pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0209741**
Facility Type	**Non-Municipal**	APS ID	**1071432**
Major / Minor	**Minor**	Authorization ID	**1452817**

Applicant and Facility Information

Applicant Name	**Carlton DJVNW LLC**	Facility Name	**Route 322 MHP**
Applicant Address	8865 Norwin Avenue Suite 27 PMB 319	Facility Address	191 28th Division Highway
	North Huntingdon, PA 15642-2769		Carlton, PA 16311
Applicant Contact	Dwight Ballestrasse	Facility Contact	
Applicant Phone	(206) 498-8269	Facility Phone	
Client ID	372319	Site ID	243938
Ch 94 Load Status	Not Overloaded	Municipality	French Creek Township
Connection Status	No Limitations	County	Mercer
Date Application Received	August 16, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Renewal of an NPDES Permit which serves an existing Mobile Home Park.

Summary of Review

This application was submitted in response to the transfer of the facility to Carlton DJVNW which requested the transfer of the NPDES and WQM permits present for this facility. The WQM Permits have been transferred, in order to transfer the NPDES permit a renewal application was required to be submitted due to the NPDES permit being expired.

There are currently 11 open violations through the Safe Drinking Water program out of the NWRO and one open violation from the Clean Water Program out of the NWRO. Further evaluation of open violations will be discussed further into this fact sheet.

Sludge use and disposal description and location(s): For normal lagoon operation sludge is expected to settle out and be anaerobically treated as bottom deposits with occasional removal. A sludge plan should be in place stating water and sludge depth monitoring frequency and specify the depths when sludge should be removed.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
X		Dustin Hargenrater Dustin Hargenrater / Civil Engineer (General)	
X		 Vacant / Environmental Engineer Manager	Okay to Draft JCD 7/18/2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.0175
Latitude	41º 29' 1.89"	Longitude	-80º 0' 22.50"
Quad Name	New Lebanon	Quad Code	41080D1
Wastewater Description:	Sewage Effluent		
Receiving Waters	Powdermill Run (WWF)	Stream Code	52061
NHD Com ID	127351564	RMI	0.0200
Drainage Area (Perennial)	3.27	Yield (cfs/mi^2) (Perennial)	0.03823
Drainage Area (Dry)	0.68	Yield (cfs/mi^2) (Dry)	0.03221
Q_{7-10} Flow (cfs) (Perennial)	0.125	Q_{7-10} Basis	USGS - StreamStats
Q_{7-10} Flow (cfs) (Dry)	0.0219		
Elevation (ft)	1,264	Slope (ft/ft)	
Watershed No.	16-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.0	Default
Temperature (°F)	68	Default - WWF
Hardness (mg/L)	100	Default
Other:		

Nearest Downstream Public Water Supply Intake	Aqua Pennsylvania Inc. - Emlenton		
PWS Waters	Allegheny River	Flow at Intake (cfs)	1,376
PWS RMI	90.0	Distance from Outfall (mi)	50.4

Changes Since Last Permit Issuance: Change in ownership from Reynolds/322 Company LTD to Carlton DJVNW LLC.

Other Comments: This facility discharges to a dry stream channel that travels for approximately 0.72 miles before entering Powdermill Run at perennial conditions.

Compliance History	
Summary of DMRs:	DMRs for this facility have been reviewed back to June of 2020. The summary concludes 9 effluent violations were found. Further review of these violations will be conducted below. Overall summary of DMRs: There have not been chronic or significant violations within the past 2 years, based on the SOP these insignificant violations will not be brought up to operation staff to discuss further action. The monitoring data suggests that the operator understands his role and is able to correct violations for the majority of the time. One effluent violation was more than 2 times the limit but not more than 5 times the limit for the monitoring period of September 2021.
Summary of Inspections:	There have been 9 total inspections over the last 4 years at this facility. Further review of the inspection summaries will be conducted below.

Summary of DMRs:

July 2023 Monitoring Period:
Effluent Violation for CBOD5. Reported Value: 47.25 mg/L. Effluent Limit: 25 mg/L.
Cause of Non-Compliance: Operator Error Corrective Action Taken: Operator training of sampling procedures.

April 2022 Monitoring Period:
Effluent Violation for TRC. Reported Value: 0.57 mg/L. Effluent Limit: 0.5 mg/L.
Cause of Non-Compliance: Insufficient/overdose chemical feed Corrective Action Taken: Operator informed to keep reading below 0.5.

March 2022 Monitoring Period:
Effluent Violation for TRC: Reported Value: 0.62 mg/L. Effluent Limit: 0.5 mg/L
Cause of Non-Compliance: Insufficient/overdose chemical feed Corrective Action Taken: Operator informed to increase chlorine tablet feed by 1 and increase number of D-CL2 tabs making contact.

December 2021 Monitoring Period:
Effluent Violation for Fecal Coliform: Reported Value: 2420 CFU/100 ml. Effluent Limit: 2000 CFU/ 100 ml.
September 2021 Monitoring Period:
Effluent Violation for Fecal Coliform: Reported Value: 996 CFU/100 ml. Effluent Limit: 200 CFU/100 ml.
Cause of Non-Compliance for December and September violations: Insufficient/overdose chemical feed
Corrective Action Taken: Increase Chemical Feed.

August 2021 Monitoring Period:
Effluent Violation for Fecal Coliform: Reported Value: 276 CFU/100 ml. Effluent Limit: 200 CFU/100 ml.
Cause of Non-Compliance: Operator Error Corrective Action Taken: Operator briefed on how to clean the contact tank and discharge pipe.

July 2021 Monitoring Period:
Effluent Violation for Fecal Coliform: Reported Value: 249.8 CFU/100 ml. Effluent Limit: 200 CFU/100 ml.
Cause of Non-Compliance: Insufficient/overdose chemical feed Corrective Action Taken: Increase chemical feed

February 2021 Monitoring Period:
Effluent Violation for TRC: Reported Value: 0.9 mg/L. Effluent Limit: 0.5 mg/L
Cause of Non-Compliance: Operator Error Corrective Action Taken: Operator Training

January 2021 Monitoring Period:
Effluent Violation for TRC: Reported Value: 1.2 mg/L. Effluent Limit: 0.5 mg/L
Cause of Non-Compliance: Insufficient/overdose chemical feed Corrective Action Taken: Increase chemical feed.
Effluent Violation for pH: Reported Value: 5.9 S.U. Effluent Limit: Minimum of 6 S.U.
Cause of Non-Compliance: Unknown Corrective Action Taken: Believed to be the meter in error, calibration schedule added to SOP and had operator training.

October 2020 Monitoring Period:
Effluent Violation for TSS: Reported Value: 35.5 mg/L. Effluent Limit: 30 mg/L.
Cause of Non-Compliance: Unknown Corrective Action Taken: Operator believes the discharge pipe may have been bumped when collecting the sample.

September 2020 Monitoring Period:
Effluent Violation for TSS: Reported Value: 35 mg/L. Effluent Limit: 30 mg/L
Cause of Non-Compliance: Unknown Corrective Action Taken: Operator briefed on being careful when collecting the sample not to bump the discharge pipe.

Inspection Summary:

As stated above 9 inspections have occurred at this facility within the last 5 years. The most recent inspection occurred on 5/1/2024 which was an Administrative/File Review which noted 1 violation for failure to pay annual fee. Seven of these inspections noted violations, according the open violations by client report only one of these violations are still open for the 12/28/2023 inspection which noted a violation for failure to pay annual fee.

Compliance History Review:

There are currently 11 open violations for the Client ID (372319) as of 7/3/24. 10 of these open violations come from the Safe Drinking Water Program out of the NWRO. SDW Violations consist of:
-Failure to follow approved methods for sampling and analysis.
-Failure of an owner to submit annual operator certification system fee.
(2) -Failure to comply with uninterrupted system service plan requirements.
-Failure of a CWS to develop and/or update an emergency response plan.
(2) -Failure to follow approved methods for sampling and analysis.
-Failure to comply with a permit condition.
-Failure of a community water system to develop and/or update an operation and maintenance plan.

The facility also has one open violation for the NPDES Program that was opened on 12/28/23 for failure to pay annual system fee.

It is recommended that the Safe Drinking Water Program be contacted before permit issuance to confirm these violations should not hold up permit issuance.

Compliance History

DMR Data for Outfall 001 (from May 1, 2023 to April 30, 2024)

Parameter	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23
Flow (MGD) Average Monthly	0.04	0.031	0.022097	0.0258	0.009604	0.007583	0.00574	0.000239	0.01319	0.003528		0.009
pH (S.U.) Minimum	6.8	7.1	6.7	6.5	6.4	6.5	6.6	6.4	6.3	6.7		6.9
pH (S.U.) Maximum	7.8	7.8	7.8	6.8	6.8	6.7	6.8	6.4	6.9	7.0		7.3
DO (mg/L) Minimum	4.5	4.6	4.5	4.5	4.4	4.4	4.0	4.7	4.5	4.2		4.3
TRC (mg/L) Average Monthly	< 0.1	0.1	0.1	0.024	0.1	0.1	0.03	0.03	0.04	0.1		0.03
CBOD5 (mg/L) Average Monthly	< 5.1	6.95	9.8	10.05	10.75	6.4	8.2	8.6	12.35	47.25		7.7
TSS (mg/L) Average Monthly	< 5.0	< 5.5	15.5	15.05	11.5	< 7.2	13.5	45.0	23.5	13.5		< 5.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 3.3	8	2.449	12.08	> 49.2	21.47	1733	196	120	88.5		34.7
Total Nitrogen (mg/L) Average Monthly	< 3.225	5.32	< 4.37	< 4.37	4.765	< 4.91	< 12.06	< 4.98	< 5.075	6.045		< 3.605
Ammonia (mg/L) Average Monthly	1.16	2.4	< 0.3	0.61	2.78	0.58	9.38	0.63	0.43	1.015		0.795
Total Phosphorus (mg/L) Average Monthly	0.21	0.349	0.2235	0.206	0.4315	0.2005	1.00	1.00	1.17	0.325		0.221

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0175
Latitude 41º 29' 1.90" **Longitude** -80º 0' 22.50"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

This discharge was modeled using WQM 7.0 to evaluate CBOD5, Dissolved Oxygen, and Ammonia-Nitrogen parameters. This facility discharges into an intermittent stream channel approximately 0.13 river miles from the head of the intermittent stream channel, from there the discharge flows for 0.58 river miles before coming into contact with another intermittent stream channel, after coming into contact with the additional intermittent stream channel the discharge will flow for another 0.22 river miles before reaching perennial conditions at Powdermill Run. The intermittent stream modeling results show a reach travel time of 0.902 days before reaching perennial conditions. Within the travel time of the discharge CBOD5 concentration at the end of the reach is 3.44 mg/L, Ammonia-Nitrogen at the end of the reach is 5.63 mg/L, and Dissolved Oxygen has increased to 6.97 mg/L. The perennial condition monitoring at Powdermill Run suggests limits that match the concentrations found from the intermittent stream monitoring, which suggests that the facility will be able to keep the limits for CBOD5 and D.O. and continue with monitoring only for Ammonia-Nitrogen.

The discharge was also modeled using TRC_CALC. The suggested limits for TRC for this facility are a 0.5 mg/L average monthly limit and a 1.5 mg/L IMAX limit. This is no change from the previous permit cycle.

Best Professional Judgment (BPJ) Limitations

A Dissolved Oxygen minimum of 4.0 mg/L will be implemented as a BPJ limit based on the standard in 25 PA Code Chapter 93 and best professional judgement. The modeling results show D.O. at the intermittent stream reach at 6.97 mg/L which exceeds the standard of 5.0 mg/L for Warm Water Fish waters and shows the 4.0 mg/L limit will be appropriate for the facility.

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 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	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
DO	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	2/month	8-Hr Composite
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Ammonia	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
E. Coli	XXX	XXX	XXX	XXX	XXX	Report IMAX	1/year	Grab

Compliance Sampling Location: Outfall 001, after disinfection.

TRC_CALC Output Files

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.15	= Q stream (cfs)	0.5	= CV Daily
0.0175	= Q discharge (MGD)	0.5	= CV Hourly
20	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.786	1.3.2.iii	WLA cfc = 1.734
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.666	5.1d	LTA_cfc = 1.008

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.288	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.563	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

WQM 7.0 – Water Quality Modeling: Intermittent Stream Channel

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
16D	52061	POWDERMILL RUN	**0.930**	1319.00	0.04	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	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	0.00	0.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	0.00	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
16D	52061	POWDERMILL RUN	**0.800**	1267.00	0.08	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	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
322 MHP	PA0209741	0.0175	0.0175	0.0000	0.000	25.00	7.11

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	0.00	0.00	1.50
Dissolved Oxygen	4.77	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
16D	52061	POWDERMILL RUN	**0.220**	1099.00	0.66	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.001	0.00	0.01	0.000	0.000	0.0	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	0.00	0.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	0.00	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
16D	52061	POWDERMILL RUN	**0.000**	1067.00	0.68	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	0.02	0.000	0.000	0.0	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	0.00	0.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	0.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
16D	52061	POWDERMILL 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												
0.930	0.00	0.00	0.00	NA	0.07576	.179	.49	2.75	0.01	0.688	25.00	7.00
0.800	0.00	0.00	0.00	.0271	0.05486	.319	1.5	4.71	0.06	0.575	25.00	7.10
0.220	0.01	0.00	0.01	.0271	0.02755	.298	2.92	9.8	0.04	0.327	25.00	7.08
Q1-10 Flow												
0.930	0.00	0.00	0.00	NA	0.07576	NA	NA	NA	0.00	0.000	0.00	0.00
0.800	0.00	0.00	0.00	.0271	0.05486	NA	NA	NA	0.00	0.000	0.00	0.00
0.220	0.01	0.00	0.00	.0271	0.02755	NA	NA	NA	0.00	0.000	0.00	0.00
Q30-10 Flow												
0.930	0.00	0.00	0.00	NA	0.07576	NA	NA	NA	0.00	0.000	0.00	0.00
0.800	0.00	0.00	0.00	.0271	0.05486	NA	NA	NA	0.00	0.000	0.00	0.00
0.220	0.01	0.00	0.00	.0271	0.02755	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	4		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
16D	52061	POWDERMILL RUN

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.93		NA	NA	NA	NA	NA	NA	NA	NA
0.80	322 MHP	25	25	18.84	18.84	4.77	4.77	0	0
0.22		NA	NA	NA	NA	NA	NA	NA	NA

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16D	52061	POWDERMILL RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.930	0.000	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
0.493	0.179	2.752	0.012
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
0.00	0.000	0.00	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.240	29.614	Owens	4
Reach Travel Time (days)			
0.688			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.069	0.00	0.00	7.54
0.138	0.00	0.00	7.54
0.206	0.00	0.00	7.54
0.275	0.00	0.00	7.54
0.344	0.00	0.00	7.54
0.413	0.00	0.00	7.54
0.482	0.00	0.00	7.54
0.550	0.00	0.00	7.54
0.619	0.00	0.00	7.54
0.688	0.00	0.00	7.54

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.800	0.018	25.000	7.100
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1.501	0.319	4.710	0.062
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
22.96	1.500	17.31	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.028	31.319	Owens	4
Reach Travel Time (days)			
0.575			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.058	20.60	16.31	4.12
0.115	18.48	15.37	4.25
0.173	16.58	14.49	4.54
0.230	14.87	13.66	4.83
0.288	13.34	12.87	5.10
0.345	11.97	12.13	5.34
0.403	10.74	11.44	5.57
0.460	9.63	10.78	5.78
0.518	8.64	10.16	5.97
0.575	7.75	9.58	6.14

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16D	52061	POWDERMILL RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.220	0.018	25.000	7.081
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.921	0.298	9.795	0.041
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
6.39	1.500	7.89	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.514	26.998	Owens	4
Reach Travel Time (days)			
0.327			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.033	6.00	7.63	6.44
0.065	5.64	7.37	6.45
0.098	5.31	7.13	6.51
0.131	4.99	6.89	6.57
0.164	4.69	6.67	6.64
0.196	4.41	6.45	6.71
0.229	4.15	6.23	6.78
0.262	3.90	6.03	6.85
0.295	3.66	5.83	6.91
0.327	3.44	5.63	6.97

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
16D	52061	POWDERMILL 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)
0.800	322 MHP	PA0209741	0.018	CBOD5	25		
				NH3-N	18.84	37.68	
				Dissolved Oxygen			4.77

WQM 7.0 – Water Quality Modeling: Perennial Conditions

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
16D	52061	POWDERMILL RUN	**0.731**	1087.00	3.19	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	0.038	0.00	0.12	0.000	0.000	0.0	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
16D	52061	POWDERMILL RUN	**0.440**	1067.00	3.95	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	0.038	0.00	0.15	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
Route 322 MHP	PA0209741	0.0175	0.0175	0.0175	0.000	25.00	7.11

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	3.44	2.00	0.00	1.50
Dissolved Oxygen	6.97	8.24	0.00	0.00
NH3-N	5.63	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
16D	52061	POWDERMILL RUN	**0.001**	1041.00	4.06	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	0.038	0.00	0.16	0.000	0.000	0.0	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
16D	52061	POWDERMILL 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												
0.731	0.12	0.00	0.12	NA	0.01303	.364	6.17	16.94	0.05	0.328	25.00	7.00
0.440	0.15	0.00	0.15	.0271	0.01122	.388	7.28	18.75	0.06	0.423	24.16	7.01
Q1-10 Flow												
0.731	0.08	0.00	0.08	NA	0.01303	NA	NA	NA	0.04	0.421	25.00	7.00
0.440	0.10	0.00	0.10	.0271	0.01122	NA	NA	NA	0.05	0.519	24.23	7.02
Q30-10 Flow												
0.731	0.17	0.00	0.17	NA	0.01303	NA	NA	NA	0.06	0.276	25.00	7.00
0.440	0.21	0.00	0.21	.0271	0.01122	NA	NA	NA	0.07	0.365	24.13	7.01

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
16D	52061	POWDERMILL 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
0.731		NA	NA	11.07	NA	NA	NA
0.440	Route 322 MHP	11.58	11.26	11.58	11.26	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
0.731		NA	NA	1.37	NA	NA	NA
0.440	Route 322 MHP	1.44	5.63	1.44	5.63	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.73		NA	NA	NA	NA	NA	NA	NA	NA
0.44	Route 322 MHP	3.44	3.44	5.63	5.63	6.97	6.97	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16D	52061	POWDERMILL RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.731	0.000	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
6.172	0.364	16.939	0.054
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.00	0.000	0.00	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.243	22.453	Owens	5
Reach Travel Time (days)			
0.328			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.033	2.00	0.00	7.54
0.066	2.00	0.00	7.54
0.098	2.00	0.00	7.54
0.131	2.00	0.00	7.54
0.164	2.00	0.00	7.54
0.197	2.00	0.00	7.54
0.229	2.00	0.00	7.54
0.262	2.00	0.00	7.54
0.295	2.00	0.00	7.54
0.328	2.00	0.00	7.54

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.440	0.018	24.162	7.015
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
7.279	0.388	18.752	0.063
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.22	0.202	0.85	0.964
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.571	21.728	Owens	5
Reach Travel Time (days)			
0.423			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.042	2.19	0.82	7.65
0.085	2.17	0.78	7.65
0.127	2.15	0.75	7.65
0.169	2.13	0.72	7.65
0.212	2.11	0.69	7.65
0.254	2.08	0.67	7.65
0.296	2.06	0.64	7.65
0.339	2.04	0.61	7.65
0.381	2.02	0.59	7.65
0.423	2.00	0.57	7.65

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
16D	52061	POWDERMILL 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)
0.440	Route 322 MHP	PA0209741	0.018	CBOD5	3.44		
				NH3-N	5.63	11.26	
				Dissolved Oxygen			6.97