Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0033073**
Facility Type	**Non-Municipal**	APS ID	**1096313**
Major / Minor	**Minor**	Authorization ID	**1453899**

Applicant and Facility Information

Applicant Name	**PA DOT Maintenance & Operations Bureau**	Facility Name	**PA DOT Rest Area 26**
Applicant Address	400 North Street, 6th Floor Harrisburg, PA 17120	Facility Address	I-80 Westbound Reynoldsville, PA 15851
Applicant Contact	Nicholaus Sahd, Consultant (nsahd@gfnet.com)	Facility Contact	Ryan Succheralli, District Roadside Specialist (rsuccheral@pa.gov)
Applicant Phone	(717) 886-5395	Facility Phone	(724) 357-2833
Client ID	189304	Site ID	454073
Ch 94 Load Status	Not Overloaded	Municipality	Washington Township
Connection Status	No Limitations	County	Jefferson
Date Application Received	August 30, 2023	EPA Waived?	Yes
Date Application Accepted	September 6, 2023	If No, Reason	-
Purpose of Application	Renewal of an existing NPDES Permit for an existing discharge of treated sanitary wastewater from a non-municipal STP.		

Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The applicant should be able to meet the limits of this permit, which will protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

A. Stormwater into Sewers
B. Right of Way
C. Solids Handling
D. Public Sewerage Availability
E. Effluent Chlorine Optimization and Minimization

SPECIAL CONDITIONS:

II. Solids Management

There are 14 open violations in efacts associated with the subject Client ID 189304 as of 5/28/2025 (see Attachment 1).

Approve	Deny	Signatures	Date
X		Stephen A. McCauley Stephen A. McCauley, E.I.T. / Project Manager	5/28/2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	6/6/2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.009
Latitude	41º 08' 57.11"	Longitude	-78º 56' 33.03"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to the Fivemile Run (CWF)	Stream Code	N/A
NHD Com ID	123859848	RMI	N/A
Drainage Area	-	Yield (cfs/mi^2)	-
Q_{7-10} Flow (cfs)	-	Q_{7-10} Basis	-
Elevation (ft)	-	Slope (ft/ft)	-
Watershed No.	17-C	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired*		
Cause(s) of Impairment	Metals, Nutrients, Organic Enrichment, Siltation		
Source(s) of Impairment	Habitat Modification - Other than Hydromodification, On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Package Plant or other permitted small flows discharges		
TMDL Status	-	Name	-

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

Nearest Downstream Public Water Supply Intake	Hawthorn Area Water Authority		
PWS Waters	Redbank Creek	Flow at Intake (cfs)	30.6
PWS RMI	28.6	Distance from Outfall (mi)	39.0

* - Since the Fivemile Run is impaired in part by nutrients, the monitoring frequency for Total Phosphorus and a Total Nitrogen was set as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

Sludge use and disposal description and location(s): All sludge is disposed of at an approved landfill.

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.009 MGD of treated sewage from an existing non-municipal STP in Washington Township, Jefferson County.

Treatment permitted by WQM Permit no. 3389402 consists of: A comminutor with a bypass bar screen, a 4,320 gallon equalization tank, two 6,030 gallon aeration tanks in parallel with caustic soda (NaOH) addition for pH adjustment, two 979 gallon clarifiers in parallel, four 650 square foot (25' X 26') intermittent sand filters, and liquid sodium hypochlorite disinfection with a 315 gallon contact tank.

1. Streamflow:

The Q_{7-10} low flow for the Fivemile Run was calculated from the yieldrate and drainage area from the USGS Streamstats website:

Fivemile Run @ Outfall 001:

Yieldrate:	0.045	sq. mi.	(from StreamStats)
Drainage Area:	1.57	cfsm	(from StreamStats)
% of stream allocated:	50%	Basis:	Rest Area 25 is 1 mile downstream
Q_{7-10}:	0.07	cfs	(calculated)

2. Wasteflow:

Maximum discharge: 0.009 MGD = 0.0139 cfs

Runoff flow period: 24 hours Basis: Runoff flow for an STP with flow equalization

The flow is greater than 3 parts stream flow (Q7-10) to 1 part effluent (design flow). Therefore, the standards in the DEP "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers" (391-2000-014) do not need to be applied.

Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, E. Coli, Total Phosphorus, Total Nitrogen, NH_3-N, $CBOD_5$, Dissolved Oxygen, and Disinfection.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits.

The measurement frequency was previously set to 5/day as requested by the Permittee, which will be retained.

b. Total Suspended Solids

Limits are 30.0 mg/l as a monthly average and 60.0 mg/l as an instantaneous maximum.

Basis: Application of Chapter 92a47 technology-based limits

c. Fecal Coliform

05/01 - 09/30:	200 No./100ml	(monthly average)
	1,000 No./100ml	(instantaneous maximum)
10/01 - 04/30:	2,000 No./100ml	(monthly average)
	10,000 No./100ml	(instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits

d. E. Coli

Monitoring was added for E. Coli at a frequency of 1/year

Basis: Application of Chapter 92a.61 as recommended by the SOP for flows between 0.002 MGD and 0.05 MGD.

e. Total Phosphorus

Chapter 96.5 does not apply. However, the previous monitoring for Total Phosphorus will be retained in accordance with the SOP, based on Chapter 92a.61.

f. Total Nitrogen

The previous monitoring for Total Nitrogen will be retained in accordance with the SOP, based on Chapter 92a.61.

g. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used:	7.1	Standard Units (S.U.)
		Basis: Average pH value from DMR summary
Discharge temperature:	25°C	(Default value used for modeling purposes)
Median stream pH to be used:	7.0	Standard Units (S.U.)
		Basis: Default value used for modeling purposes
Stream Temperature:	20˚C	(Default value used for CWF modeling purposes)
Background NH_3-N concentration:	0.0	mg/l
		Basis: Default value used for modeling purposes
NH_3-N Summer limits:	11.4	mg/l (monthly average)
	22.8	mg/l (instantaneous maximum)
NH_3-N Winter limits:	25.0	mg/l (monthly average)
	50.0	mg/l (instantaneous maximum)

Result: WQ modeling resulted in the summer limits above (see Attachment 2). The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. However, based on the eDMR data, the previous NPDES Permit limits of 7.5 mg/l monthly average and 15.0 mg/l instantaneous maximum are attainable, so those limits will be retained with this renewal.

h. $CBOD_5$

Median discharge pH to be used: 7.1 Standard Units (S.U.)

Basis: Average pH value from DMR summary

Discharge temperature: 25°C (Default value used for modeling purposes)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: Default value used for modeling purposes

Stream Temperature: 20˚C (Default value used for CWF modeling)

Background $CBOD_5$ concentration: 2.0 mg/l

Basis: Default value used for modeling purposes

Calculated $CBOD_5$ limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the limits above (see Attachment 2), which are the same as the previous NPDES Permit. Since the summer limits are technology-based, the winter limits will also be technology-based. These limits are the same as in the previous NPDES Permit and will be retained.

i. Dissolved Oxygen (DO)

A Dissolved Oxygen technology-based minimum of 4.0 mg/l was recommended by the WQ Model (see Attachment 2) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61.

The measurement frequency was previously set to 5/day as requested by the Permittee, which will be retained.

j. Total Residual Chlorine (TRC)

☐ Ultraviolet (UV) light monitoring
☒ Total Residual Chlorine (TRC) limits: 0.5 mg/l (monthly average)
1.6 mg/l (instantaneous maximum)

Basis: The TRC limits above are technology-based using the TRC Calc Spreadsheet (see Attachment 3). These limits are the same as the previous NPDES Permit and will be retained.

The measurement frequency was previously set to 5/day as requested by the Permittee, which will be retained.

4. Reasonable Potential Analysis for Receiving Stream:

A Reasonable Potential Analysis was not performed in accordance with State practices for Outfall 001 using the Department's Toxics Management Spreadsheet since no sampling other than sewage-related parameters was performed for this facility with the renewal application.

5. Reasonable Potential for Downstream Public Water Supply (PWS):

The Department's Toxics Management Spreadsheet does not calculate limits for parameters that are based on PWS criteria (TDS, Chloride, Bromide, and Sulfate). Since no relevant sampling was provided, mass-balance calculations were not performed.

Nearest Downstream potable water supply (PWS): Hawthorn Area Water Authority
Distance downstream from the point of discharge: 39.0 miles (approximate)

6. Anti-Backsliding

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

7. Attachment List:

Attachment 1 - WMS Open Violations by Client

Attachment 2 - WQ Modeling Printouts

Attachment 3 - TRC_Calc Spreadsheet

(The Attachments above can be found at the end of this document)

Compliance History

DMR Data for Outfall 001 (from April 1, 2024 to March 31, 2025)

Parameter	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24
Flow (MGD) Average Monthly	1448	1078	1170	1654	1713	2274	2423	3367	3312	2800	2503	1930
Flow (MGD) Daily Maximum	2400	1400	2100	4200	2700	3400	3300	5000	5200	4700	4200	3800
pH (S.U.) Instantaneous Minimum	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
pH (S.U.) Instantaneous Maximum	7.3	7.2	7.2	7.2	7.1	7.10	7.10	7.1	7.1	7.1	7.1	7.1
DO (mg/L) Daily Minimum	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
TRC (mg/L) Average Monthly	0.5	0.50	0.50	0.5	0.5	0.5	0.5	0.50	0.50	0.50	0.5	0.5
TRC (mg/L) Instantaneous Maximum	0.53	0.55	0.51	0.51	0.51	0.51	0.5	0.51	0.51	0.51	0.51	0.51
CBOD5 (mg/L) Average Monthly	3.6	33.8	41.7	33.5	36.7	77.4	10.0	2.0	13.36	2.41	8.6	18.3
TSS (mg/L) Average Monthly	75.5	279.0	280.0	75.5	95.0	498.2	56.5	76.0	56.5	74.5	96.5	52.0
Fecal Coliform (No./100 ml) Geometric Mean	14	22.5	4045	2420	2420	1068	7.21	1.0	18.57	1.0	8.6	1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 10	51	10460	> 2420	2420	12100	52.0	< 1.0	345	< 1.0	75.0	< 1.0
Total Nitrogen (mg/L) Average Monthly	32.2	42.0	13.6	35.2	79.7	73.8	48.9	93.2	75.1	50.1	64.8	60.5
Ammonia (mg/L) Average Monthly	10.7	17.4	8.5	23.4	32.6	9.9	33.5	40.2	54.8	34.6	13.7	10.4
Total Phosphorus (mg/L) Average Monthly	1.32	6.7	15.7	6.8	20.9	29.5	10.0	5.8	4.9	6.8	5.2	5.1

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: 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 Inst Min	XXX	XXX	9.0	5/week	Grab
DO	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	5/week	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	5/week	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	8-Hr Composite
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	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	22.5	XXX	45	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	7.5	XXX	15	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite

Compliance Sampling Location: at Outfall 001, after disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The Total Residual Chlorine (TRC) limit is technology-based on Chapter 92a.48. The limits for $CBOD_5$, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter

92a.47. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7. Monitoring for Total Nitrogen and Total Phosphorus is based on Chapter 92a.61.

Attachment 1

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

WATER MANAGEMENT SYSTEM
OPEN VIOLATIONS BY CLIENT

Client ID: 189304
Client: All

Open Violations: 14

	CLIENT ID	CLIENT	PF ID	FACILITY	PF KIND	PF STATUS	INSP PROGRAM	PROGRAM SPECIFIC ID
1	189304	PA DOT MAINT & OPR BUR	838776	PHILIPSBURG MAINT FAC	Public Administration	Active	Storage Tanks	14-55530
2	189304	PA DOT MAINT & OPR BUR	838776	PHILIPSBURG MAINT FAC	Public Administration	Active	Storage Tanks	14-55530
3	189304	PA DOT MAINT & OPR BUR	838776	PHILIPSBURG MAINT FAC	Public Administration	Active	Storage Tanks	14-55530
4	189304	PA DOT MAINT & OPR BUR	838776	PHILIPSBURG MAINT FAC	Public Administration	Active	Storage Tanks	14-55530
5	189304	PA DOT MAINT & OPR BUR	838776	PHILIPSBURG MAINT FAC	Public Administration	Active	Storage Tanks	14-55530
6	189304	PA DOT MAINT & OPR BUR	838776	PHILIPSBURG MAINT FAC	Public Administration	Active	Storage Tanks	14-55530
7	189304	PA DOT MAINT & OPR BUR	838776	PHILIPSBURG MAINT FAC	Public Administration	Active	Storage Tanks	14-55530
8	189304	PA DOT MAINT & OPR BUR	838776	PHILIPSBURG MAINT FAC	Public Administration	Active	Storage Tanks	14-55530
9	189304	PA DOT MAINT & OPR BUR	241376	PA DOT REST AREA 25	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES	PA0033049
10	189304	PA DOT MAINT & OPR BUR	241376	PA DOT REST AREA 25	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES	PA0033049
11	189304	PA DOT MAINT & OPR BUR	241472	PA DOT REST AREA 26	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES	PA0033073
12	189304	PA DOT MAINT & OPR BUR	241472	PA DOT REST AREA 26	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES	PA0033073
13	189304	PA DOT MAINT & OPR BUR	482619	PA DOT REST AREA 15	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES	PA0035548
14	189304	PA DOT MAINT & OPR BUR	480977	PA DOT REST AREA 16 - I-79	Sewage Non-Publicly Owned (Non-Muni)	Active	WPC NPDES	PA0035556

	INSP ID	VIOLATION ID	INSPECTION CATEGORY	VIOLATION DATE	VIOLATION CODE	VIOLATION	PF INSPECTOR	INSP REGION
1	3884431	8210809	PF	11/12/2024	245.612(E)	Failure to meet aboveground storage tank protective coating requirements		NCRO
2	3884431	8210810	PF	11/12/2024	245.612(G)	Failure to meet aboveground storage tank labelling requirements		NCRO
3	3884431	8210811	PF	11/12/2024	245.613(B)	Failure to conduct monthly operations and maintenance check of aboveground storage tank systems		NCRO
4	3884431	8210812	PF	11/12/2024	245.612(H)	Failure to maintain aboveground storage tank system components		NCRO
5	3930687	8223674	PF	11/12/2024	245.612(E)	Failure to meet aboveground storage tank protective coating requirements		NCRO
6	3930687	8223675	PF	11/12/2024	245.612(G)	Failure to meet aboveground storage tank labelling requirements		NCRO
7	3930687	8223676	PF	11/12/2024	245.613(B)	Failure to conduct monthly operations and maintenance check of aboveground storage tank systems		NCRO
8	3930687	8223677	PF	11/12/2024	245.612(H)	Failure to maintain aboveground storage tank system components		NCRO
9	3322748	945497	PF	02/09/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit	TOLLINI,BRIAN	NWRO
10	3658574	8168059	PF	12/13/2023	92A.44	NPDES - Violation of effluent limits in Part A of permit	TOLLINI,BRIAN	NWRO
11	3322760	945498	PF	02/09/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit	TOLLINI,BRIAN	NWRO
12	3658616	8168071	PF	12/13/2023	92A.44	NPDES - Violation of effluent limits in Part A of permit	TOLLINI,BRIAN	NWRO
13	3961985	8229807	PF	04/14/2025	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance	CARVER,MELISSA	NWRO
14	3961909	8230605	PF	04/14/2025	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance	CARVER,MELISSA	NWRO

Attachment 2

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
17C	48585	FIVEMILE 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)
4.600	Rest Area 26	PA0033073	0.009	CBOD5	25		
				NH3-N	11.42	22.84	
				Dissolved Oxygen			4

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)
3.600	Rest Area 25	PA0033049	0.009	CBOD5	25		
				NH3-N	15.94	31.88	
				Dissolved Oxygen			4

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
17C	48585	FIVEMILE RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
4.600	0.009	20.808	7.015
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.615	0.343	13.437	0.054
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.72	0.751	1.85	0.745
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.557	22.694	Owens	6
Reach Travel Time (days)			
1.125			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.112	5.24	1.70	8.12
0.225	4.80	1.56	8.12
0.337	4.39	1.44	8.12
0.450	4.03	1.32	8.12
0.562	3.69	1.21	8.12
0.675	3.38	1.12	8.12
0.787	3.09	1.03	8.12
0.900	2.83	0.94	8.12
1.012	2.60	0.87	8.12
1.125	2.38	0.80	8.12

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.600	0.018	21.060	7.019
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.929	0.365	16.223	0.061
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.69	0.223	2.21	0.760
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.713	21.904	Owens	6
Reach Travel Time (days)			
3.629			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.363	4.30	1.68	8.08
0.726	3.95	1.28	8.08
1.089	3.63	0.97	8.08
1.452	3.33	0.73	8.08
1.815	3.06	0.56	8.08
2.177	2.81	0.42	8.08
2.540	2.58	0.32	8.08
2.903	2.37	0.24	8.08
3.266	2.18	0.19	8.08
3.629	2.00	0.14	8.08

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		

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
17C	48585	FIVEMILE RUN	**4.600**	1655.00	1.57	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	0.046	0.00	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
Rest Area 26	PA0033073	0.0090	0.0000	0.0000	0.000	25.00	7.10

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
17C	48585	FIVEMILE RUN	**3.600**	1543.00	2.25	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	0.046	0.00	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
Rest Area 25	PA0033049	0.0090	0.0000	0.0000	0.000	25.00	7.10

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
17C	48585	FIVEMILE RUN	**0.000**	1316.00	7.90	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	0.046	0.00	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	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
17C	48585	FIVEMILE 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												
4.600	0.07	0.00	0.07	.0139	0.02121	.343	4.62	13.44	0.05	1.125	20.81	7.01
3.600	0.10	0.00	0.10	.0278	0.01194	.365	5.93	16.22	0.06	3.629	21.06	7.02
Q1-10 Flow												
4.600	0.05	0.00	0.05	.0139	0.02121	NA	NA	NA	0.04	1.375	21.16	7.02
3.600	0.07	0.00	0.07	.0278	0.01194	NA	NA	NA	0.05	4.375	21.48	7.03
Q30-10 Flow												
4.600	0.10	0.00	0.10	.0139	0.02121	NA	NA	NA	0.06	0.970	20.62	7.01
3.600	0.14	0.00	0.14	.0278	0.01194	NA	NA	NA	0.07	3.155	20.83	7.02

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
17C	48585	FIVEMILE 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
4.600	Rest Area 26	14.94	50	14.94	50	0	0
3.600	Rest Area 25	15.38	50	14.47	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
4.600	Rest Area 26	1.81	14.54	1.81	11.42	2	21
3.600	Rest Area 25	1.83	20.3	1.78	15.94	2	21

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)		
4.60	Rest Area 26	25	25	11.42	11.42	4	4	0	0
3.60	Rest Area 25	25	25	15.94	15.94	4	4	0	0

Attachment 3

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.07	= Q stream (cfs)	0.5	= CV Daily
0.009	= 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)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	1.623	1.3.2.iii	WLA cfc =	1.575
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.605	5.1d	LTA_cfc =	0.915

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)**