Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0218715**
Facility Type	**Non-Municipal**	APS ID	**1098231**
Major / Minor	**Minor**	Authorization ID	**1457251**

Applicant and Facility Information

Applicant Name	**Chris Arco**	Facility Name	**Garda's Restaurant STP**
Applicant Address	2033 State Route 66	Facility Address	2033 State Route 66
	Ford City, PA 16226-8902		Ford City, PA 16226-8902
Applicant Contact	Chris Arco	Facility Contact	Chris Arco
Applicant Phone	(723) 763-7676	Facility Phone	(723) 763-7676
Client ID	244070	Site ID	541655
Ch 94 Load Status	Not Overloaded	Municipality	Manor Township
Connection Status	No Limitations	County	Armstrong
Date Application Received	September 29, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES Renewal.

Summary of Review

An application was submitted for an NPDES permit renewal for an existing minor sewage facility discharge. The NPDES application states that the sewage plant is not operational. Sewage is stored in holding tanks and then hauled to a local sewage plant. The existing NPDES permit includes a Part C condition that states that discharge of sewage to the waters of the Commonwealth is prohibited until DEP authorizes the discharge. The Water Quality Management (WQM) Permit No. 0300401 A-2 was issued on February 27, 2012, and authorized installation of a Chromaglass STP, but the permit is null and void because installation had not happened on or before the second anniversary of the permit date. The Applicant must obtain a new WQM permit from DEP for construction of treatment facilities and complete construction in accordance with the WQM permit application prior to commencing discharge from this facility. The condition requires that a WQM permit application be submitted at least 90 days prior to the anticipated date for initiating construction.

The cover letter sent when the existing permit was issued reminded the Applicant that there are alternative systems that exist that they may want to have a consulting engineer evaluate. Also, if the Applicant ever obtained a holding tank permit from the local municipality, they should request in writing that this permit be terminated.

Since the Application states that the facility is still not operational, the relevant Part C language will remain in this renewal, and the Applicant will again be reminded of their options in the cover letter.

Changes to this permit: E. Coli monitoring has been added to the permit.

There are no open violations for this Applicant.

Sludge use and disposal description and locations: Disposed off-site

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	April 12, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	April 14, 2025

Summary of Review
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)	.0021
Latitude	40º 43' 14"	Longitude	79º 32' 5"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Crooked Creek (WWF)	Stream Code	46216
NHD Com ID	123860663	RMI	4.3
Drainage Area	281 mi^2	Yield (cfs/mi^2)	0.05
Q_{7-10} Flow (cfs)	13.8	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	1,239	Slope (ft/ft)	
Watershed No.	17-E	Chapter 93 Class.	WWF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	N/A		
Source(s) of Impairment	N/A		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Buffalo Township Municipal Autority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	14.5

Changes Since Last Permit Issuance: None

Other Comments: None

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0021
Latitude 40º 43' 14" **Longitude** 79º 32' 5"
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)

Comments: E. Coli monitoring has been added per Chapter 92 requirements.

Water Quality-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Model
NH3-N	25	Avg. Mo.	WQM 7.0
$CBOD_5$	25	Avg. Mo.	WQM 7.0

Comments: DEP's SOP No. BCW-PMT-0033 states that for existing discharges, if an average monthly warm period limit of 25 mg/L is acceptable, a year-round monitoring requirement for ammonia-nitrogen, at a minimum should be established. This is consistent with the existing permit requirements. The water-quality based $CBOD_5$ limit of 25 mg/l is the same as the existing permit limit.

Additional Considerations

Total Nitrogen and Total Phosphorus will be monitored 1/year per the Departments' SOP.

A Dissolved Oxygen minimum limitation of 4.0 mg/L will be implemented based on the standard in 25 PA Code Chapter 93 and best professional judgment.

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit.

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.

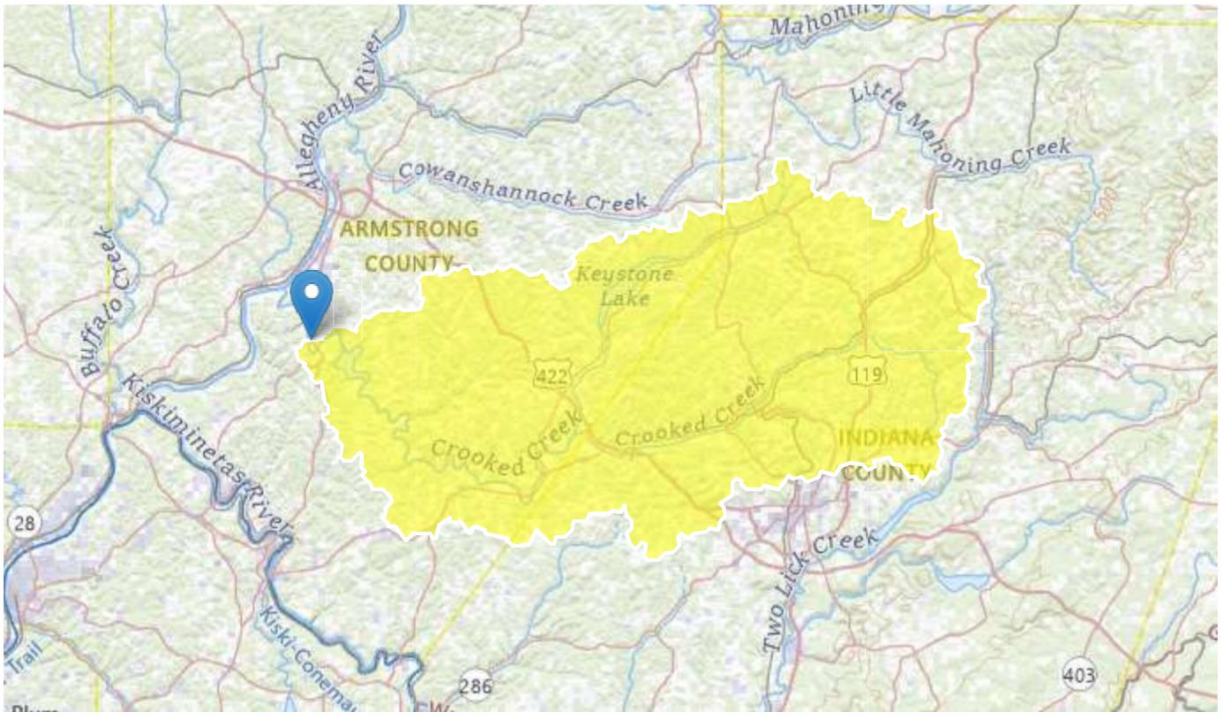
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Average Monthly	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.0021	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	0.5	XXX	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	25.0	XXX	XXX	50.0	2/month	Grab
TSS	XXX	XXX	30.0	XXX	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 Daily Max	XXX	XXX	1/year	Grab
Ammonia	XXX	XXX	Report	XXX	XXX	Report	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

Garda's Rest STP PA0218715 Outfall 001

Region ID: PA
Workspace ID: PA20250412172711336000
Clicked Point (Latitude, Longitude): 40.72062, -79.53516
Time: 2025-04-12 13:27:43 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	281	square miles
ELEV	Mean Basin Elevation	1239	feet
PRECIP	Mean Annual Precipitation	43	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	281	square miles	2.33	1720
ELEV	Mean Basin Elevation	1239	feet	898	2700
PRECIP	Mean Annual Precipitation	43	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

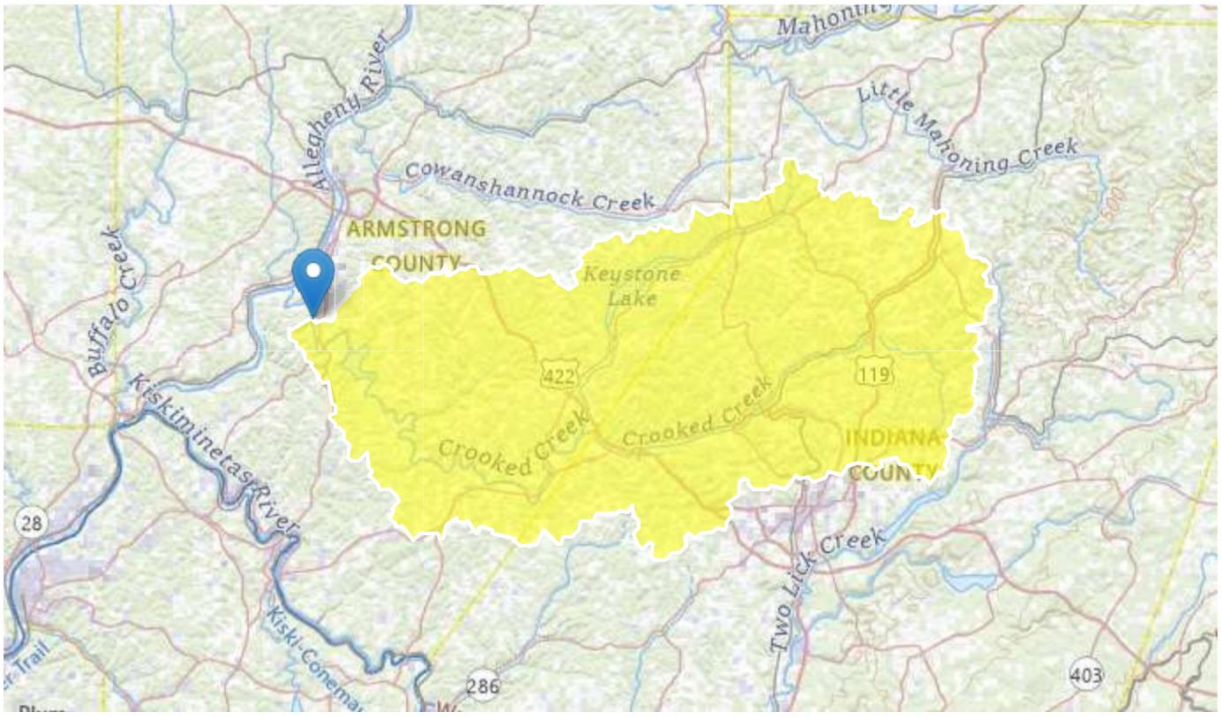
Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	26.6	ft^3/s	43	43
30 Day 2 Year Low Flow	36.5	ft^3/s	38	38
7 Day 10 Year Low Flow	13.8	ft^3/s	54	54
30 Day 10 Year Low Flow	18.7	ft^3/s	49	49
90 Day 10 Year Low Flow	26.6	ft^3/s	41	41

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Garda's Rest STP PA0218715 RMI = 3.3

Region ID: PA
Workspace ID: PA20250412173840480000
Clicked Point (Latitude, Longitude): 40.73323, -79.53958
Time: 2025-04-12 13:39:11 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	288	square miles
ELEV	Mean Basin Elevation	1235	feet
PRECIP	Mean Annual Precipitation	43	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	288	square miles	2.33	1720
ELEV	Mean Basin Elevation	1235	feet	898	2700
PRECIP	Mean Annual Precipitation	43	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	27.2	ft^3/s	43	43
30 Day 2 Year Low Flow	37.4	ft^3/s	38	38
7 Day 10 Year Low Flow	14.2	ft^3/s	54	54
30 Day 10 Year Low Flow	19.2	ft^3/s	49	49
90 Day 10 Year Low Flow	27.2	ft^3/s	41	41

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

TRC_CALC

1A	B	C	D	E	F	G
2	**TRC EVALUATION**					
3	Input appropriate values in B4:B8 and E4:E7					
4	13.8	= Q stream (cfs)		0.5	= CV Daily	
5	0.0021	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)			=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = #######		1.3.2.iii	WLA cfc = 1321.093
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 504.937		5.1d	LTA_cfc = 768.022
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
18			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)**

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
17E	46216	CROOKED CREEK	**4.300**	1239.00	281.00	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	0.100	0.00	13.80	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
Garda's Rest	PA0218715	0.0021	0.0021	0.0021	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	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
17E	46216	CROOKED CREEK	**4.300**	1239.00	281.00	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	0.100	0.00	13.80	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
Garda's Rest	PA0218715	0.0021	0.0021	0.0021	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	4.00	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
17E	46216	CROOKED 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												
4.300	13.80	0.00	13.80	.0032	0.00076	.886	68.92	77.75	0.23	0.270	20.00	7.00
Q1-10 Flow												
4.300	8.83	0.00	8.83	.0032	0.00076	NA	NA	NA	0.18	0.347	20.00	7.00
Q30-10 Flow												
4.300	18.77	0.00	18.77	.0032	0.00076	NA	NA	NA	0.27	0.228	20.00	7.00

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		

Saturday, April 12, 2025 Version 1.1 Page 1 of 1

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
17E	46216	CROOKED 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
4.300	Garda's Rest	16.76	50	16.76	50	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
4.300	Garda's Rest	1.89	25	1.89	25	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)		
4.30	Garda's Rest	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
17E	46216	CROOKED CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
4.300	0.002	20.001	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
68.916	0.886	77.755	0.226
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.01	0.004	0.01	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.242	1.168	Tsivoglou	5
Reach Travel Time (days)			
0.270			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.027	2.01	0.01	8.24
0.054	2.01	0.01	8.24
0.081	2.00	0.01	8.24
0.108	2.00	0.01	8.24
0.135	2.00	0.01	8.24
0.162	2.00	0.01	8.24
0.189	2.00	0.01	8.24
0.216	2.00	0.01	8.24
0.243	2.00	0.00	8.24
0.270	2.00	0.00	8.24

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
17E	46216	CROOKED 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)
4.300	Garda's Rest	PA0218715	0.002	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4