36
March 1	40
April 1	47
May 1	58
June 1	72
July 1	80
August 1	81
September 1	78
September 15	76
October 1	70
November 1	60
December 1	50
December 15	45

Section 4.30.6.E. of the WQR allows for the limitations above to be exceeded in thermal mixing zones, referred to as heat dissipation areas (HDAs), to be designated by the Commission on a case-by-case basis, subject to the following dimension limits in Zone 4 as defined in 4.30.6.E:

> *a. Maximum Length. As a guideline, heat dissipation areas shall not be longer than 3500 feet, measured from the point where the waste discharge enters the stream.*
> *b. Maximum Width. Heat dissipation areas shall not exceed a maximum width of two-thirds the surface width measured from shore to shore at any stage of tide. Within any one heat dissipation area, only one shore shall be used in determining the limits of the area.*
> *c. Maximum Cross-section. Heat dissipation areas shall not exceed a maximum of one-quarter of the cross-sectional area of the stream.*

The DRBC issued Docket No. D-1994-030-1 on October 26, 1994 which approved an HDA consisting of 2/3 the width of Crum Creek, and 75 feet upstream and 75 feet downstream of Outfall No. 001. The HDA was continued in DRBC Docket Nos. D-1994-030 REV and D-1994-030-3, approved on April 3, 2002 and May 13, 2020, respectively. This docket (D-1994-030-4) renews approval of the HDA in Delaware River Water Quality Zone 4 consisting of 2/3 the width of Crum Creek and 75 feet upstream and downstream from Outfall No. 001. (See DECISION Condition C.3).

3. Other

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 conform with Commission effluent quality requirements, where applicable.

The project is designed to produce a discharge that meets the effluent requirements as set forth in the Commission's *Water Quality Regulations* (*WQR)*.

C. DECISION

Effective on the approval date for Docket No. D-1994-030-4 below, the project described in Docket No. D-1994-030-3 is terminated and replaced by Docket No. D-1994-030-4. The project and the appurtenant facilities described in Section A "DESCRIPTION" 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 for Monitoring Point (MP) 101

MP 101 (IWTP Effluent)		
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) Influent	Monitor & Report	As required by NPDES Permit
$CBOD_5$ (at 20° C)	Monitor & Report	As required by NPDES Permit
Ammonia Nitrogen	Monitor & Report	As required by NPDES Permit
Total Cadmium	0.26 mg/l	As required by NPDES Permit
Hexavalent Chromium	1.71 mg/l	As required by NPDES Permit
Total Copper	2.07 mg/l	As required by NPDES Permit
Total Nickel	2.38 mg/l	As required by NPDES Permit
Total Silver	0.24 mg/l	As required by NPDES Permit
Total Zinc	1.48 mg/l	As required by NPDES Permit

EFFLUENT TABLE C-2: DRBC Parameters Included in NPDES Permit for Outfall No. 001

OUTFALL 001 (IWTP Effluent and Cooling Tower Blowdown)		
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
Temperature	110 °F (Instantaneous Max)	As required by NPDES Permit
Total Dissolved Solids*	2,000 mg/l (avg. monthly) 2,500 mg/l (daily maximum)	As required by NPDES Permit
PCBs	Monitor & Report	As required by NPDES Permit

* See DECISION Condition C.5

2. The docket holder shall submit Polychlorinated Biphenyl (PCB) monitoring data and PMP Annual Reports to the Commission's Science & Water Quality Management Branch as required in the existing NPDES permit.

Other Conditions

3. The discharge of wastewater shall not increase the ambient temperatures of the receiving waters by more than 5°F above the average 24-hour temperature gradient displayed during the 1961-1966 period, nor shall such discharge result in stream temperatures exceeding 86°F, except within an assigned heat dissipation area consisting of 2/3 the width of Crum Creek, and 75 feet upstream and 75 feet downstream of Outfall No. 001.

4. 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*.

5. The docket holder may request permission from the Executive Director to perform specific conductance monitoring in lieu of TDS monitoring. The request shall be made in writing and shall include information that supports the effluent specific correlation between TDS and specific conductance. Upon review, the Executive Director may modify the docket to allow specific conductance monitoring in lieu of TDS monitoring.

6. Section 2.3.10 of the Commission's *Rules of Practice and Procedure (RPP)* (18 C.F.R. 401.41), limiting the Commission's approval to three years in the absence of an expenditure of substantial funds by the project sponsor in reliance on the approval, is hereby waived for good cause shown in accordance with Section 2.9.3 (18 C.F.R. 401.123) of the same regulations. This approval shall expire on the expiration date set forth below unless prior thereto the docket holder has applied to the Commission to renew or extend this approval.

7. 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 C.F.R. 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 DRBC issues a reminder notice in advance of the deadline or the docket holder receives such notice. If 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 pending the grant or denial of the application for docket approval.

8. 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 the Type of Discharge and Service Area sections of the docket holder's Application to the extent consistent with all other conditions of this section. Any expansion beyond that included in Section A.3. Area Served is subject to DRBC review and approval in accordance with Section 3.8 of the Compact.

9. In accordance with the Commission's regulations at 18 C.F.R. Part 440, the docket holder is prohibited from discharging wastewater from high volume hydraulic fracturing ("HVHF") or HVHF-related activities to waters or land within the Basin. The docket holder is further prohibited from discharging hydraulic fracturing wastewater, whether treated or untreated, from sources within or outside the Basin, without obtaining the Commission's prior review and express approval in the form of a revised docket. Violation of this or any condition of this docket approval may result in enforcement, including the risk of financial penalties, pursuant to Section 14.17 of the Delaware River Basin Compact and Section 2.7.8 (18 CFR 401.98) of the Commission's Rules of Practice and Procedure.

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

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

12. 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.

13. 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.

14. 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.

15. 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).

16. 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, to ensure proper control, use and management of the water resources of the Basin.

17. The docket holder shall be subject to applicable DRBC regulatory program fees, in accordance with duly adopted DRBC resolutions and/or regulations (see 18 C.F.R. 401.43).

18. 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 C.F.R. 401.43).

19. 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 C.F.R. 401.43).

20. 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.

21. 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 (RPP)*. 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 12, 2025

EXPIRATION DATE: March 12, 2030