pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Northeast Regional Office**
**CLEAN WATER PROGRAM**

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| Application Type | **Renewal** | Application No. | **PA0061336** |
| Facility Type | **Industrial** | APS ID | **595783** |
| Major / Minor | **Minor** | Authorization ID | **1380142** |

# NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

## Applicant and Facility Information

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|---|---|---|---|
| Applicant Name | **Pennsylvania American Water Company** | Facility Name | **Nesbitt Water Treatment Plant** |
| Applicant Address | 1799 Jumper Road | Facility Address | 83 Aston Mountain Road |
| | Wilkes-Barre, PA 18702 | | Pittston, PA 18640-9670 |
| Applicant Contact | Emery Yurko | Facility Contact | Ron Temple |
| Applicant Phone | (570) 237-7374 | Facility Phone | (570) 457-1550 |
| Client ID | 87712 | Site ID | 446349 |
| SIC Code | 4941 | Municipality | Pittston Township |
| SIC Description | Trans. & Utilities - Water Supply | County | Luzerne |
| Date Application Received | December 22, 2021 | EPA Waived? | Yes |
| Date Application Accepted | December 22, 2021 | If No, Reason | - |

Purpose of Application: Renewal of existing NPDES permit.

## Summary of Review

The applicant is requesting renewal of an NPDES permit to discharge treated filter backwash water from the Nesbitt Water Treatment Plant to Trout Creek, a HQ-CWF/MF (high quality cold water fishery, migratory fishery-designated) receiving stream in State Water Plan Basin 05-A (Lackawanna River). Per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than the designated use.

The effluent limits for Outfall 001 are based on an average discharge flow of 0.66 MGD. The discharge was previously modeled using an average daily flow 0.5228 MGD (refer to antidegradation discussion below). Outfall 001 receives supernatant discharge from backwash water lagoons which receive flow from online process monitoring instrumentation, taps and filter backwash.

The low flow yield of 0.082 cfs/mi$^2$ ($Q_{7\text{-}10}$ = 0.587 cfs, D.A. = 7.09 mi$^2$) was obtained using the delineation feature of USGS's StreamStats. Drainage areas, elevations and RMIs were obtained using StreamStats and PA DEP's eMapPA. DEP's Toxics Management Spreadsheet (TMS) recommended slightly more stringent limitations for Total Aluminum. Since eDMR results indicate this facility can meet the more stringent limitations, they will come into effect on the permit effective date. Total Aluminum mass-based limitations were calculated using the new limitations and adjusted flow rate.

The TMS also recommended monitoring requirements for Total Copper and Total Lead and quarterly monitoring/reporting requirements for those parameters are included in this renewal.

The TRC calculation spreadsheet recommended more stringent limitations for TRC that will come into effect 1 year after the permit effective date. The permittee may conduct site-specific studies to update the TRC limitations. Default values were used in the TRC spreadsheet for stream chlorine demand, discharge chlorine demand, CV daily, CV hourly, and criteria compliance times.

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | *Brian Burden*<br>Brian Burden, E.I.T. / Project Manager | May 23, 2023 |
| X | | Amy M. Bellanca (signed)<br>Amy M. Bellanca, P.E. / Acting Environmental Engineer Manager | 5-30-23 |

**Summary of Review**

All limitations and monitoring requirements from the previously issued permit are carried over for this renewal as well as the Part C conditions. The technology-based limitations were developed using the Department's *Technology-Based Control Requirements for Water Treatment Plant Wastes* guidance document (doc. no. 362-2183-003, rev. 10/1/1997). The BPT technology-based effluent control requirements for filter backwash wastewater, or waste sludges generated from pre-sedimentation, coagulation/settling, water softening, and iron/manganese removal processes are as follows:

| Parameter | Monthly Average (mg/L) | Daily Maximum (mg/L) |
|---|---|---|
| Suspended Solids | 30.0 | 60.0 |
| Iron (total) | 2.0 | 4.0 |
| Aluminum (total) | 4.0 | 8.0 |
| Manganese (total) | 1.0 | 2.0 |
| pH | 6.0-9.0 (at all times) | |

A TMDL for the Lackawanna River Watershed was approved by EPA on 4/7/05 that addresses metals associated with acid mine drainage (iron, manganese, aluminum) and pH. There are no waste load allocations assigned to this facility and limitations are already included in the permit for each AMD parameter. eDMR results indicate effluent concentrations for the metals are below the in-stream water quality criteria, and the pH is within normal range.

As per the Phase 3 WIP Wastewater Supplement (revised, September 13, 2021): for non-significant IW facilities, monitoring and reporting of TN and TP will be required throughout the permit term in renewed or amended permits anytime the facility has the potential to introduce a net TN or TP increase to the load contained within the intake water used in processing. In general, facilities that discharge groundwater and cooling water with no addition of chemicals containing N or P do not require monitoring. Effluent TN/TP monitoring is not included in this renewal.

The permittee utilizes Magnafloc LT22S cationic polymer at a maximum usage rate of 1.0 mg/L. Since the polymer contains acrylamide, effluent sample results were requested. All results were non-detect; therefore, acrylamide is not considered a parameter of concern at this facility and monitoring requirements will not be included in this renewal.

The previously issued permit expired on June 30, 2022 and the application for renewal was submitted in a timely manner. The EPA waiver is in effect.

**Antidegradation Considerations**

As per PA DEP's Water Quality Antidegradation Implementation Guidance (doc. No. 391-0300-002), "new, additional, or increased discharge" refers to point or nonpoint sources emanating from projects or activities undertaken after the waterbody is designated for HQ or EV protection. For WTP point source discharges, incremental flows are considered to be "new, additional, or increased" when:

a.) Projected wastewater flow will cause the treatment facility receiving the incremental flow to exceed hydraulic or organic design capacity; or

b.) Projected incremental wastewater flow will originate from changes in production methods that alter wastewater characteristics from those originally permitted in the design of the treatment facility.

In an email dated December 15, 2022, the permittee stated "*when increased flows from our lagoon occur, they do not exceed the hydraulic/design capacity of the treatment facility."*

Regarding b.) above, the permittee stated "*the increased average flow from our lagoon outfall did not occur due to changes in production methods. The flow increased due to temporary impacts from some extreme rain events occurring during reservoir turnover periods as well as from multiple filter media replacement/underdrain rehabilitation projects which put the plant down one filter which increased backwashes across the remaining filters. Under normal operating conditions at our water treatment plant we typically wash between 4 - 5 filters a day (sometimes 6 depending on operating conditions). During normal conditions the lagoon outfall flow is typically from the mid to high 400,000 gpd to the mid 500,000 gpd range. During the two years of flow data used to generate the outfall flow rate for the renewal application we had several extreme rain events that impacted the reservoir and therefore the loading at the plant. When we get heavy rains like this they typically impact the plant for a few days to a few weeks depending on the severity of the rain. The physical loading from these storms*

**Summary of Review**

*at this direct filtration water treatment plant has a significant impact in reducing filter runtimes and therefore increasing the number of backwashes per day. A couple of these storms were heavier than normal and occurred during reservoir turnover periods which increased the magnitude and duration of the impacts seen at the water treatment plant and therefore required a significantly longer than usual period of doing increased backwashes per day. To make matters more challenging a couple of these events occurred while we were doing filter media replacement / underdrain rehabilitation projects. Being down one filter under normal conditions puts additional stress on the rest of the filters, reduces filter runtimes and increases backwash frequency. Being down one filter during some of those storm events reduced filter runtimes even further. During these storm event/reservoir turnover periods, we were routinely doing 8-9 backwashes, sometimes 10 per day. Lagoons flows during these times typically ranged in the 800,000 to 900,000 gpd and at times was over 1mgd. These flows caused the two-year average outfall flow to increase versus the previous renewal application submittal."*

TRC Calculation.pdf TMS PA0061336.pdf StreamStats Outfall 001.pdf StreamStats Point 2.pdf

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.