pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0070301 A-1**
Facility Type	**Non-Municipal**	APS ID	**1069833**
Major / Minor	**Minor**	Authorization ID	**1407311**

Applicant and Facility Information

Applicant Name	**WHN Management, LLC**	Facility Name	**Willow Haven North MHP**
Applicant Address	2846 Main Street, Box 12A	Facility Address	3469 Franklin Square
	Morgantown, PA 19543-9486		Northampton, PA 18067
Applicant Contact	James Perano, Chief Operating Officer	Facility Contact	James Perano, Chief Operating Officer
Applicant Phone	(610) 286-0490	Facility Phone	(610) 286-0490
Client ID	369224	Site ID	246951
Ch 94 Load Status	-	Municipality	Moore Township
Connection Status	-	County	Northampton
Date Application Received	March 6, 2022	EPA Waived?	Yes
Date Application Accepted	March 10, 2022	If No, Reason	-

Purpose of Application: Renewal and Transfer of Existing NPDES Permit for Discharge of Treated Sewage

Summary of Review

The applicant is requesting the renewal of an NPDES permit to discharge up to 0.011 MGD of treated sewage into Hokendauqua Creek, a Cold-Water Fishery, Migratory Fish (CWF, MF) receiving stream in State Water Plan Basin 2-C (Lower Lehigh River). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. This stream segment is designated as a naturally reproducing trout stream as per PA Fish & Boat Commission. This discharge is not expected to affect public water supplies.

This renewal also includes a transfer from SPG, Inc. (Client ID: 44427) to WHN Management, LLC (Client ID: 369224). WQM Permits 4815403 and 4806407 will be transferred simultaneously when the final NPDES Permit is issued.

Limitations for pH, $CBOD_5$, Total Suspended Solids (TSS), and Fecal Coliform are technology-based and carried over from the previous permit. WQM 7.0 did not recommended stricter limits.

A BPJ-based minimum limitation of 5.0 mg/L for Dissolved Oxygen (DO) has been added to the permit.

DRBC Docket No. D-2018-002-1 requires the addition of a year-round 20 mg/L average monthly limit for Ammonia Nitrogen. The Docket as requires monthly monitoring/reporting for Nitrate as N, Total Nitrogen, and Total Phosphorous. The DRBC is still requesting quarterly monitoring/reporting for Total Dissolved Solids (TDS) and monthly monitoring/reporting for influent $CBOD_5$. These requirements were maintained in the permit.

The annual monitoring/reporting for Total Kjeldahl Nitrogen has been increased to monthly to remain consistent with the DRBC required monthly monitoring/reporting for Nitrate as N, Total Nitrogen, and Total Phosphorous.

The previous permit had Total Residual Chlorine limits of 0.5 mg/L average monthly and 1.63 IMAX. As per PA Code 92a.47(a)(8) (which refers to PA Code 92a.48(b)(2)), a monthly average TRC facility-specific BAT effluent limit of 0.5 mg/L

Approve	Deny	Signatures	Date
X		/s/ Allison Seyfried / Environmental Engineering Specialist	September 1, 2022
X		/s/ Amy M. Bellanca, P.E. / Environmental Engineer Manager	9-12-22

Summary of Review

and an IMAX limit of 1.6 mg/L is required. Therefore, the IMAX limitation of 1.60 mg/L has been applied to this permit renewal. The TRC Calculation Spreadsheet did not recommend more stringent water quality-based limitations. eDMR data from July 2021 to June 2022 (seen on pages 4 and 5 of this Fact Sheet) indicates that the facility is consistently under 0.5 mg/L monthly average for TRC and over 5.0 mg/L for DO. Therefore, the new TRC technology-based limit and DO limit will be applied at the permit effective date.

Sewage discharges now require monitoring and reporting for E. Coli. A monitoring frequency of 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD, 1/year for design flows of 0.002 – 0.05 MGD will be utilized.

Monitoring frequencies for all parameters with limitations have been updated to the recommended frequencies found in Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations (Document No. 362-0400-001).

The NPDES Permit Renewal application indicates that the annual average flow for 2019 is higher than the the permitted hydraulic design capacity. The summary of eDMR flow data on page 4 of this Fact Sheet also shows that the average monthly flow is also frequently higher than the hydraulic design capacity.

There are no representative stream gages in the vicinity of the outfall. USGS StreamStats was used to estimate the low flow values. USGS StreamStats results and calculations can be seen on pages 7 and 8 of this Fact Sheet. For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA, drainage areas were delineated using USGS's StreamStats Interactive Map, and elevations were obtained using the elevation profile feature of StreamStats. The results from USGS were almost identical to the results provided in the previous permit Fact Sheet.

The existing permit expires on September 30, 2022 and the application for renewal was received on March 6, 2022. The transfer application for the NPDES permit was received on March 28, 2022. The transfer applications for the WQM permits were not received until August 15, 2022.

A Water Management System Inspection query indicated that on May 17, 2022 a Routine/Partial Inspection was performed.

There are currently no open violations for this client that warrant withholding issuance of this permit.

Sludge use and disposal description and location(s): As per the permittee's NPDES permit renewal application, sludge is hauled to the LCA Pretreatment in Fogelsville, PA by Allstate Septic.

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)	0.011
Latitude	40º 44' 59.01"	Longitude	-75º 28' 23.78"
Quad Name	Kunkletown	Quad Code	1242
Wastewater Description:	Sewage Effluent		
Receiving Waters	Hokendauqua Creek (CWF)	Stream Code	3660
NHD Com ID	26293833	RMI	9.62
Drainage Area	13.8 mi^2	Yield (cfs/mi^2)	0.0572
Q_{7-10} Flow (cfs)	0.79	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	497.91	Slope (ft/ft)	-
Watershed No.	2-C	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-
Nearest Downstream Public Water Supply Intake	Allentown City Water System		
PWS Waters	Lehigh River	Flow at Intake (cfs)	-
PWS RMI	17.2	Distance from Outfall (mi)	~ 11 Miles

Treatment Facility Summary

Treatment Facility Name: Willow Haven North WWTP

WQM Permit No.	Issuance Date
4815403	3/08/2016
4806407	4/12/2007

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge	Chlorine	0.0108 (2019-2021)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.011	22.9	Not Overloaded	Holding Tank	Hauled

Compliance History

DMR Data for Outfall 001 (from July 1, 2021 to June 30, 2022)

Parameter	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21
Flow (MGD) Average Monthly	0.0108	0.0112	0.0142	0.0108	0.0119	0.0081	0.0082	0.0103	0.0079	0.0150	0.0108	0.0099
Flow (MGD) Daily Maximum	0.0165	0.0291	0.0356	0.0155	0.0310	0.0130	0.0197	0.0200	0.0163	0.0460	0.0478	0.0132
pH (S.U.) Minimum	7.12	7.27	7.06	7.32	7.25	7.26	7.15	7.07	7.27	7.26	6.92	7.01
pH (S.U.) Maximum	7.92	7.80	7.58	7.76	7.65	7.84	8.02	7.64	7.93	7.84	7.69	7.58
DO (mg/L) Minimum	7.0	8.3	8.1	8.1	8.2	10.1	10.2	9.5	8.1	7.8	5.2	6.4
TRC (mg/L) Average Monthly	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.03	0.02	0.01	0.01	0.01
TRC (mg/L) Instantaneous Maximum	0.03	0.08	0.23	0.07	0.23	0.05	0.07	0.27	0.08	0.19	0.22	0.11
CBOD5 (mg/L) Average Monthly	5.2	20.8	4.1	3.3	3.5	7.5	3.2	2.5	9.0	3.7	6.0	3.2
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	127	220	117	156	138	177	117	102	160	67	179	197
TSS (mg/L) Average Monthly	4.0	23.5	5.5	4.0	4.0	12.4	4.0	4.0	12.4	8.0	4.3	4.0
Total Dissolved Solids (mg/L) Average Quarterly	566			394			456			426		
Fecal Coliform (No./100 ml) Geometric Mean	1	2	1	1	1	1	1	1	1	1	1	1
Fecal Coliform (No./100 ml) Instantaneous Maximum	1	2	1	1	1	1	1	1	1	1	1	1
Nitrate-Nitrite (mg/L) Annual Average							1.59					
Total Nitrogen (mg/L) Annual Average							12.8					
Ammonia (mg/L) Average Monthly	15.1	19.9	11.2	21.2	17.7	21.1	9.65	4.31	15.7	6.19	10.7	9.97

Ammonia (mg/L) Daily Maximum	15.1	19.9	11.2	21.2	17.7	21.1	9.65	4.31	15.7	6.19	10.7	9.97
TKN (mg/L) Annual Average							11.2					
Total Phosphorus (mg/L) Annual Average							0.96					

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.011
Latitude 40º 45' 0.28" **Longitude** -75º 28' 24.68"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25.0	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	50.0	IMAX	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30.0	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	60.0	IMAX	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
	1.6	IMAX		
Dissolved Oxygen	5.0	Minimum	-	BPJ
E. Coli	Report	IMAX	-	92a.61

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model
Total Dissolved Solids (TDS)	Report	Average Quarterly	DRBC Docket Requirement
Carbonaceous Biochemical Oxygen Demand (CBOD5) Raw Sewage Influent	Report	Average Monthly	
Ammonia-Nitrogen	20.0	Average Monthly	
Nitrate-Nitrite as N	Report	Average Monthly	
Total Nitrogen	Report	Average Monthly	
Total Phosphorus	Report	Average Monthly	

Anti-Backsliding

No limitations were made less stringent.

Modeling

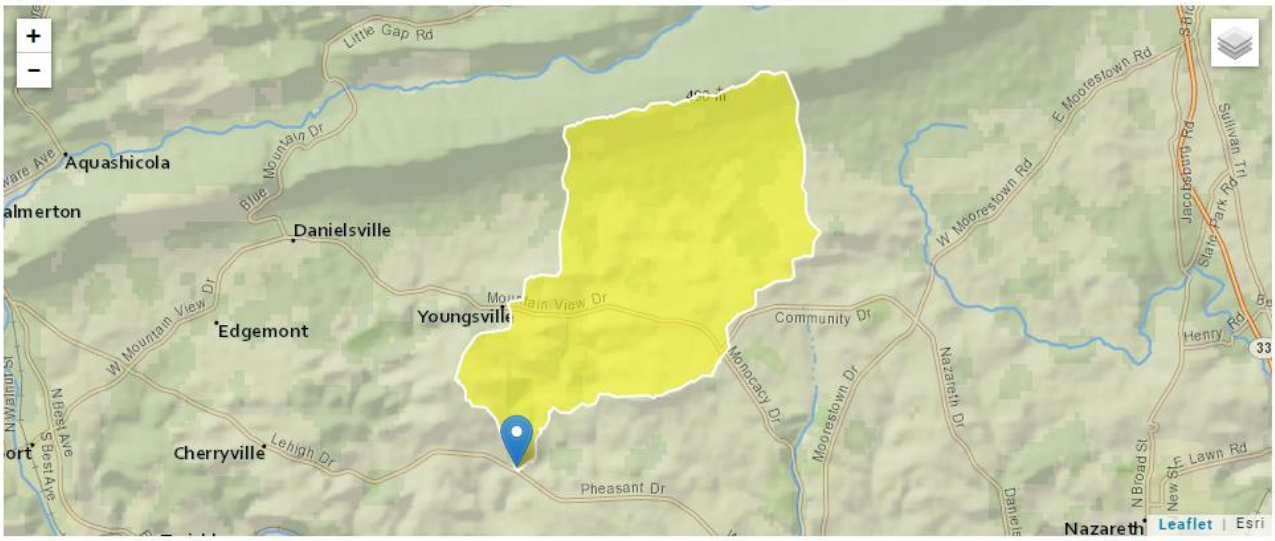
At Outfall 001 to Hokendauqua Creek:

RMI	Elevation (ft)	Drainage Area (mi^2)	Q_{7-10} Flow (cfs)
9.62	497.91	13.8	0.79

$$Low\ Flow\ Yield\ using\ StreamStats = \frac{0.79\ ft^3/sec}{13.8\ mi^2} = \mathbf{0.0572}\ \frac{\boldsymbol{ft^3/sec}}{\boldsymbol{mi^2}}$$

StreamStats Report

Region ID:	PA
Workspace ID:	PA20220829134420079000
Clicked Point (Latitude, Longitude):	40.74966, -75.47319
Time:	2022-08-29 09:44:41 -0400



Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	13.8	square miles	4.93	1280

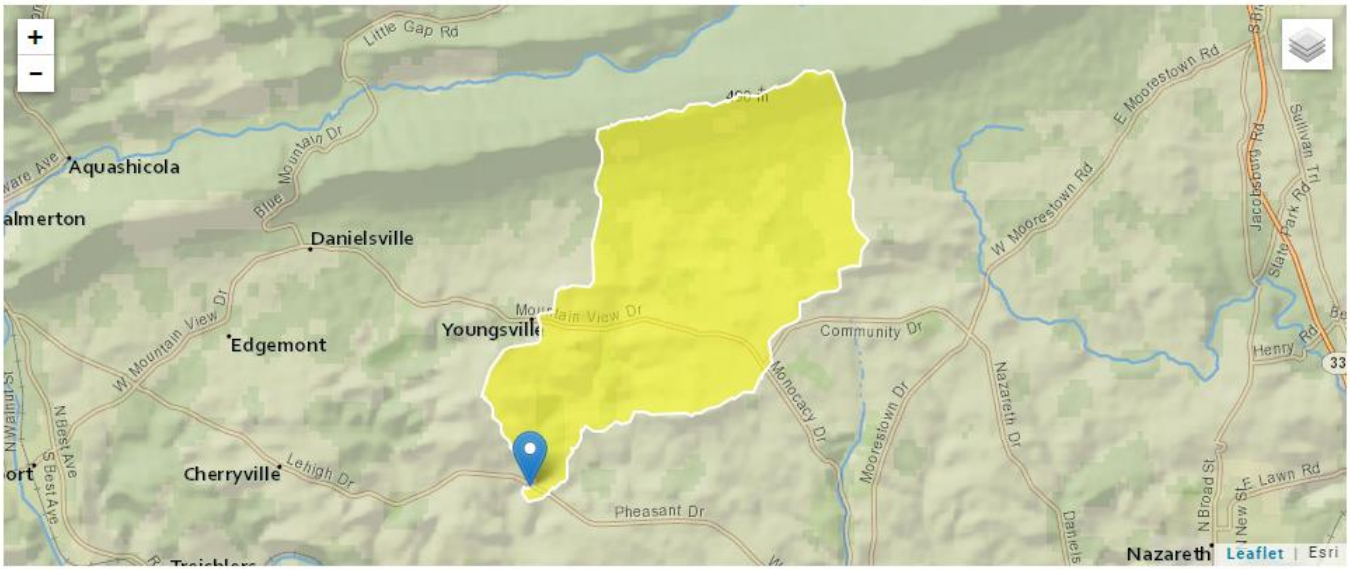
Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.96	ft^3/s	38	38
30 Day 2 Year Low Flow	2.75	ft^3/s	33	33
7 Day 10 Year Low Flow	0.79	ft^3/s	51	51

At confluence with Unnamed Tributary 3985 to Hokendauqua Creek:

RMI	Elevation (ft)	Drainage Area (mi^2)
9.14	476.82	14

StreamStats Report

Region ID:	PA
Workspace ID:	PA20220829142313544000
Clicked Point (Latitude, Longitude):	40.75010, -75.47748
Time:	2022-08-29 10:23:33 -0400



Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	14	square miles	4.93	1280

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
02C	3660	HOKENDAUQUA CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
9.620	WillowHaven MHP	PA0070301	0.011	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

TRC EVALUATION			
Input appropriate values in A3:A9 and D3:D9			
0.79	= Q stream (cfs)	0.5	= CV Daily
0.011	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 14.828	1.3.2.iii	WLA cfc = 14.449
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 5.525	5.1d	LTA_cfc = 8.400

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

DRBC Docket D-2018-002-1.pdf

TRC_CALC_WillowHaven.pdf

Watershed Info - Willow Haven North.p