Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0102652**
Facility Type	**Non-Municipal**	APS ID	**1110178**
Major / Minor	**Minor**	Authorization ID	**1478175**

Applicant and Facility Information

Applicant Name	**GCP Countryside LP**	Facility Name	**Countryside MHP**
Applicant Address	27777 Franklin Road Suite 300	Facility Address	8158 Bargain Road
	Southfield, MI 48034-8251		McKean, PA 16426-1322
Applicant Contact	Cathy Klotz	Facility Contact	Levi Prody
Applicant Phone	(248) 208-2500	Facility Phone	(814) 476-7759
Client ID	260430	Site ID	445154
Ch 94 Load Status	Not Overloaded	Municipality	McKean Township
Connection Status	No Limitations	County	Erie
Date Application Received	February 28, 2024	EPA Waived?	Yes
Date Application Accepted	March 28, 2024	If No, Reason	

Purpose of Application: Renewal of a NPDES Permit for an existing discharge of treated sewage

Summary of Review

This permit is for a discharge of treated domestic sewage from a manufactured home park.

There are no proposed changes to discharge quality or quantity as part of this permit renewal.

There are currently no open violations listed in EFACTS for this client (3/7/2025).

Sludge use and disposal description and location(s): Hauled offsite to a municipal WWTP when necessary.

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		Adam J. Pesek Adam J. Pesek, E.I.T. / Project Manager	March 10, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	March 10, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.05
Latitude	42º 1' 21.92"	Longitude	-80º 7' 38.33"
Quad Name	Swansville	Quad Code	0204
Wastewater Description:	Domestic Sewage		

Receiving Waters	Unnamed Tributary to Elk Creek	Stream Code	62616
NHD Com ID	134205235	RMI	1.195
Drainage Area	0.0529	Yield (cfs/mi^2)	0 (dry), 0.069 (perennial)
Q_{7-10} Flow (cfs)	0 (dry), 0.0529 (perennial)	Q_{7-10} Basis	USGS #04213075 (1988-2008)
Elevation (ft)	1074	Slope (ft/ft)	0.01263
Watershed No.	15-A	Chapter 93 Class.	CWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.8	12/12/2012 sample from Department Stream Survey.
Temperature (°C)	20	Default (CWF)
Hardness (mg/L)		
Other: NH_3-N	0.1	Default

Nearest Downstream Public Water Supply Intake		Lake Erie	
PWS Waters	Lake Erie	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approx 25.6

Changes Since Last Permit Issuance: Stream code was corrected and the RMI (RMI correlated with RMI where tributary enters Elk Creek.

Other Comments:

Treatment Facility Summary

Treatment Facility Name: Countryside Manufactured Home Park

WQM Permit No.	Issuance Date
2571412 A-1 T-6	6/18/2013

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia and Phosphorus	Stabilization Lagoon	Chlorine With Dechlorination	0.05

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.05	136	Not Overloaded		Landfill

Changes Since Last Permit Issuance: None

Other Comments:

Compliance History	
Summary of DMRs:	There have been 18 reported effluent violations in the last five years. An NOV was not issued for these violations.
Summary of Inspections:	The last facility inspection was conducted on 11/07/2024. No violations were noted but the permittee was found to be in non-compliance for failure to maintain permitted treatment units in operable condition (Lagoon 2 & 3 blowers not operable).

Other Comments:

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	0.018	0.035	0.018	0.026	0.007	0.008	0.018		0.014	0.021	0.021	0.025
Flow (MGD) Daily Maximum	0.039	0.039	0.021	0.033	0.026	0.018	0.021		0.022	0.026	0.026	0.034
pH (S.U.) Daily Minimum	7.6	7.5	7.4	7.2	7.2	7.3	7.3		7.2	7.2	7.4	7.4
pH (S.U.) Daily Maximum	7.7	7.9	7.9	7.5	7.3	7.5	7.6		7.4	7.5	7.7	7.6
DO (mg/L) Daily Minimum	8.0	7.6	6.2	5.5	5.2	5.4	5.5		5.6	5.4	5.7	5.4
TRC (mg/L) Average Monthly	0.07	0.08	0.11	0.10	0.06	0.09	0.06		0.08	0.07	0.08	0.07
TRC (mg/L) Instantaneous Maximum	0.12	0.19	0.16	0.13	0.12	0.24	0.11		0.13	0.12	0.12	0.12
CBOD5 (mg/L) Average Monthly	12.2	6.2	5.4	3.4	5.4	13.5	7.4		11.0	7.8	12.0	11.4
TSS (mg/L) Average Monthly	18.0	8.5	7.3	12.5	16.0	26.8	13.8		15.5	7.5	23.5	11.3
Fecal Coliform (No./100 ml) Geometric Mean	< 4	< 2	1	1	< 1	5	1		2	< 1	< 1	4
Fecal Coliform (No./100 ml) Instantaneous Maximum	14	< 2	2	1	< 1	29	1		4.1	1	< 1	18.7
Total Nitrogen (mg/L) Average Monthly	12.93	< 7.86	7.28	40.337	< 5.804	5.433	< 8.772		7.609	12.16	6.1663	6.37359
Ammonia (mg/L) Average Monthly	7.0	4.2	2.0	1.6	2.1	1.6	1.5		2.9	5.2	1.8	4.1
Total Phosphorus (mg/L) Average Monthly	1.3	1.0	0.9	0.5	0.8	0.6	0.8		0.9	1.0	0.8	0.7

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.05
Latitude 42º 1' 21.92" **Longitude** -80º 7' 38.33"
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)
Total Phosphorus	1.0	Average Monthly		IJC Agreement
E. Coli	Report (No./100 ml)	IMAX	-	92a.61

Comments: Monitoring for E. Coli is placed in the permit in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

Water Quality-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Model
Ammonia Nitrogen (5/01-10/31)	1.4	Average Monthly	WQM 7.0 Version 1.1
Dissolved Oxygen	6.0	Daily Min	WQM 7.0 Version 1.1
Total Residual Chlorine	0.10	Average Monthly	TRC Evaluation Spreadsheet
Total Residual Chlorine	0.35	Average Monthly	TRC Evaluation Spreadsheet

Comments: Seasonal multiplier of three (3) is applied to ammonia nitrogen in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

Upon review of eDMR data, it is evident that the permittee will not be able to meet the more string ammonia nitrogen limit consistently. Therefore, a three-year compliance schedule will be placed in the proposed draft permit to give the permittee time to evaluate/make adjustments to operations and treatment system.

Best Professional Judgment (BPJ) Limitations

Comments: A dissolved oxygen daily minimum limit of 4.0 mg/l and monitoring for total nitrogen was placed in the permit in accordance with the Department's SOP entitled "Establishing Effluent Limitations for Individual Sewage Permits."

Anti-Backsliding

N/A

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 Three Years After Permit Effective 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 Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.1	XXX	0.35	1/day	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	7.5	XXX	15.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.5	XXX	5.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2.0	2/month	Grab

Outfall 001, Effective Period: Three Years After 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		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.1	XXX	0.35	1/day	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	4.2	XXX	8.4	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.4	XXX	2.8	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	1.0	XXX	2.0	2/month	Grab

Compliance Sampling Location: Outfall 001 (after disinfection)

Other Comments: Monitoring frequency for pH and dissolved oxygen was changed to 1/day for the proposed renewed permit as was discussed in the Fact Sheet Addendum for the last NPDES Permit renewal.

Dry Reach

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	62616	Trib 62616 to Elk Creek	1.195	1074.00	0.05	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	0.001	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.50	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
Countryside MHP	PA0102652	0.0500	0.0000	0.0000	0.000	20.00	7.50

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	0.00	0.00	1.50
Dissolved Oxygen	4.00	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
15	62616	Trib 62616 to Elk Creek	**1.120**	1069.00	0.76	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	0.001	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.50	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	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	62616	Trib 62616 to Elk Creek

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												
1.195	0.00	0.00	0.00	.0773	0.01263	.394	1.88	4.76	0.10	0.044	20.00	7.50
Q1-10 Flow												
1.195	0.00	0.00	0.00	.0773	0.01263	NA	NA	NA	0.00	0.000	0.00	0.00
Q30-10 Flow												
1.195	0.00	0.00	0.00	.0773	0.01263	NA	NA	NA	0.00	0.000	0.00	0.00

WQM 7.0 Modeling Specifications

Parameters	D.O.	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	62616	Trib 62616 to Elk Creek

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)		
1.20	Countryside MHP	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
15	62616	Trib 62616 to Elk Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.195	0.050	20.000	7.500
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1.877	0.394	4.764	0.105
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
24.97	1.500	24.97	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
4.005	26.789	Owens	2
Reach Travel Time (days)			
0.044			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.004	24.80	24.89	4.02
0.009	24.64	24.82	4.03
0.013	24.48	24.74	4.04
0.018	24.32	24.66	4.05
0.022	24.16	24.59	4.07
0.026	24.00	24.51	4.08
0.031	23.85	24.44	4.10
0.035	23.69	24.36	4.11
0.039	23.53	24.29	4.13
0.044	23.38	24.21	4.15

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
15	62616	Trib 62616 to Elk 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)
1.195	Countryside MHP	PA0102652	0.050	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

Perennial Reach

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	62616	Trib 62616 to Elk Creek	**1.120**	1069.00	0.76	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	0.069	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.80	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
Countryside MHP	PA0102652	0.0500	0.0000	0.0000	0.000	20.00	7.50

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	23.38	2.00	0.00	1.50
Dissolved Oxygen	4.15	8.24	0.00	0.00
NH3-N	24.21	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	62616	Trib 62616 to Elk Creek	**0.010**	1010.00	1.10	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	0.069	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.80	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	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	62616	Trib 62616 to Elk Creek

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												
1.120	0.00	0.00	0.00	.0773	0.01007	.335	4.09	12.2	0.06	1.202	20.00	7.50
Q1-10 Flow												
1.120	0.00	0.00	0.00	.0773	0.01007	NA	NA	NA	0.06	1.202	20.00	7.50
Q30-10 Flow												
1.120	0.00	0.00	0.00	.0773	0.01007	NA	NA	NA	0.06	1.201	20.00	7.50

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	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
15	62616	Trib 62616 to Elk Creek

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
1.120	Countryside MHP	9.23	9.24	9.23	9.24	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
1.120	Countryside MHP	1.39	1.4	1.39	1.4	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)		
1.12	Countryside MHP	23.38	23.38	1.4	1.4	6	6	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
15	62616	Trib 62616 to Elk Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.120	0.050	20.000	7.500
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.092	0.335	12.204	0.056
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
23.35	1.500	1.39	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.003	23.884	Owens	6
Reach Travel Time (days)			
1.202			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.120	19.50	1.28	6.99
0.240	16.29	1.18	7.36
0.360	13.60	1.08	7.64
0.481	11.36	1.00	7.88
0.601	9.49	0.92	8.08
0.721	7.92	0.84	8.24
0.841	6.62	0.77	8.24
0.961	5.53	0.71	8.24
1.081	4.61	0.65	8.24
1.202	3.85	0.60	8.24

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
15	62616	Trib 62616 to Elk 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)
1.120	Countryside MHP	PA0102652	0.051	CBOD5	23.38		
				NH3-N	1.4	2.8	
				Dissolved Oxygen			6

1.4e^(0.7*0.44) = 1.44

TRC_CALC_external

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0529	= Q stream (cfs)	0.5	= CV Daily
0.05	= 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 = 0.237	1.3.2.iii	WLA cfc = 0.224
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.088	5.1d	LTA_cfc = 0.130

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.109	AFC
		INST MAX LIMIT (mg/l) = 0.356	

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)**

Countryside MHP
McKean Township, Erie County
PA0102652 Discharge pH

Outfall 001

Date	pH min	pH max	10^ -pH min	10^ -pH max	& pH max)	-Log (Ave pH)
Jul-21	7.4	7.6	3.98E-08	2.51E-08	3.25E-08	**7.5**
Aug-21	7.5	7.7	3.16E-08	2E-08	2.58E-08	**7.6**
Sep-21	7.3	7.6	5.01E-08	2.51E-08	3.76E-08	**7.4**
Sep-22	7.5	7.8	3.16E-08	1.58E-08	2.37E-08	**7.6**
Sep-23	7.4	7.6	3.98E-08	2.51E-08	3.25E-08	**7.5**
Jul-24	7.3	7.6	5.01E-08	2.51E-08	3.76E-08	**7.4**
Aug-24	7.3	7.5	5.01E-08	3.16E-08	4.09E-08	**7.4**
Sep-24	7.2	7.3	6.31E-08	5.01E-08	5.66E-08	**7.2**
					Median:	**7.5**

No discharge reported in July-August in 2022 and 2023