Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0219185**
Facility Type	**Municipal**	APS ID	**1097421**
Major / Minor	**Minor**	Authorization ID	**1455944**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Glen Campbell Borough Indiana County**	Facility Name	**Glen Campbell Borough WTP**
Applicant Address	P O Box 43	Facility Address	State Route 286 North
	Glen Campbell, PA 15708		Glen Campbell, PA 15706
Applicant Contact	Dave Lucas	Facility Contact	
Applicant Phone	(814) 845-7861	Facility Phone	
Client ID	145809	Site ID	262079
Ch 94 Load Status	Not Overloaded	Municipality	Glen Campbell Borough
Connection Status	No Limitations	County	Indiana
Date Application Received	September 18, 2023	EPA Waived?	Yes
Date Application Accepted	October 4, 2023	If No, Reason	
Purpose of Application	This is an application to renew the NPDES Permit for Glen Campbell Boroughs Sewage Treatment Plant.		

Summary of Review

Glen Campbell Borough owns a Sewage Treatment Plant that collects and treats domestic sewage from approximately 220 residents. Sewage at the facility is treated through flow equalization, extended aeration, final clarification, and chlorine disinfection.

Key changes on this renewal include an increased monitoring frequency for Total Nitrogen and Total Phosphorous, addition of E. Coli monitoring, and a TRC Compliance schedule as the facility does not already meet the new limit more than 75% of the time.

Sludge use and disposal description and location(s): 2.7 Dry Tons of sewage/biosolids are disposed of offsite at West Branch, Northern Cambria or Punxsutawney Sewer Authority.

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.

Approve	Deny	Signatures	Date
X		Dustin Hargenrater Dustin Hargenrater / Project Manager	March 5, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	March 6, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.034
Latitude	40º 49' 3"	Longitude	-78º 49' 13"
Quad Name	Burnside	Quad Code	40078G7
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to West Branch Susquehanna River (CWF)	Stream Code	38162
NHD Com ID	61834833	RMI	0.11
Drainage Area	1.64	Yield (cfs/mi^2)	0.0507
Q_{7-10} Flow (cfs)	0.0832	Q_{7-10} Basis	USGS - StreamStats
Elevation (ft)	1351	Slope (ft/ft)	---
Watershed No.	8-B	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	

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°F)	60	Default
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake	PA American Water Company – White Deer		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	>100

Changes Since Last Permit Issuance: This facility has not been modeled since the original permitting of the facility so more recent data is being used. Modeling outputs did not suggest more stringent limits; however, the modeling output files will be attached to ensure an updated model is present in the permit file.

Compliance History

DMR Data for Outfall 001 (from February 1, 2024 to January 31, 2025)

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
Flow (MGD) Average Monthly	0.014	0.0166	0.0131	0.0117	0.0112	0.018	0.00958	0.012	0.012	0.0269	0.0174	0.0119
Flow (MGD) Instantaneous Maximum	0.024	0.027	0.0185	0.0154	0.0157	0.0692	0.017	0.08	0.088	0.0712	0.05	0.0276
pH (S.U.) Instantaneous Minimum	7.0	7.0	7.1	7.1	6.88	6.8	6.81	6.83	6.67	6.7	6.9	6.4
pH (S.U.) Instantaneous Maximum	7.1	7.6	7.8	7.7	7.44	7.07	7.1	7.7	6.93	6.95	7.27	7.17
DO (mg/L) Instantaneous Minimum	10.0	9.2	9.61	8.0	7.88	6.8	8.6	8.40	9.0	9.11	9.89	9.36
TRC (mg/L) Average Monthly	0.23	0.26	0.25	0.28	0.29	0.25	0.29	0.29	0.28	0.31	0.29	0.30
TRC (mg/L) Instantaneous Maximum	0.45	0.48	0.47	0.49	0.50	0.49	0.48	0.48	0.48	0.46	0.47	0.46
CBOD5 (lbs/day) Average Monthly	0.4	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.8	0.3	0.3	0.2
CBOD5 (mg/L) Average Monthly	3.2	2.4	2.0	2.0	2.2	3.0	2	2.2	2.4	2.0	2.2	2.0
CBOD5 (mg/L) Instantaneous Maximum	3.63	2.61	2.0	2.0	2.4	3.4	2	2.5	2.44	2.0	2.28	2.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	29	29	16	12	11	39	14	15	87	17	17.0	25
BOD5 (mg/L) Raw Sewage Influent Average Monthly	236	225	159	130	151	339	173	198	251	124	142	276
BOD5 (mg/L) Raw Sewage Influent Instantaneous Maximum	266	248	186	165	195	452	262	209	295	148	172.0	341

TSS (lbs/day) Average Monthly	0.6	0.8	0.5	0.5	0.4	1.1	0.4	0.4	2.0	0.6	0.6	0.5
TSS (lbs/day) Raw Sewage Influent Average Monthly	17	16	11	15	7.0	24	18	16	106	17	15	26
TSS (mg/L) Average Monthly	5	5	5	5.0	5.0	9	5	5	5.0	5.0	5.0	5.0
TSS (mg/L) Raw Sewage Influent Average Monthly	139	126	114	166	103	213	225	212	282	115	135	290
TSS (mg/L) Instantaneous Maximum	5.0	5	5	5.0	5.0	13	5.0	5	5.0	5.0	5.0	5.0
TSS (mg/L) Raw Sewage Influent Instantaneous Maximum	198	144	131	200	150	254	326	276	310	120	178	380
Fecal Coliform (No./100 ml) Geometric Mean	14	5.74	3.16	1.0	2.2	13.93	2	14.9	3.87	2.83	11.8	2.24
Fecal Coliform (No./100 ml) Instantaneous Maximum	14	33	10	1.0	4	194	2	37	5.0	8.0	139.0	5
Total Nitrogen (mg/L) Daily Maximum		24										
Ammonia (lbs/day) Average Monthly	0.2	0.02	0.1	0.01	0.006	0.2	0.03	0.01	0.08	1.1	0.5	0.05
Ammonia (mg/L) Average Monthly	0.2	0.1	0.1	0.1	0.1	1.5	0.2	0.2	0.2	0.4	0.4	0.5
Ammonia (mg/L) Instantaneous Maximum	0.2	0.2	0.1	0.1	0.02	3.86	0.4	0.152	0.0118	0.126	0.4	0.5
Total Phosphorus (mg/L) Daily Maximum		3.68										

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .034
Latitude 40º 49' 3.00" **Longitude** -78º 49' 13.00"
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	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	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)

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen	4.0	Average Monthly	WQM 6.3*
Dissolved Oxygen	5.0	Instantaneous Minimum	WQM 6.3*
TRC	0.25	Average Monthly	TRC_CALC

*This discharge was modeled using WQM 7.0 however the WQM 7.0 Model produced less stringent limits for Ammonia-Nitrogen than were previously calculated. This limit is not subject to backsliding as it does not fall under any of the exceptions to backslide limits contained in 40 CFR Part 122.44 (l).2.i.

This discharge was modeled using WQM 7.0 to determine limitations for CBOD5, Ammonia-Nitrogen, and Dissolved Oxygen. The modeling results suggested that the limits for CBOD5 are appropriate. Existing Dissolved Oxygen limitations were also determined to be sufficient for the facility. Ammonia-Nitrogen limits produced by the model suggested a less stringent limit of 5.87 mg/l Monthly Average Limit and 11.74 mg/l, however due to anti-backsliding requirements these limitations will not be implemented. It seems the main difference in the models was the stream-flow figured at the receiving stream. Based on USGS – StreamStats the anticipated low-flow rate of the stream was 0.0834 cfs, the previous model used a value of 0.05 cfs for the low-flow of the stream. It is unclear where this number was derived from however this seems to be the main difference between the two models.

Total Residual Chlorine was modeled using the TRC_CALC spreadsheet to calculate effluent limitations for TRC. The modeling results for TRC_CALC suggested an average monthly limitation of 0.251 mg/l and an instantaneous maximum limitation of 0.784 mg/l. The average monthly limitation of 0.251 mg/l is more stringent than the current limits so this limit will be implemented. The facility does not already meet this limitation more than 75% of the time so a 3-year compliance schedule has been implemented into the renewal permit. The instantaneous maximum limit of 0.784 mg/l is less stringent than the current limitation and is not eligible for backsliding so the 0.51 mg/l instantaneous maximum limit that is currently in the permit will remain. Again a value of 0.05 cfs was used for the flow at the stream as well as a Coefficient of Variation of 0.03 was used in the original model which appear to be the main differences between the models and an explanation as to how a less stringent instantaneous maximum limit was calculated on the updated model.

Best Professional Judgment (BPJ) Limitations

Comments: No BPJ Limitations are being considered at this time.

Anti-Backsliding

Less stringent limitations for Ammonia-Nitrogen and TRC Instantaneous Maximum limits were calculated using updated models however due the anti-backsliding regulations contained in 40 CFR Part 122.44 (l).1, these less stringent limitations are not eligible to be applied. The facility has not requested a relaxation of these limits and already meets the limits a majority of the time so the more stringent limits will remain part of the permit.

Additional Changes

Sewage dischargers with design flows > 2,000 GPD will include monitoring, at a minimum, for Total Nitrogen and Total Phosphorous in new and reissued permits, with a monitoring frequency equivalent to conventional pollutants in Table 6-3 of the Permit Writers Manual based on the SOP for Establishing Effluent Limitations for Individual Sewage Permits.

Sewage discharges will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with a monitoring frequency of 1/year for design flows of 0.002 – 0.05 MGD based on the SOP for Establishing Effluent Limitations for Individual Sewage Permits.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through End of Interim Period 1.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report IMAX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.33	XXX	0.51	1/day	Grab
CBOD5	7.1	XXX	XXX	25	XXX	50	2/month	Grab
TSS	8.5	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Ammonia Nov 1 - Apr 30	3.4	XXX	XXX	12.0	XXX	24.0	2/month	Grab
Ammonia May 1 - Oct 31	1.1	XXX	XXX	4.0	XXX	8.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: Outfall 001, after disinfection.

Other Comments: TRC Compliance Schedule – Phase 1.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: End of Interim Period 1 through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report IMAX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.25	XXX	0.51	1/day	Grab
CBOD5	7.1	XXX	XXX	25	XXX	50	2/month	Grab
TSS	8.5	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Ammonia Nov 1 - Apr 30	3.4	XXX	XXX	12.0	XXX	24.0	2/month	Grab
Ammonia May 1 - Oct 31	1.1	XXX	XXX	4.0	XXX	8.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: Outfall 001, after disinfection.

Other Comments: TRC Compliance Schedule – Final Effluent Limitations.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report	2/month	Grab
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	Report	2/month	Grab

Compliance Sampling Location: Influent Monitoring Poin

TRC_CALC Modeling Output Files

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.083	= Q stream (cfs)	0.5	= CV Daily
0.034	= Q discharge (MGD)	0.5	= CV Hourly
20	= 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)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	0.522	1.3.2.iii	WLA cfc =	0.502
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.195	5.1d	LTA_cfc =	0.292

Source	Reference	Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.288	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.251	AFC
		INST MAX LIMIT (mg/l) =	0.784	

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)**

WQM 7.0 Modeling Output Files

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
19D	38162	Trib 38162 of Youghiogheny River	**0.110**	1351.00	1.64	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	0.051	0.08	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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
GlenCampbellSTP	PA0219185	0.0340	0.0340	0.0340	0.000	20.00	7.11

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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	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
19D	38162	Trib 38162 of Youghiogheny River	**0.000**	1335.00	1.66	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	0.051	0.08	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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	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	5.00	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
19D	38162	Trib 38162 of Youghiogheny River

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												
0.110	0.08	0.00	0.08	.0526	0.02755	.375	5.11	13.63	0.07	0.095	20.00	7.04
Q1-10 Flow												
0.110	0.05	0.00	0.05	.0526	0.02755	NA	NA	NA	0.06	0.109	20.00	7.05
Q30-10 Flow												
0.110	0.11	0.00	0.11	.0526	0.02755	NA	NA	NA	0.08	0.085	20.00	7.03

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	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19D	38162	Trib 38162 of Youghiogheny River

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
0.110	GlenCampbellST	16	32.2	16	32.2	1	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
0.110	GlenCampbellST	1.86	5.87	1.86	5.87	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.11	GlenCampbellSTP	25	25	5.87	5.87	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19D	38162	Trib 38162 of Youghiogheny River

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.110	0.034	20.000	7.039
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.107	0.375	13.632	0.071
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
10.91	1.320	2.27	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.987	22.672	Owens	5
Reach Travel Time (days)			
0.095			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.009	10.77	2.26	7.16
0.019	10.64	2.24	7.31
0.028	10.51	2.23	7.42
0.038	10.38	2.21	7.52
0.047	10.25	2.20	7.60
0.057	10.12	2.19	7.67
0.066	9.99	2.17	7.73
0.076	9.87	2.16	7.78
0.085	9.75	2.14	7.82
0.095	9.63	2.13	7.86

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19D	38162	Trib 38162 of Youghiogheny River

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)
0.110	GlenCampbellSTP	PA0219185	0.034	CBOD5	25		
				NH3-N	5.87	11.74	
				Dissolved Oxygen			5