Pennsylvania Department of Environmental Protection

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0033740**
Facility Type	**Non-Municipal**	APS ID	**608347**
Major / Minor	**Minor**	Authorization ID	**1446850**

Applicant and Facility Information

Applicant Name	**SPG, Inc., dba Whispering Hollow South**	Facility Name	**Whispering Hollow South MHP WWTF**
Applicant Address	139 Country Club Road	Facility Address	139 Country Club Road
	Northampton, PA 18067-3028		Northampton, PA 18067-3028
Applicant Contact	Jared Surnamer, President	Facility Contact	Kenneth L. Fulford, Operator
Applicant Phone	(610) 262-8773	Facility Phone	(610) 216-0150
Client ID	44427	Site ID	271893
Ch 94 Load Status	Not Overloaded	Municipality	Allen Township
Connection Status	-	County	Northampton
Date Application Received	July 4, 2023	EPA Waived?	Yes
Date Application Accepted	July 12, 2023	If No, Reason	-

Purpose of Application: Renewal of NPDES permit for discharge of treated sewage.

Summary of Review

The applicant is requesting the renewal of an NPDES permit to discharge up to 0.020 MGD of treated sewage into an Unnamed Tributary to 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.

Limitations for pH, $CBOD_5$, Total Suspended Solids (TSS), and Fecal Coliform are technology-based and carried over from the previous permit.

A BPJ-based limitation of 5.0 mg/L for Dissolved Oxygen (DO) has been added to the permit. This is an increase from the existing 3.0 mg/L DO limitation. The new limit will come into effect three years after the permit effective date.

WQM modeling recommended stricter summertime limitations for Ammonia-Nitrogen (May 1 – October 31) (4.38 mg/L monthly average, 8.76 mg/L IMAX). Wintertime monitoring/reporting for Ammonia-Nitrogen has also been added at three times the new summertime limitations (13.1 mg/L monthly average, 26.3 mg/L IMAX). The limitations for Ammonia-Nitrogen from the previously issued permit will be in effect the first three (3) years of the permit. eDMR data from the past year confirms the facility should be able to meet these new limits.

The Total Residual Chlorine (TRC) Calculation Spreadsheet recommends stricter limitations than the previous permit. The permittee will be required to meet the new water quality-based limits for TRC starting three years after the effective date of the permit. TRC limitations from the previously issued permit are in effect for the first three years after the permit effective date.

Approve	Deny	Signatures	Date
X		/s/ Allison S. Zukosky / Project Manager	October 15, 2024
X		/s/ Amy M. Bellanca, P.E. / Acting Engineer Manager	10-28-24

Summary of Review

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.

The latest DRBC Preliminary Docket No. D-2018-002-2 requires the addition of monitoring/reporting for 85% minimum $CBOD_5$ Percent Removal at the same monitoring frequency as $CBOD_5$. This parameter has been added to the NPDES permit. The influent reporting to CBOD5, the quarterly monitoring/reporting for Total Dissolved Solids (TDS), and the annual monitoring/reporting for Total Nitrogen, Nitrate as N, Nitrite as N, Total Kjeldahl Nitrogen, and Total Phosphorus has been carried over from the previous permit.

The annual monitoring and reporting for Acrylamide has been removed from the permit. The monitoring requirement was added in the previous permit due to the use of Acrylamide containing chemical products. The NPDES renewal application does not list any Acrylamide containing chemical products and the annual DMRs submitted for this facility indicate that "Acrylamide polymer is not used at this facility". The "GG" code has been used for this parameter in the DMRs.

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 previous permit fact sheet indicated that the Operator confirmed the Outfall location of Outfall 001. The effluent leaves the chlorine contact tank and travels underground in a 6-inch PVC pipe buried in the right-of-way along Twinbrook Road, all the way down the hill, exiting into the Unnamed Tributary at the head wall that allows the Unnamed Tributary to flow Twinbrook Road.

There are no representative stream gages in the vicinity of the outfall. The state-wide default is significantly less than the USGS StreamStats data and does not appear to be accurate for the small unnamed tributary. The previous permit utilized USGS for modeling. USGS StreamStats was used to model the flow again for this permit cycle. River Mile Index (RMI) values were obtained using the Department's eMapPA, drainage areas were delineated using USGS's StreamStats interactive map, and elevations were obtained using the elevation profile tool on StreamStats. Modeling can be seen starting on page 8 of this fact sheet.

The existing permit expired on April 30, 2019 and the application for renewal was received on time.

A Water Management System Inspection query indicated that on January 11, 2024 a Compliance Evaluation was performed.

There are currently two open violations for this facility that may need to be resolved before issuance of the final permit:

1. 01/11/2024 - Violation ID 8172072 – Violation Code 92A.44 – NPDES – Violation of effluent limits in Part A of permit.

2. 01/11/2024 - Violation ID 8172073 – Violation Code 92A.41(A)10C – NPDES – Failure to collect representative samples.

Sludge use and disposal description and location(s): As per the permittee's NPDES Renewal Application, sludge is hauled to the Lehigh County Authority Pre-Treatment Wastewater Facility 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)	0.02
Latitude	40º 43' 34.70"	Longitude	-75º 28' 22.22"
Quad Name	Catasauqua	Quad Code	1342
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Hokendauqua Creek (CWF, MF)	Stream Code	3679
NHD Com ID	26293693	RMI	0.756
Drainage Area	0.97	Yield (cfs/mi^2)	0.038
Q_{7-10} Flow (cfs)	0.037	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	484.91	Slope (ft/ft)	-
Watershed No.	2-C	Chapter 93 Class.	CWF, MF
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	LCA Allentown - PWS Surface Water Intake by Bucky Boyle Park with another Intake for Hamilton Street Dam downstream (~0.4 miles).		
PWS Waters	Lehigh River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	~ 12 miles

Treatment Facility Summary

Treatment Facility Name: Whispering Hollow South STP

WQM Permit No.	Issuance Date	Scope
4870406	6/2/1970	Original WQM Permit
4892401	11/20/1992	Approval of existing equalization tank and existing sludge holding tank (constructed December 1991)
4806408	4/10/2007	Modification to an existing 8,500-gallon steel tank to be used as an additional dosing chamber.
4817402	**7/10/2018**	replacement/enlarged 15,000 gallons EQ Tank (sized for 0.035 MGD peak flow) and 15,000 gallons Aerated Sludge Holding Tank under review. No increase in STP capacities proposed.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Chlorination and de-chlorination	0.0124 (2020-2022)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.02	41.7	Not Overloaded	Aerobic Digestor	Hauled

Compliance History

DMR Data for Outfall 001 (from September 1, 2023 to August 31, 2024)

Parameter	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23
Flow (MGD) Average Monthly	0.0131	0.0139	0.0125	0.0141	0.0148	0.0149	0.0148	0.0196	0.0184	0.0137	0.0158	0.0167
Flow (MGD) Daily Maximum	0.0216	0.0245	0.0253	0.0248	0.0432	0.0252	0.0248	0.0430	0.0410	0.0258	0.1200	0.0979
pH (S.U.) Instantaneous Minimum	7.16	6.89	6.94	7.09	7.08	6.95	6.90	7.03	7.03	7.06	7.15	7.03
pH (S.U.) Instantaneous Maximum	7.63	7.26	7.36	7.56	7.46	7.59	7.81	7.48	7.52	7.50	7.59	7.44
DO (mg/L) Instantaneous Minimum	6.2	6.0	5.2	6.1	8.5	9.1	10.4	9.8	10.0	9.0	7.4	6.1
TRC (mg/L) Average Monthly	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
TRC (mg/L) Instantaneous Maximum	0.11	0.06	0.11	0.04	0.07	0.07	0.06	0.03	0.03	0.04	0.13	0.02
CBOD5 (lbs/day) Average Monthly	< 0.2	< 0.3	< 0.2	< 0.2	< 0.2	< 0.3	< 0.2	< 0.3	< 0.3	< 0.2	< 0.3	0.3
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	17.9	38.2	20.8	70.6	14.3	26.3	22.3	29.1	20.3	22.5	34.5	19.2
CBOD5 (mg/L) Average Monthly	< 2.7	< 2.3	< 2.1	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.7	< 2.0	< 2.1	2.4
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	197	272	199	679	122	184	205	235	220	206	288	186
CBOD5 (mg/L) Daily Maximum	3.3	2.6	2.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	3.3	< 2.0	2.1	2.6
CBOD5 (mg/L) Raw Sewage Influent Daily Maximum	197	272	199	679	122	184	205	235	220	206	288	186
CBOD5 % Removal (%) Average Monthly	98.3	99.3	98.9	99.7	98.4	98.9	99.0	99.1	98.5	99.0	99.3	98.6

TSS (lbs/day) Average Monthly	< 0.4	< 4.0	< 0.4	< 0.4	< 0.5	< 0.5	< 0.4	< 0.5	< 0.4	< 0.4	< 0.6	< 0.5
TSS (mg/L) Average Monthly	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TSS (mg/L) Daily Maximum	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	4.0	< 4.0	< 4.0	< 4.0
Total Dissolved Solids (lbs/day) Average Quarterly			137			142.4			235.9			208.3
Total Dissolved Solids (mg/L) Average Quarterly			1170			1150			1970			1650
Total Dissolved Solids (mg/L) Daily Maximum			1170			1150			1970			1650
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 7	< 1	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	44	< 1	< 1	< 1
Total Nitrogen (lbs/day) Average Monthly	5.84	7.38	7.53	7.14	6.60	7.88	5.21	4.58	4.73	6.10	6.43	6.64
Total Nitrogen (mg/L) Average Monthly	64.1	52.5	71.9	68.7	56.3	55.1	48.0	37.0	51.3	55.9	53.7	64.4
Total Nitrogen (mg/L) Daily Maximum	64.1	52.5	71.9	68.7	56.3	55.1	48.0	37.0	51.3	55.9	53.7	64.4
Ammonia (lbs/day) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ammonia (mg/L) Average Monthly	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Ammonia (mg/L) Daily Maximum	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nitrate (lbs/day) Average Monthly	5.6	7.1	7.2	6.9	6.5	7.6	5.0	4.5	4.7	5.9	6.2	6.3
Nitrate (mg/L) Average Monthly	61.6	50.3	68.9	66.6	55.1	53.4	46.3	36.2	51.4	53.9	51.7	61.5
Nitrate (mg/L) Daily Maximum	61.6	50.3	68.9	66.6	55.1	53.4	46.3	36.2	51.4	53.9	51.7	61.5
Nitrite (lbs/day) Average Monthly	< 0.02	< 0.01	< 0.02	< 0.02	< 0.2	< 0.03	< 0.01	< 0.01	< 0.01	< 0.10	< 0.02	< 0.02
Nitrite (mg/L) Average Monthly	< 0.2	< 0.10	< 0.20	< 0.2	< 0.2	< 0.2	< 0.10	< 0.1	< 0.1	< 0.10	< 0.2	< 0.2

Nitrite (mg/L) Daily Maximum	< 0.2	< 0.10	< 0.20	< 0.2	< 0.2	< 0.2	< 0.10	< 0.1	< 0.1	< 0.10	< 0.2	< 0.2
TKN (lbs/day) Average Monthly	0.2	0.3	0.3	0.2	0.2	0.2	0.2	< 0.1	0.1	0.2	0.2	0.3
TKN (mg/L) Average Monthly	2.5	2.2	3.0	2.1	1.3	1.7	1.7	< 0.7	1.4	2.1	2.0	3.0
TKN (mg/L) Daily Maximum	2.5	2.2	3.0	2.1	1.3	1.7	1.7	< 0.7	1.4	2.1	2.0	3.0
Total Phosphorus (lbs/day) Average Monthly	0.7	1.7	1.1	0.9	0.9	1.0	0.7	0.7	0.6	0.8	0.8	0.8
Total Phosphorus (mg/L) Average Monthly	7.15	12.30	10.4	9.08	7.56	6.78	6.29	5.33	6.33	7.52	7.01	7.51
Total Phosphorus (mg/L) Daily Maximum	7.15	12.30	10.4	9.08	7.56	6.78	6.29	5.33	6.33	7.52	7.01	7.51
Acrylamide (mg/L) Annual Average									GG			
Acrylamide (mg/L) Daily Maximum									GG			

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.02
Latitude 40º 43' 27.70" **Longitude** -75º 28' 19.50"
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)
E.Coli	Report	IMAX	-	92a.61
Dissolved Oxygen	5.0	Minimum	-	BPJ

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model
Total Residual Chlorine	0.18	Average Monthly	TRC Calculation Spreadsheet
	0.60	IMAX	
Ammonia-Nitrogen May 1 - Oct 31	5.0	Average Monthly	WQM 7.0
	10.0	IMAX	
Ammonia-Nitrogen Nov 1 - Apr 30	15.0	Average Monthly	
	30.0	IMAX	
CBOD5 Minimum % Removal (%)	85	Minimum Monthly Average	Updated DRBC Docket D-2018-002-2 Requirement
CBOD5 Raw Sewage Influent	Report	Average Monthly	Existing DRBC Requirements
Total Nitrogen	Report	Average Monthly	
Nitrate as N	Report	Average Monthly	
Nitrite an N	Report	Average Monthly	
Total Kjeldahl Nitrogen	Report	Average Monthly	
Total Phosphorus	Report	Average Monthly	

Anti-Backsliding

No limitations were made less stringent.

Modeling Using USGS StreamStats:

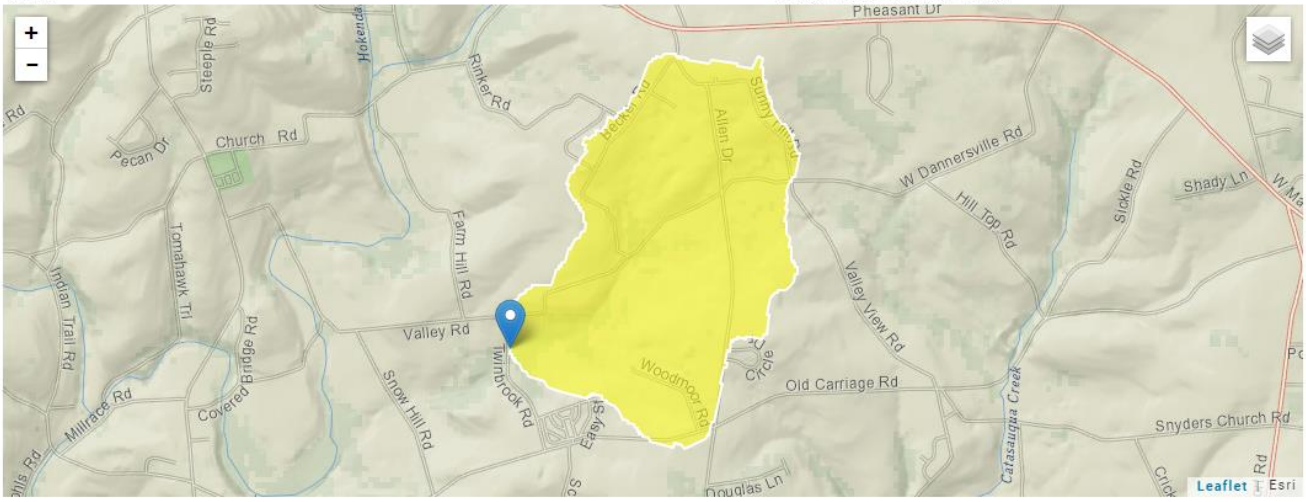
At Outfall 001 on Unnamed Tributary to Hokendauqua Creek:

RMI	Elevation (ft)	Drainage Area (mi^2)	Q_{7-10} Flow (cfs)
0.756	484.91	0.97	0.037

$$Low\ Flow\ Yield\ using\ StreamStats = \frac{0.037\ ft^3/sec}{0.97\ mi^2} = \mathbf{0.046}\ \frac{\boldsymbol{ft^3/sec}}{\boldsymbol{mi^2}}$$

StreamStats Report

Region ID:	PA
Workspace ID:	PA20241009183617859000
Clicked Point (Latitude, Longitude):	40.72638, -75.47262
Time:	2024-10-09 14:36:42 -0400



Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	0.97	square miles

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

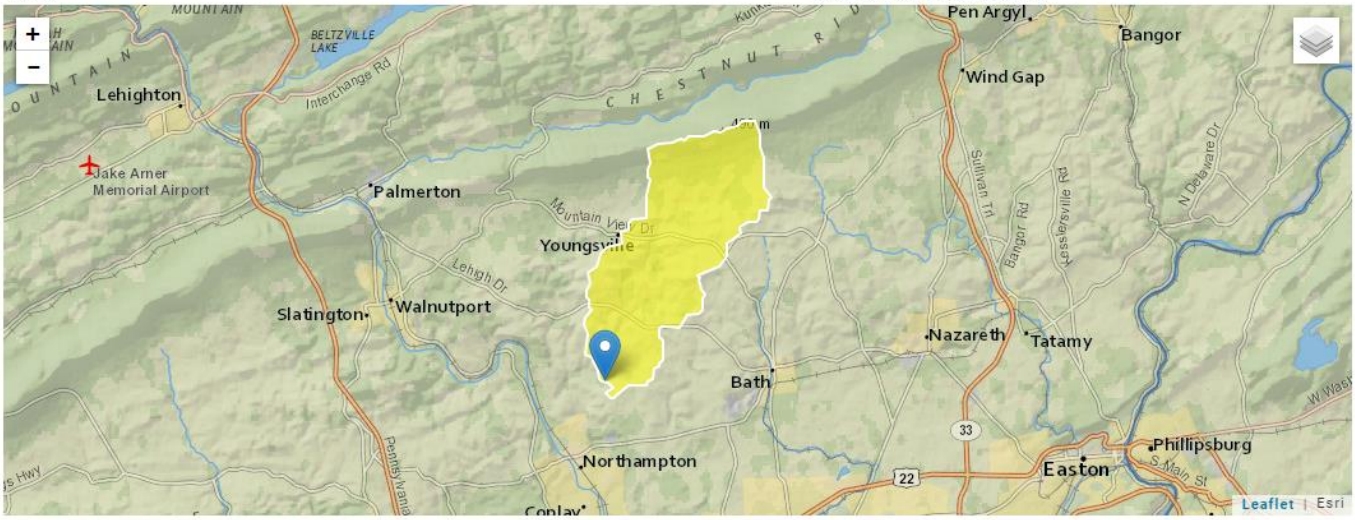
Statistic	Value	Unit
7 Day 2 Year Low Flow	0.139	ft^3/s
30 Day 2 Year Low Flow	0.217	ft^3/s
7 Day 10 Year Low Flow	0.037	ft^3/s

At confluence with Unnamed Hokendauqua Creek (4850):

RMI	Elevation (ft)	Drainage Area (mi^2)
0.0 6.314 (on Hokendauqua Creek)	401.38	20.7

StreamStats Report

Region ID:	PA
Workspace ID:	PA20241009184223652000
Clicked Point (Latitude, Longitude):	40.72111, -75.48453
Time:	2024-10-09 14:42:51 -0400



Parameter Code	Parameter Name	Value	Units
DRNAREA	Drainage Area	20.7	square miles

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
02C	3679	Trib 03679 to 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)
0.756	WhisperHollow S	PA0033740	0.020	CBOD5	25		
				NH3-N	4.38	8.76	
				Dissolved Oxygen			3

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.037	= Q stream (cfs)	0.5	= CV Daily
0.02	= 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 =	0.400	1.3.2.iii	WLA cfc =	0.383
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.149	5.1d	LTA_cfc =	0.223

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.184	AFC
		INST MAX LIMIT (mg/l) =	0.601	

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)

DRBC Docket D-2018-002-2.pdf

Monitoring_Report _464742.pdf

Combined WQM 7.0 - Whispering Ho

Pennsylvania
Department of
Environmental Protection

Approve	Deny	Signatures	Date
X		/s/ Allison S. Zukosky / Project Manager	October 15, 2024
X		/s/ Amy M. Bellanca, P.E. / Acting Engineer Manager	10-28-24