Pennsylvania Department of Environmental Protection

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0062758**
Facility Type	**Industrial**	APS ID	**1147468**
Major / Minor	**Minor**	Authorization ID	**1544260**

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

Applicant and Facility Information

Applicant Name	**Aqua Pennsylvania, Inc.**	Facility Name	**Shenandoah WTP**
Applicant Address	204 E. Sunbury Street	Facility Address	424 Raven Run Road
	Shamokin, PA 17872-4826		Shenandoah, PA 17946
Applicant Contact	John Klinger	Facility Contact	Jeremy Nicodemus
Applicant Phone	(570) 648-5783	Facility Phone	(570) 380-3971
Client ID	364560	Site ID	588704
SIC Code	4941	Municipality	West Mahanoy Township
SIC Description	Trans. & Utilities - Water Supply	County	Schuylkill
Date Application Received	September 30, 2025	EPA Waived?	Yes
Date Application Accepted	September 30, 2025	If No, Reason	-

Purpose of Application: Renewal of NPDES permit.

Summary of Review

The applicant is requesting renewal of their NPDES permit to discharge treated industrial wastewater to Lost Creek, a CWF/MF designated receiving water in State Water Plan Basin 06-B (Mahanoy – Shamokin Creeks). As per the Department's current existing use list, the receiving water does not have an existing use that is more protective than its designated use. Lost Creek is part of the Mahanoy Creek Watershed TMDL and the facility is assigned the following waste load allocations:

Table 9. Waste Load Allocations at Shenandoah Borough WTP

Parameter	Monthly Avg. Allowable Conc. (mg/L)	Average Flow (MGD)	Allowable Load (lbs/day)
Outfall 001			
Al	4.0	0.128	4.27
Fe	2.0	0.128	2.14
Mn	1.0	0.128	1.07

In the previously issued permit renewal, the discharge was modeled using a 0.22 MGD discharge value for Outfall 001, which was the maximum discharge rate and a value supported by eDMR flow values reported at the time. The new permittee requested for the discharge to be modeled with an average discharge rate of 0.118 MGD. eDMR results show a consistent discharge flow rate at approximately 0.118 MGD and current guidance recommends modeling the discharge at the average rate (if supported by reported data).

The low flow yield (LFY) of 0.22 cfs/mi^2 was estimated by USGS's StreamStats from the downstream modeling point. As recommended by StreamStats, the LFY was not obtained from the first modeling point due to the small drainage area being

Approve	Deny	Signatures	Date
X		Brian Burden, E.I.T. / Project Manager	December 1, 2025
X		Edward Dudick, P.E. / Environmental Engineer Manager	December 1, 2025

Summary of Review

out of the recommended range. Drainage areas and elevations were also obtained from StreamStats and the river mile index (RMI) values were obtained from DEP's eMap. Stream hardness of 9 mg/L and pH of 5.88 S.U. were assumed and based on data collected by DEP biologists prior to the last permit renewal. The average discharge hardness value reported on the renewal application was utilized.

Due to the different modeling assumptions made when compared to the modeling performed during the previous permit renewal, a few updates are made to the existing limitations and monitoring requirements. The limitations from the previous permit and updates made during this renewal are summarized for each parameter below:

pH

The 6.0 S.U. instantaneous minimum and 9.0 S.U. instantaneous maximum (IMAX) technology-based limitations from DEP's *Technology-Based Control Requirements for Water Treatment Plant Wastes* (doc. No. 386-2183-001) are carried over from the previous renewal.

Total Suspended Solids

The 30 mg/L monthly average limitation from 386-2183-001 is carried over from the previous renewal. In accordance with the guidance document, the previous 60 mg/L IMAX is updated to a daily maximum limitation in this renewal. The standard 2.5x multiplier calculates an IMAX limit of 75 mg/L.

Total Residual Chlorine

Using the updated modeling inputs, the TRC calculation spreadsheet recommends a monthly average limitation of 0.29 mg/L and IMAX of 0.96 mg/L. These limitations replace the 0.05 mg/L monthly average and 0.17 mg/L IMAX from the previous permit. The monthly average limitation is more stringent than the 0.5 mg/L technology-based limitation from 386-2183-001.

Total Aluminum

Using the updated modeling inputs, the Toxics Management Spreadsheet (TMS) recommends a monthly average limitation of 1.4 mg/L. The standard multipliers from DEP's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (doc. No. 362-0400-001) of 2.0 for the daily maximum and 2.5 for the IMAX are applied to this pollutant (and all other pollutants modeled during this renewal). This results in a daily maximum of 2.8 mg/L and IMAX of 3.5 mg/L. These limitations replace the 0.75 mg/L monthly average, 0.927 mg/L daily maximum, and 0.927 mg/L IMAX from the previous permit. The limits are more stringent than the technology-based limits from 386-2183-001 (4.0 mg/L monthly average, 8.0 mg/L daily maximum) as well as the concentration and mass limitations from the TMDL.

Total Cadmium

Since Total Cadmium discharge concentrations have been consistently reported as non-detect when analyzing at a sufficiently sensitive quantitation limit (QL), no limitations or monitoring requirements were recommended. To help ensure Total Cadmium is no longer a pollutant of concern in the discharge, quarterly monitoring / reporting requirements are included in this renewal. The quarterly monitoring requirements replace the limitations (0.10 µg/L monthly average, 0.16 µg/L daily maximum, 0.25 µg/L IMAX) and weekly monitoring requirements that were established during the previous renewal.

Total Copper

The TMS recommended limitations for Total Copper to replace the existing limitations, however, data submitted with the renewal application indicates that the raw water intake concentrations are greater than the effluent concentrations. Since it appears the water treatment plant removes copper from the surface waters, limitations are not included in this renewal. A monthly requirement to monitor both intake and effluent Total Copper replaces the limitations and weekly monitoring requirements established in the previous renewal.

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Total Iron

Using the updated modeling inputs, the Toxics Management Spreadsheet (TMS) recommends a monthly average limitation of 4.4 mg/L (8.8 mg/L daily maximum, 11.0 mg/L IMAX). The technology-based limits from 386-2183-001 (2.0 mg/L monthly average, 4.0 mg/L daily maximum) and TMDL limits are more stringent and are included in this renewal. These limits replace the 1.883 mg/L monthly average, 2.938 mg/L daily maximum, and 4.708 mg/L IMAX limitations from the previous renewal. The mass-based limitations from the TMDL are included in the permit.

Total Lead

Since Total Lead discharge concentrations have been consistently reported as non-detect when analyzing at a sufficiently sensitive QL, no limitations or monitoring requirements were recommended. To help ensure Total Lead is no longer a pollutant of concern in the discharge, quarterly monitoring / reporting requirements are included in this renewal. The quarterly monitoring requirements replace the limitations (0.49 µg/L monthly average, 0.76 µg/L daily maximum, 1.22 µg/L IMAX) and weekly monitoring requirements that were established during the previous renewal.

Total Manganese

Using the updated modeling inputs, the Toxics Management Spreadsheet (TMS) recommends a monthly average limitation of 2.9 mg/L (5.8 mg/L daily maximum, 7.25 mg/L IMAX). The technology-based limits from 386-2183-001 (1.0 mg/L monthly average, 2.0 mg/L daily maximum) and TMDL limits are more stringent and are carried over from the previous permit. The mass-based limitations from the TMDL are included in the permit.

Total Nickel

The previously issued permit included monthly monitoring / reporting requirements for Total Nickel. The TMS didn't recommend any monitoring requirements when modeling the discharge and all monitoring requirements for Total Nickel are removed from the permit.

Total Selenium

The previously issued permit included monthly monitoring / reporting requirements for Total Selenium. The TMS didn't recommend any monitoring requirements when modeling the discharge and all monitoring requirements for Total Selenium are removed from the permit.

Total Zinc

The previously issued permit included monthly monitoring / reporting requirements for Total Zinc. The TMS recommended monitoring / reporting requirements when modeling the discharge since the maximum reported discharge concentration of 12 µg/L is greater than 10% of the calculated WQBEL of 35.5 µg/L. The existing monitoring requirements for Total Zinc are updated from 1/month to 1/quarter.

Acrylamide

Since Acrylamide discharge concentrations have been consistently reported as non-detect when analyzing at the laboratory's lowest available QL, current guidance suggests considering this pollutant not present in the discharge. There is no target QL for this pollutant, currently. The renewal application indicates acrylamide is present in the flocculant utilized in the water treatment process. To help ensure Acrylamide isn't a pollutant of concern in the discharge, quarterly monitoring / reporting requirements are included in this renewal. The quarterly monitoring requirements replace the limitations (0.28 µg/L monthly average, 0.43 µg/L daily maximum, 0.69 µg/L IMAX) and monthly monitoring requirements that were established during the previous renewal.

Total Chromium (III)

The previously issued permit didn't include any requirements for Total Chromium (III). The TMS recommended monitoring requirements since the maximum reported concentration reported in the renewal application of 5 µg/L is greater than 10% of the calculated WQBEL of 42.4 µg/L. The maximum reported concentration is approximately 12% of the WQBEL and two of

Summary of Review

the three analytical results were reported as non-detect. It doesn't appear that Total Chromium (III) is a pollutant of concern and no monitoring requirements are included in the permit.

Mass loading monitoring/reporting requirements and limitations are included for all applicable pollutants in accordance with Table 5-2 of the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (doc. No. 362-0400-001). eDMR reporting concentration units for all applicable parameters are updated to mg/L (several parameters in the previous renewal were required to be reported in µg/L).

The facility is considered a "non-significant" industrial waste facility per the Department's "Chesapeake Bay Industrial Wastewater Compliance Plan" (January 2010). As recommended in Appendix B of the Plan for water treatment facilities, nutrient monitoring is required quarterly. 1/quarter monitoring / reporting is added to the permit for Total Nitrogen and Total Phosphorus.

Intake monitoring was included in the previous renewal for several parameters with a minimum measurement frequency of "upon request". Those requirements are removed from the permit. Intake Total Copper is to be monitored as described above.

Template Part C special conditions are included in the permit for chemical additives and sedimentation basin cleaning requirements. The Part C.I.A through C.I.H conditions from the previously issued permit are carried over in this renewal. The Part C conditions for the TRC schedule of compliance and WQBELs for toxics (including site-specific studies and Toxics Reduction Evaluation requirements) are removed from the permit.

The renewal application includes a requirement to sample and analyze for PFAS parameters. Perfluorooctanoic acid (PFOA) was detected in all three required analyses with an average concentration of 0.637 ng/L. Perfluorooctanesulfonic acid (PFOS) was detected in one of the three analyses at a concentration of 0.71 ng/L (QL of 0.44 ng/L). All results for perfluorobutanesulfonic acid (PFBS) and hexafluoropropylene oxide dimer acid (HFPO-DA) were non-detect at QLs of 0.32 ng/L and 1.4 ng/L, respectively. As per current guidance, the template Part C condition titled "PFAS Reduction" is added to the permit.

The previously issued permit expires on August 30, 2026 and the application for permit renewal was submitted in a timely manner.

TMS PA0062758.pdf TRC Calculation.pdf Watershed Information.pdf Mahanoy Creek TMDL Final.pdf

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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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.118
Latitude	40º 49' 6"	Longitude	-76º 14' 33"
Quad Name	Shenandoah	Quad Code	1236
Wastewater Description:	Water treatment effluent		

Receiving Waters	Lost Creek (CWF)	Stream Code	17684
NHD Com ID	54960741	RMI	0.8
Drainage Area	1.62 mi^2	Yield (cfs/mi^2)	0.22
Q_{7-10} Flow (cfs)	0.3564	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1387	Slope (ft/ft)	0.08
Watershed No.	6-B	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	Metals		
Source(s) of Impairment	Acid Mine Drainage		
TMDL Status	Final	Name	Mahanoy Creek

Background/Ambient Data		Data Source
pH (SU)	5.88	2018 DEP sampling (utilized in previous modeling)
Temperature (°F)	-	-
Hardness (mg/L)	9	2018 DEP sampling (utilized in previous modeling)
Other:	-	-

Nearest Downstream Public Water Supply Intake		Suez Water	
PWS Waters	Susquehanna River	Flow at Intake (cfs)	-
PWS RMI	61.5	Distance from Outfall (mi)	~82

Changes Since Last Permit Issuance: Modeling inputs were adjusted.