Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0093262**
Facility Type	**Non-Municipal**	APS ID	**1125780**
Major / Minor	**Minor**	Authorization ID	**1506611**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**PennDOT Bureau of Operations**	Facility Name	**PennDOT 12-0 Maintenance Facility & St Police Barracks**
Applicant Address	400 North Street, 6th Floor	Facility Address	172 State Route 519
	Harrisburg, PA 17120		New Bethlehem Twp, PA 15330
Applicant Contact	Nicholaus Sahd	Facility Contact	Edgar Harris
Applicant Phone	(717) 951-8685	Facility Phone	(724) 966-2278
Client ID	62162	Site ID	442960
Ch 94 Load Status	Existing Hydraulic and Projected Organic	Municipality	North Bethlehem Township
Connection Status	Dept. Imposed Connection Prohibitions	County	Washington
Date Application Received	November 14, 2024	EPA Waived?	Yes
Date Application Accepted		If No, Reason	
Purpose of Application	Renewal		

Summary of Review

Overview

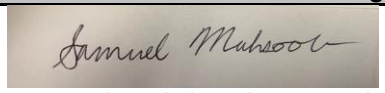
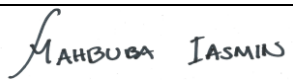
The permittee has applied to renew NPDES Permit No. PA0093262, which was last issued on June 25, 2020, and is set to expire on June 30, 2025. The facility has a design flow of .002 MGD but will be permitted as a minor sewage facility. Per the last renewal:

"The existing extended aeration process deviates significantly from the Small Flow Treatment Facilities Design Manual (362-0300-002). The existing plant requires proper operation, and the permittee employs a certified operator to ensure the plant is properly run. SFTF's do not require an operator to run the plant."

The facility discharges to a drainage swale which empties into Little Chartiers Creek, a HQ-WWF. According to the Guidance for Ephemeral and Intermittent Streams (386-2000-013), SFTFs are exempt from the advanced treatment requirements listed in the guidance. The discharge location is 40' 08" 19°, -80' 07" 53°.

The sludge and biosolids produced are hauled to a WTP for further treatment.

Act 14 Notifications were provided on October 31, 2024.

Approve	Return	Deny	Signatures	Date
x			 Sam Mahsoob / Environmental Engineering Trainee	4/2/2025
x			 Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	4/2/2025

Summary of Review

Facility History:

Part II Permit No. 6375402 issued on August 13, 1975, authorized construction of an activated sludge plant to treat flow generated from an office building. The plant was rated for an average design flow of 0.002 MGD.

Part II Permit No. 6375402-A1T2 was issued on April 30, 2013. A new replacement plant consisting of one flow equalization tank, one anaerobic chamber, one anoxic chamber, one aeration tank, one clarifier unit, one sludge holding tank, one dual media filter unit, and an ultraviolet disinfection unit was approved. The design hydraulic capacity is still 0.002 MGD.

Compliance History

Compliance check requested on 4/1/25.

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)	.002
Latitude	40’ 8” 17.92º	Longitude	-80’ 7” 55.15º
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Little Chartiers Creek (HQ-WWF)	Stream Code	36943
NHD Com ID	99694780	RMI	13.95
Drainage Area	3.11	Yield (CFS/mi^2)	.0108
Q_{7-10} Flow (cfs)	.0337	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1044	Slope (ft/ft)	.009
Watershed No.	20-F	Chapter 93 Class.	HQ-WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS, NUTRIENTS, PATHOGENS, SILTATION, SILTATION, SILTATION		
Source(s) of Impairment	REMOVAL OF RIPARIAN VEGETATION, REMOVAL OF RIPARIAN VEGETATION, RURAL (RESIDENTIAL AREAS), RURAL (RESIDENTIAL AREAS), SITE CLEARANCE (LAND DEVELOPMENT OR REDEVELOPMENT), SOURCE UNKNOWN		
TMDL Status	Final	Name	Chartiers Creek

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

Nearest Downstream Public Water Supply Intake	West View Water Authority, PWS ID 5030043		
PWS Waters	Ohio River	Flow at Intake (CFS)	4730
PWS RMI	35.26	Distance from Outfall (mi)	42.9 River Miles

Treatment Facility Summary

Treatment Facility Name: Washington County Maintenance Facility STP

WQM Permit No.	Issuance Date
6375402	August 13, 1975
6375402 A-1 T-2	April 30, 2013

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended Aeration	Ultraviolet	0.002

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.002	4.85	No overloads	Sludge holding tank	.25 tons Hauled to municipal STP

Changes Since Last Permit Issuance: None

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	0.001420	0.001027	0.000957	0.000846	0.000728	0.000657	0.000578	0.001217	0.000852	0.001230	0.001018	0.000858
pH (S.U.) Instantaneous Minimum	7.0	6.8	7.1	7.0	7.0	7.0	7.0	7.1	7.1	7.0	7.1	7.0
pH (S.U.) Instantaneous Maximum	7.4	7.2	7.4	7.3	7.2	7.2	7.2	7.3	7.3	7.3	7.2	7.2
DO (mg/L) Instantaneous Minimum	6.0	6.0	6.0	6.0	6.0	6.0	6.1	6.2	6.3	6.3	6.1	6.1
CBOD5 (mg/L) Average Monthly	3.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.0
CBOD5 (mg/L) Instantaneous Maximum	3.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.0
TSS (mg/L) Average Monthly	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
TSS (mg/L) Instantaneous Maximum	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Fecal Coliform (No./100 ml) Geometric Mean	1	1	1	1	1	1	1	1	1	1	1	1
Fecal Coliform (No./100 ml) Instantaneous Maximum	1	1	1	1	1	1	1	1	1	1	1	1
UV Intensity (mW/cm²) Instantaneous Minimum	0.3	0.4	0.6	1.0	0.6	0.6	1.3	1.3	1.1	1.2	1.1	1.1
Ammonia (mg/L) Average Monthly	1.7	0.2	2.3	0.8	0.1	0.1	0.2	0.5	1.1	0.7	0.3	0.3
Ammonia (mg/L) Instantaneous Maximum	1.7	0.2	2.3	0.8	0.1	0.1	0.2	0.5	1.1	0.7	0.3	0.3

Compliance History

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .002
Latitude 40º 8' 19.00" **Longitude** -80º 7' 53.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations (TBELs)

The following effluent limitations and monitoring requirements, at a minimum, will be established in all new and renewed SFTF permits based on the requirements of DEP's "Standard Operating Procedure (SOP) for Clean Water Program New and Reissuance Small Flow Treatment Facility Individual NPDES Permit Application" (SOP No. BCW-PMT-003, Version 1.8, Final, November 9, 2012, Revised May 17, 2019).

Parameter	Avg	IMAX	Sample Type	Frequency: SFTFs	Frequency: SRSTPs
Flow (GPD)	Report	XXX	Estimate (SRSTPs) Measured (SFTFs)	**1/month**	1/year
BOD5 (mg/L)	10	20	Grab	**1/month**	1/year
TSS (mg/L)	**10**	**20**	Grab	**1/month**	1/year
pH*	6.0 S.U. Inst. Min.	9.0 S.U.	Grab	**1/month**	1/year
Fecal Coliform (No./100 ml)	**200 Geometric Mean (SFTFs)** / Average (SRSTPs)		Grab	**1/month**	1/year

***** Technology-Based effluent limits for pH will be imposed based upon Federal Regulation 133.102(c) and State Regulation 95.2(1).

Comments: The limits for TSS and Fecal Coliform are stricter than the last renewal; therefore, they will be imposed.

Antidegradation Best Available Combination of Technologies (ABACT)

The following Antidegradation Best Available Combination of Technologies (ABACT) effluent limits, at a minimum, will be established based on the requirements in Chapter 9 and Appendix B of DEP's "Water Quality Antidegradation Implementation Guidance" (Doc. No. 391-0300-002; November 29, 2003).

Parameter	Treatment Process Performance Expectations (mg/L)		
	<2,000 gpd	2,000-50,000 gpd	>50,000 gpd
$CBOD_5$ (May 1 – Oct. 31)	**10**	10	10
$CBOD_5$ (Nov. 1 – Apr. 30)	**20**	20	10
Suspended Solids	**20**	10	10
NH_3-N (May 1 – Oct. 31)	**5.0**	3.0	1.5
NH_3-N (Nov. 1 – Apr. 30)	**15.0**	9.0	4.5
Effective disinfection	Disinfection should be accomplished using a method that leaves no detectable residual. Disinfection using ultra-violet light or other non-chlorine-based systems is encouraged and must be considered.		
Other parameters, as needed	*Determined by the size and characteristics of the proposed discharge, may include – NO_2/NO_3-N, Total Phosphorus, Copper, Lead, Zinc*		

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (Pollution Report from 1995):

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen (May 1 to Oct 31)	1.5	Average Monthly	WQAM63
Ammonia-Nitrogen (Nov 1 to Apr 30)	4.5	Average Monthly	WQAM63
Dissolved Oxygen	6	Minimum	WQAM63

Comments: These limits were determined in a WQAM63 model from a report produced in 1995. These limits are stricter than the limits determined from the most recent WQM 7.0 model; therefore, the previous limits will be maintained.

E. Coli

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 through 0.05 MGD.

(*Note 12 SOP-Establishing Effluent Limitations for Individual Sewage Permits Final November 9, 2012, Revised February 5, 2024, Version 2.0.* and *25 PA Code 92a.61(b).)*

Ultraviolet Disinfection

Ultraviolet (UV) disinfection is used; therefore, Total Residual Chlorine (TRC) limits are not applicable. Routine monitoring of UV intensity is at the same monitoring frequency that is used for TRC.

(*Section I.A, Note 4, SOP for Clean Water Program, Establishing Effluent Limitations for Individual Sewage Permits, Final November 9, 2012, Revised March 24, 2021, Version 1.9* and *25 PA Code 92a.61(b)*.)

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation. Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(40 CFR 122.44 (l)(2) Establishing limitations, standards, and other permit conditions., 40 CFR Ch. I (7-1-21 Edition))

No permits limits have been made less stringent in the renewal draft permit.

Additional Considerations

Effluent Multipliers

Section 2.C of the Permit Writers Manual contains the procedure for converting average monthly effluent limitations to average weekly, maximum daily, and instantaneous maximum effluent limitations. The average monthly limit is multiplied according to the following chart:

Discharge Solution	Parameters	Average Weekly	Maximum Daily	Instantaneous Maximum Multiplier
Sewage	All	1.5		2.0
Industrial	All		2.0	2.5*

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

Rounding

Section 5 C.2. of the Permit Writers Manual contains general guidelines for rounding conventional and toxic pollutants, with instructions to round down to the nearest decimal place indicated.

General Magnitude	Conventional Pollutants	Toxic Pollutants
<0.01	to nearest 0.001	to nearest 0.001
0.01 - 0.1	to nearest 0.01	to nearest 0.01
0.1 - 1.0	to nearest 0.1	to nearest 0.01
1.0 - 10.0	to nearest 0.5	to nearest 0.01
10.0 - 60.0	to nearest 1.0	to nearest 0.01
60.0 or greater	to nearest 5.0	to nearest 0.10

(Department Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits, Updated June 28, 2023 (Document No. 362-0400-001))

TMDL

Total Maximum Daily Loads (TMDLs) were completed for the Chartiers Creek Watershed. The parameters of concern are PCBs and Chlordane (first TMDL Report), and metals and pH attributed to abandoned mine drainage (second TMDL Report). Since none of these parameters are expected to be in a domestic sewage waste stream from this small flow facility, and because any loadings from this type of facility would be insignificant, no allocations for these parameters were made in the approved TMDLs. Therefore, no limits for these parameters are necessary in the permit.

Should the STP ever increase to a hydraulic capacity of 0.02 mgd or greater, the next NPDES permit writer should be aware that a monitoring requirement should be imposed for total phosphorus. This is based on a recommendation contained in the TMDL Report dated July 2004 for Canonsburg Lake, located downstream of the facility, that requires discharges greater than 0.02 mgd to monitor and report total phosphorus monthly for a one-year period. The permittee would first need to obtain the necessary Planning Module approval, and NPDES and Water Management (Part II) permit amendments from our office before STP expansion could occur.

Table 6-3 – Self-Monitoring Requirements for SEWAGE Discharges

Plant Design Flow (MGD)	Flow Monitoring	C-BOD_5 or BOD_5	Suspended Solids	pH	Fecal Coliform	Chlorine Residual	NH_3-N	Phosphorus	DO	Toxics
Single Residence (Individual Permit)	2/year by estimate	2/year*	2/year*	1/month*	2/year*	1/month*	2/year*	2/year*	2/year*	N/A
.0005 to .002	**weekly, using average pump rate or weir (a)**	**1/month***	**1/month***	**daily***	**1/month***	**daily***	**1/month***	**1/month***	**daily***	**N/A**
.002 to .01	weekly, using average pump rate or weir (a)	2/month*	2/month*	daily*	2/month*	daily*	2/month*	2/month*	daily*	N/A
0.01 to 0.1	**weekly, using average pump rate or weir (a)**	**2/month***	**2/month***	**daily***	**2/month***	**daily***	**2/month***	**2/month***	**daily***	**1/week***
0.1 to 1.0	meter	1/week**	1/week**	daily*	1/week*	daily*	1/week**	1/week**	daily*	1/week****
1.0 to 5.0	meter	2/week***	2/week***	daily*	2/week*	daily*	2/week***	2/week***	daily*	1/week****
5.0 to 25.0	meter	daily***	daily***	daily*	daily*	1/shift*	daily***	daily***	daily*	1/week****
over 25.0	meter	daily***	daily***	1/shift*	daily*	1/shift*	1/shift***	1/shift***	1/shift*	1/week****

* Grab sample-these should be most representative of the effluent and are to be taken at a time when the normal daily maximum flow would reach the sampling point.

** 8-hour composite sample.

*** 24-hour composite sample.

**** Same sample type as for Industrial Process Wastewater (See Table 6-4).

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	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.002	XXX	XXX	XXX	XXX	XXX	1/month	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/month	Grab
DO	XXX	XXX	6.0	XXX	XXX	XXX	1/month	Grab
CBOD5	XXX	XXX	XXX	10.0	XXX	20.0	1/month	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20.0	1/month	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/month	Recorded
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	4.5	XXX	9.0	1/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3.0	1/month	Grab

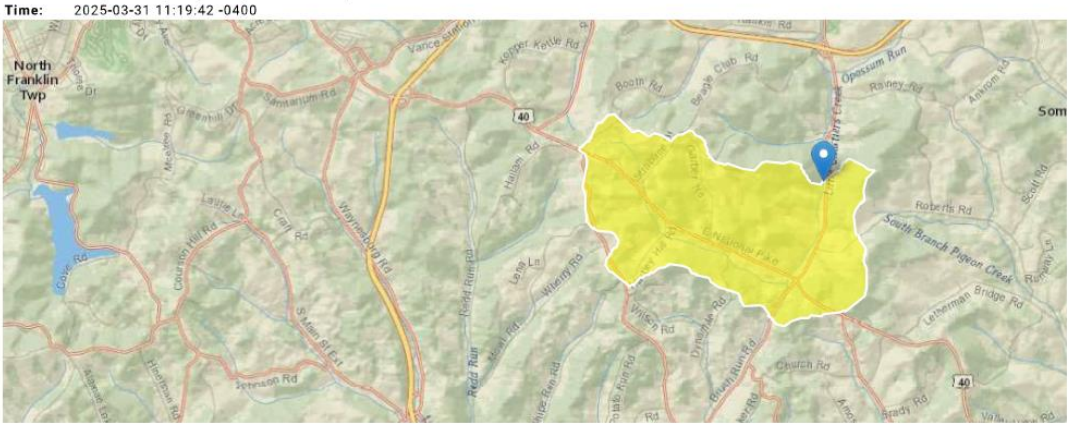
Compliance Sampling Location: Outfall 001

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachments 3&4)
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☒	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☒	SOPs: New Sewage Individual, New SFTF
☒	Other: 1995 Pollution Report (Uploaded in OnBase)

Attachment 1 – Upstream StreamStats Report

StreamStats Report

Region ID: PA
Workspace ID: PA20250331151918341000
Clicked Point (Latitude, Longitude): 40.13853, -80.13222
Time: 2025-03-31 11:19:42 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	8.0784	degrees
DRNAREA	Area that drains to a point on a stream	3.11	square miles
ELEV	Mean Basin Elevation	1227	feet
ELEVMAX	Maximum basin elevation		feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.11	square miles	2.26	1400
ELEV	Mean Basin Elevation	1227	feet	1050	2580

Low-Flow Statistics Flow Report [Low Flow Region 4]

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	0.104	ft^3/s	43	43
30 Day 2 Year Low Flow	0.191	ft^3/s	38	38
7 Day 10 Year Low Flow	0.0337	ft^3/s	66	66
30 Day 10 Year Low Flow	0.0664	ft^3/s	54	54
90 Day 10 Year Low Flow	0.129	ft^3/s	41	41

Low-Flow Statistics Citations

Attachment 2 – Downstream StreamStats Report

Attachment 3 – WQM 7.0 Summer

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
20F	36943	LITTLE CHARTIERS CREEK	**13.950**	1044.00	3.11	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	0.011	0.00	0.00	0.000	0.000	10.0	0.00	0.00	25.00	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
OUTFALL 001	PA0093262	0.0020	0.0020	0.0020	0.000	20.00	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	8.38	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
20F	36943	LITTLE CHARTIERS CREEK	**13.570**	1035.00	3.11	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	0.011	0.00	0.00	0.000	0.000	10.0	0.00	0.00	25.00	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	3.00	8.38	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Attachment 4 – WQM 7.0 Winter

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
20F	36943	LITTLE CHARTIERS CREEK	**13.950**	1044.00	3.11	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	0.022	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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
OUTFALL 001	PA0093262	0.0020	0.0020	0.0020	0.000	15.00	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	12.80	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
20F	36943	LITTLE CHARTIERS CREEK	**13.570**	1035.00	3.11	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	0.022	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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	15.00	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	12.80	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20F	36943	LITTLE CHARTIERS 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												
13.950	0.07	0.00	0.07	.0031	0.00449	.339	5.67	16.75	0.04	0.631	5.44	7.00
Q1-10 Flow												
13.950	0.04	0.00	0.04	.0031	0.00449	NA	NA	NA	0.03	0.799	5.67	7.00
Q30-10 Flow												
13.950	0.09	0.00	0.09	.0031	0.00449	NA	NA	NA	0.04	0.535	5.33	7.00

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20F	36943	LITTLE CHARTIERS 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
13.950	OUTFALL 001	24.1	50	24.1	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
13.950	OUTFALL 001	4.36	25	4.36	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)		
13.95	OUTFALL 001	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20F	36943	LITTLE CHARTIERS CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
13.950	0.002	5.438	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.674	0.339	16.753	0.037
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.01	0.466	1.09	0.228
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
12.415	12.458	Owens	6
Reach Travel Time (days)			
0.631			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.063	2.96	1.08	11.33
0.126	2.92	1.06	11.33
0.189	2.87	1.05	11.33
0.252	2.83	1.03	11.33
0.316	2.79	1.02	11.33
0.379	2.75	1.00	11.33
0.442	2.71	0.99	11.33
0.505	2.67	0.97	11.33
0.568	2.63	0.96	11.33
0.631	2.59	0.95	11.33

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20F	36943	LITTLE CHARTIERS 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)
13.950	OUTFALL 001	PA0093262	0.002	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4