Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0028398**
Facility Type	**Non-Municipal**	APS ID	**1066733**
Major / Minor	**Minor**	Authorization ID	**1401870**

Applicant and Facility Information

Applicant Name	**Fairview Sanitary Co.**	Facility Name	**Whitehall Village WWTP**
Applicant Address	PO Box 723	Facility Address	Tulip Drive
	Fairview, PA 16415-0723		Fairview, PA 16415
Applicant Contact	Julio Pazmino	Facility Contact	Julio Pazmino
Applicant Phone	(814) 572-0139	Facility Phone	(814) 397-5334
Client ID	77750	Site ID	254799
Ch 94 Load Status	Not Overloaded	Municipality	Fairview Township
Connection Status	No Limitations	County	Erie
Date Application Received	June 29, 2022	EPA Waived?	Yes
Date Application Accepted	June 29, 2022	If No, Reason	-

Purpose of Application: Renewal of NPDES permit.

Summary of Review

The applicant is requesting renewal of their NPDES permit to discharge up to 0.07 MGD of treated sewage from the Whitehall Village WWTP into an unnamed dry / intermittent tributary to Trout Run, a cold water and migratory fish (CWF, MF) receiving stream in state water plan basin 15-A (Lake Erie). As 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. Trout Run is listed as impaired for siltation with crop production in the watershed listed as the impairment source according to the 2024 Integrated Water Quality Report.

Technology-based effluent limitations for pH, $CBOD_5$, Total Suspended Solids, Total Residual Chlorine (TRC), and Fecal Coliform are carried over from the previous permit. Water quality-based effluent limitations for Dissolved Oxygen (DO), Ammonia-N, and Total Phosphorus are carried over from the previous permit.

More stringent limitations were not recommended after remodeling the discharge with WQM 7.0 and the TRC calculation spreadsheet (see below). Since the unnamed tributary to Trout Run is considered dry / intermittent with no aquatic life present, the confluence with Trout Run is used as the first modeling point. For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA as well as the "measure" tool. Drainage areas were delineated using USGS's StreamStats interactive map and elevations were obtained using the elevation profile feature of StreamStats (see below).

The Low Flow Yield (LFY) and Q_{7-10} for discharges to the Lake Erie drainage basin are calculated using the average of 3 different gage stations. The gage stations were recommended by the Department's hydrogeologist during the previous renewal: 04212100 – Grand River, Painsville, OH, 04213500 – Cattaraugus Creek, Gowanda, NY, and 04213075 – Brandy Run - Girard, PA. The average LFY was calculated to be 0.079 cfs/mi^2 (see below).

Approve	Deny	Signatures	Date
X		Brian Burden, E.I.T. / Project Manager	December 24, 2024
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	December 27, 2024

Summary of Review

The draft permit of the previous renewal (effective February 1, 2018) included new daily monitoring requirements for TRC, pH, and DO which was in accordance with the recommended frequencies found in Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (doc. No. 362-0400-001). During the public comment period, the permittee requested 2/week sampling for those parameters. DEP's response to the comment stated: *The Department has recognized that this increase in monitoring can be a hardship for facilities and that Regions' can provide reasonable monitoring relief for the next permit cycle. The daily sampling is part of Department Standard Operating Procedure (SOP) guidelines for these parameters. We can change the frequency to 3/week, to be consistent with what was given to other permittees that have made similar requests. It is expected that daily monitoring will be imposed in the next permit renewal. The final permit reflects this decision.*

Daily monitoring requirements are included in this renewal for TRC, pH, and DO. As a result, all monitoring frequencies for parameters with limitations are now consistent with the recommended frequencies found in 362-0400-001.

Quarterly monitoring/reporting requirements for Total Nitrogen are carried over from the previous permit. Quarterly monitoring/reporting for E. Coli is added to the permit as per current guidance.

DEP's Toxics Management Spreadsheet was not utilized during this renewal since no sample results for toxic pollutants are available in the renewal application or eDMR. There are no commercial or industrial users in the sewage collection system.

All Part C conditions from the previous permit are carried over in this renewal.

Sludge use and disposal description and location(s): The renewal application indicates 5.098 dry tons of sludge was hauled to McKean Township via Don Green Sanitation during the previous year.

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)	0.07
Latitude	42º 3' 14"	Longitude	-80º 15' 56"
Quad Name	Fairview	Quad Code	0203
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Trout Run (CWF, MF)	Stream Code	62477 (Trout Run)
NHD Com ID	123923024	RMI	0.435 (UNT to Trout Run) 0.2 (Trout Run)
Drainage Area	0.215 mi^2 (UNT to Trout Run) 7.12 mi^2 (Trout Run)	Yield (cfs/mi^2)	0.079**
Q_{7-10} Flow (cfs)	0.56 (Trout Run)	Q_{7-10} Basis	See discussion above
Elevation (ft)	661 (Outfall 001) 591 (Trout Run confluence)	Slope (ft/ft)	0.028
Watershed No.	15-A	Chapter 93 Class.	CWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Crop Production		
TMDL Status	-	Name	-

Background/Ambient Data *		Data Source *
pH (SU)	8.0	Historically used in modeling Trout Run
Temperature (°F)	20	Default temp value for a CWF stream
$CBOD_5$ (mg/L)	2	Default value
NH_3-N (mg/L)	0.1	Default value

Nearest Downstream Public Water Supply Intake Location: Lake Erie

* background / ambient data information carried over from previous renewal

** during the previous renewal, the LFY was calculated to be 0.074 cfs/mi^2 as an average of the three recommended stream gages. The same gages were used to calculate the 0.079 cfs/mi^2 LFY during this renewal.

Treatment Facility Summary

Treatment Facility Name: Whitehall Village Sewage Treatment Facility

WQM Permit No.	Issuance Date
2575407	1/6/76
2511404	6/6/12

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with Ammonia Reduction	Extended Aeration	Hypochlorite	---

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.07	119	Not Overloaded	Settled	Hauled

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.07
Latitude 42º 3' 14" **Longitude** -80º 15' 56"
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	-	-
Total Suspended Solids	30.0	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	60.0	IMAX	-	-
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)
	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)
	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
	1.6	IMAX	-	-

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model / Basis
Ammonia-N (5/1 – 10/31)	5.5	Average Monthly	WQM 7.0 (2018 renewal)
	11.0	IMAX	
Ammonia-N (11/1 – 4/30)	16.5	Average Monthly	
	33.0	IMAX	
Dissolved Oxygen	4.0	Instant. Minimum	WQM 7.0 (2018 renewal)
Total Phosphorus	1.0	Average Monthly	1969 International Joint Committee requirement

Monitoring Requirements

Parameter / Pollutant	SBC
Flow	Average Monthly
Total Nitrogen	Average Monthly
E. Coli	IMAX

Anti-Backsliding

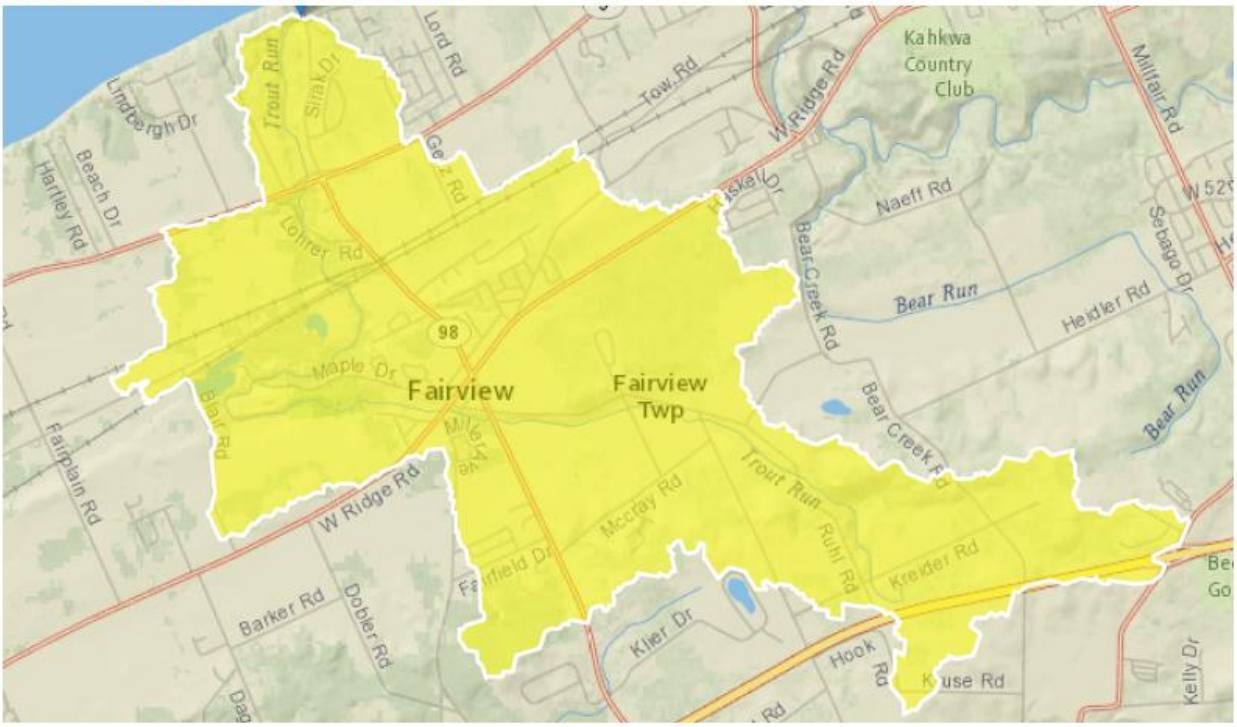
No limitations were removed from the permit or made less stringent.

Watershed Information

@ confluence of unnamed tributary with Trout Creek

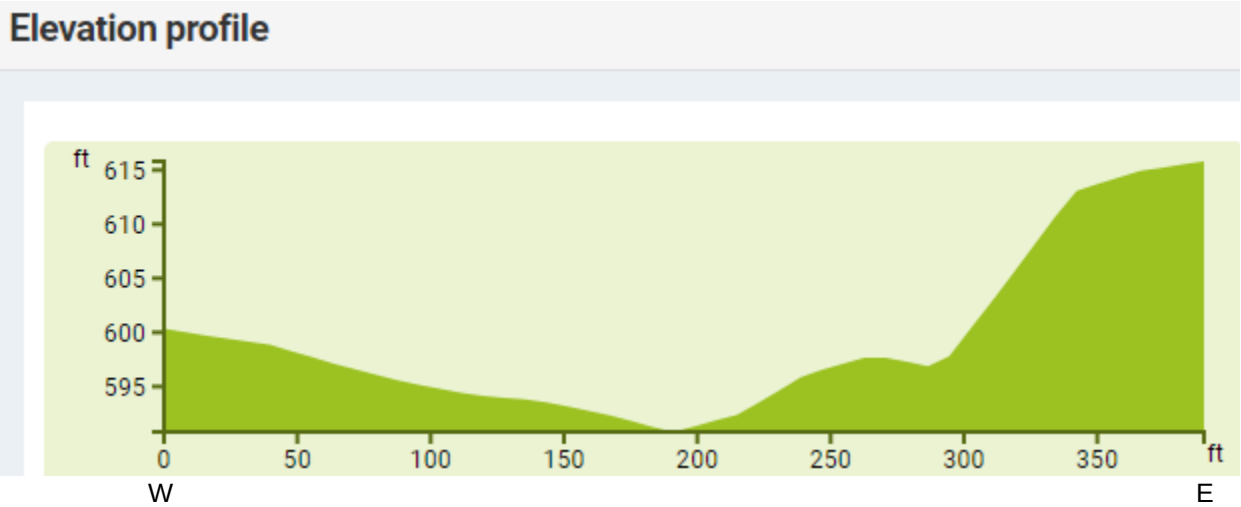
RMI = 0.2

Clicked Point (Latitude, Longitude): 42.05686, -80.27193
Time: 2024-12-21 16:16:24 -0500



DRNAREA	Area that drains to a point on a stream	7.12	square miles

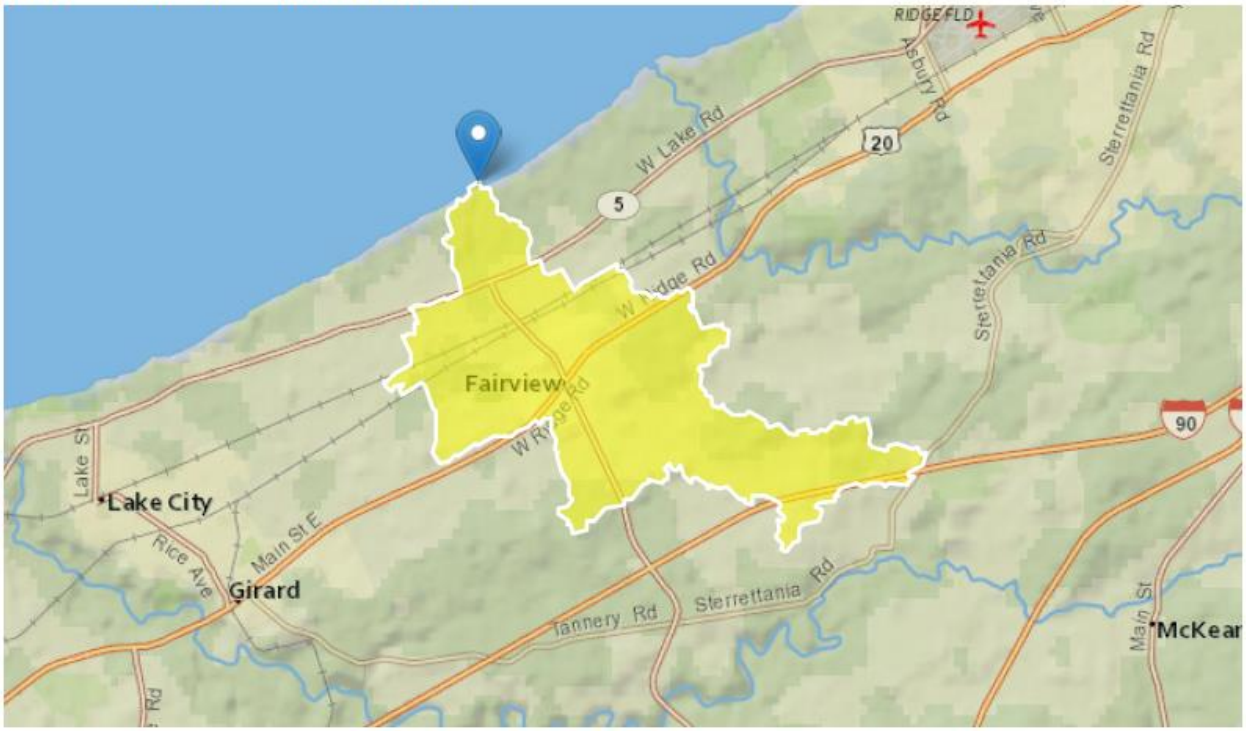
Elevation: 591 ft



@ confluence of Trout Creek with Lake Erie

RMI = 0

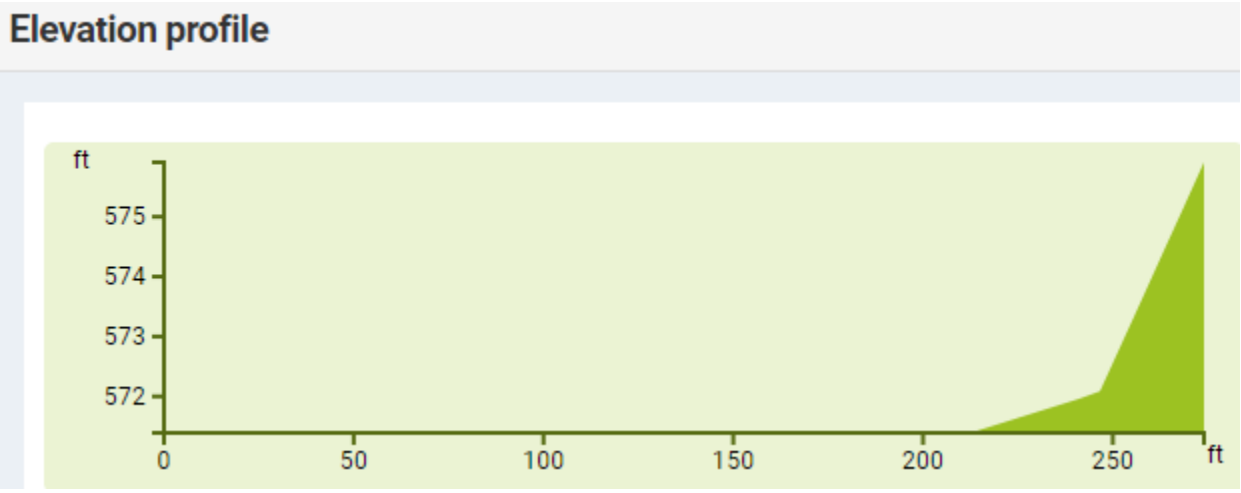
Clicked Point (Latitude, Longitude): 42.05939, -80.27244
Time: 2024-12-21 16:21:20 -0500



DRNAREA	Area that drains to a point on a stream	7.16	square miles

*Drainage Area only includes Trout Creek watershed. Lake Erie drainage area is excluded.

Elevation: 571 ft



N (Lake Erie) S (Trout Creek confluence)

WQM 7.0 Modeling

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
15	62477	TROUT RUN	**0.200**	597.00	7.12	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.079	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	8.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Whitehall Vlg	PA0028398a	0.0700	0.0700	0.0700	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.10	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
15	62477	TROUT RUN	**0.010**	571.00	7.16	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.079	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	8.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	0.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
15	62477	TROUT RUN

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.200	0.56	0.00	0.56	.1083	0.02592	.501	10.71	21.39	0.13	0.093	20.81	7.61
Q1-10 Flow												
0.200	0.36	0.00	0.36	.1083	0.02592	NA	NA	NA	0.10	0.114	21.16	7.51
Q30-10 Flow												
0.200	0.76	0.00	0.76	.1083	0.02592	NA	NA	NA	0.14	0.080	20.62	7.67

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	2		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
15	62477	TROUT RUN

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.200	Whitehall Vlg	5.31	22.62	5.31	22.62	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.200	Whitehall Vlg	1.24	9.32	1.24	9.32	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
0.20	Whitehall Vlg	25	25	9.32	9.32	3	3	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
15	62477	TROUT RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.200	0.070	20.807	7.610
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
10.713	0.501	21.393	0.125
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.71	1.037	1.59	0.745
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.397	19.748	Owens	2
Reach Travel Time (days)			
0.093			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.009	5.66	1.58	7.55
0.019	5.60	1.57	7.67
0.028	5.54	1.56	7.78
0.037	5.49	1.54	7.86
0.046	5.43	1.53	7.94
0.056	5.38	1.52	8.00
0.065	5.33	1.51	8.06
0.074	5.27	1.50	8.10
0.084	5.22	1.49	8.12
0.093	5.17	1.48	8.12

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
15	62477	TROUT RUN

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)
0.200	Whitehall Vlg	PA0028398a	0.070	CBOD5	25		
				NH3-N	9.32	18.64	
				Dissolved Oxygen			3

Tuesday, December 24, 2024 Version 1.0b

TRC Calculation Spreadsheet

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.56	= Q stream (cfs)	0.5	= CV Daily
0.07	= 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 = 1.669	1.3.2.iii	WLA cfc = 1.619
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.622	5.1d	LTA_cfc = 0.941

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	

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)

Stream Gage Information

USGS Station Number	04212100
Station Name	Grand River near Painesville OH
Station Type	Gaging Station, continuous record
Latitude	41.71893
Longitude	-81.22788
NWIS Latitude	41.7189339
NWIS Longitude	-81.2278789
Is regulated?	false
Agency	United States Geological Survey
NWIS Discharge Period of Record	10/01/1974 - 12/22/2024
Drainage Area	685 square miles
7 Day 10 Year Low Flow	9 cubic feet per second

LFY = 9 cfs / 685 mi^2 = 0.013 cfs/mi^2

USGS Station Number	04213500
Station Name	CATTARAUGUS CREEK AT GOWANDA NY
Station Type	Gaging Station, continuous record
Latitude	42.46395
Longitude	-78.93504
NWIS Latitude	42.46344444
NWIS Longitude	-78.9345278
Is regulated?	false
Agency	United States Geological Survey
NWIS Discharge Period of Record	11/09/1939 - 12/22/2024
Drainage Area	436 square miles

$Q_{7\text{-}10}$ = 69.6 cfs (from previous renewal; current low flow data from USGS Streamstats is unavailable)

LFY = 69.6 cfs / 436 mi^2 = 0.159 cfs/mi^2

USGS Station Number	04213075
Station Name	Brandy Run near Girard, Pa.
Station Type	Gaging Station, continuous record
Latitude	41.992
Longitude	-80.29118
NWIS Latitude	41.99195079
NWIS Longitude	-80.2911584
Is regulated?	false
Agency	United States Geological Survey
NWIS Discharge Period of Record	05/14/1986 - 12/23/2024

Drainage Area	4.45	square miles
7 Day 10 Year Low F low	0.3	cubic feet per second

LFY = 0.3 cfs / 4.45 mi^2 = 0.067 cfs/mi^2

Average LFY of 3 stream gages = (0.013 + 0.159 + 0.067) / 3 = 0.079 cfs/mi^2