pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**DEP-Initiated Major Amendment**	Application No.	**PA0110361**
Facility Type	**Municipal**	APS ID	**370**
Major / Minor	**Minor**	Authorization ID	**1482091**

Applicant and Facility Information

Applicant Name	**Freedom Township Water & Sewer Authority**	Facility Name	**Freedom Township STP**
Applicant Address	131 Municipal Street	Facility Address	60 Standish Lane
	East Freedom, PA 16637-8158		Duncansville, PA 16635
Applicant Contact	Melvin Edmundson	Facility Contact	Rick Miller
Applicant Phone	(814) 695-8051	Facility Phone	(814) 696-0498
Client ID	77220	Site ID	451887
Ch 94 Load Status	Not Overloaded	Municipality	Freedom Township
Connection Status	No Limitations	County	Blair
Date Application Received	April 25, 2024	EPA Waived?	No
Date Application Accepted	April 25, 2024	If No, Reason	Significant CB Discharge
Purpose of Application	This is a DEP-initiated amendment		

Approve	Deny	Signatures	Date
X		Nicholas Hong, P.E. / Environmental Engineer Nick Hong (via electronic signature)	April 29, 2024
x		Daniel W. Martin, P.E. / Environmental Engineer Manager Maria D. Bebenek for	May 2, 2024
x		Maria D. Bebenek, P.E. / Environmental Program Manager Maria D. Bebenek	May 2, 2024

Summary of Review

This Fact Sheet was precipitated to correct an inadvertent error in the NPDES permit (NPDES permit 2023) which became effective on January 1, 2023 and expires December 31, 2027.

The error originated from the NPDES permit (NPDES permit 2017) which became effective December 1, 2017 and expired on November 30, 2022.

The appropriate limits for CBOD should have summer limits at 20 mg/l and winter limits at 25 mg/l. The NPDES permit erroneously had summer limits greater than winter limits.

The Fact Sheet prepared for the NPDES permit 2023 modelled CBOD and ammonia nitrogen. Appvion was not modelled as a discharger since the factory has closed. The model results would allow for CBOD at 25 mg/l on a year-round basis. Future renewals may place this discharger back into modeling. Since there was new information, anti-backsliding does not apply.

The NPDES has been amended to allow for CBOD at 25 mg/l on a year-round basis. A copy of the WQM output is attached to the Fact Sheet.

The table below summarizes the current NPDES permit limits for Outfall 001.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40° 22' 34.57" , **Longitude** 78° 25' 34.74" , **River Mile Index** 39.74 , **Stream Code** 16061

Receiving Waters: Frankstown Branch Juniata River (TSF, MF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **January 1, 2023** through **December 31, 2027**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	162	243	XXX	20.0	30.0	40	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	202	324	XXX	25.0	40.0	50	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	243	364	XXX	30.0	45.0	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab

Summary of Review

Outfall 001 , Continued (from 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	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	145	XXX	XXX	18.0	XXX	36	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	49	XXX	XXX	6.0	XXX	12	2/week	24-Hr Composite
Copper, Total	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Zinc, Total	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Ultraviolet light dosage (mjoules/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

The table below summarizes the amended permit limits for Outfall 001.

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40° 22' 34.57" , **Longitude** 78° 25' 34.74" , **River Mile Index** 39.74 , **Stream Code** 16061

Receiving Waters: Frankstown Branch Juniata River (TSF, MF)

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **January 1, 2023** through **December 31, 2027**.
2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	202	324	XXX	25.0	40.0	50	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	162	243	XXX	20.0	30.0	40	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	243	364	XXX	30.0	45.0	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab

Summary of Review

Outfall001 , Continued (from Permit Effective Datethrough Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	145	XXX	XXX	18.0	XXX	36	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	49	XXX	XXX	6.0	XXX	12	2/week	24-Hr Composite
Copper, Total	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Zinc, Total	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Ultraviolet light dosage (mjoules/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

The revised limits will be placed in the PA Bulletin for comment.

Subsequently, the NPDES permit will become effective the date of the amendment.

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.

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

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)
45.300	Greenfield	PA0029106-22	0.800	CBOD5	20		
				NH3-N	4.91	9.82	
				Dissolved Oxygen			5

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)
41.910	Roaring Springs	PA0020249-22	0.700	CBOD5	25		
				NH3-N	5.8	11.6	
				Dissolved Oxygen			5

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)
39.740	Freedom	PA0110361-22	0.970	CBOD5	25		
				NH3-N	7.88	15.76	
				Dissolved Oxygen			5

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)
33.300	Hollidaysburg	PA0043273-22	6.000	CBOD5	15		
				NH3-N	3.5	7	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

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
45.300	Greenfield	7.68	11	7.68	11	0	0
41.910	Roaring Springs	6.89	13	8.66	13	0	0
39.740	Freedom	7.21	49.23	9.6	49.23	0	0
39.090		NA	NA	8.25	NA	NA	NA
33.300	Hollidaysburg	10.04	7	11.06	7	0	0
32.230		NA	NA	9.25	NA	NA	NA

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
45.300	Greenfield	1.19	5.5	1.19	4.91	3	11
41.910	Roaring Springs	1.11	6.5	1.27	5.8	3	11
39.740	Freedom	1.14	8.83	1.35	7.88	3	11
39.090		NA	NA	1.24	NA	NA	NA
33.300	Hollidaysburg	1.39	3.5	1.47	3.5	0	0
32.230		NA	NA	1.33	NA	NA	NA

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)		
45.30	Greenfield	20	20	4.91	4.91	5	5	0	0
41.91	Roaring Springs	25	25	5.8	5.8	5	5	0	0
39.74	Freedom	25	25	7.88	7.88	5	5	0	0
39.09		NA	NA	NA	NA	NA	NA	NA	NA
33.30	Hollidaysburg	15	15	3.5	3.5	5	5	0	0
32.23		NA	NA	NA	NA	NA	NA	NA	NA

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
11A	16061	FRANKSTOWN BRANCH JUNIATA R	**45.300**	1096.00	37.10	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	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
Greenfield	PA0029106-22	0.8000	0.8000	0.8000	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	20.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	5.50	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
11A	16061	FRANKSTOWN BRANCH JUNIATA R	**41.910**	1009.00	47.10	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	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
Roaring Springs	PA0020249-22	0.7000	0.7000	0.7000	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	5.00	8.24	0.00	0.00
NH3-N	6.50	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
11A	16061	FRANKSTOWN BRANCH JUNIATA R	**39.740**	987.00	55.50	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	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	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
Freedom	PA0110361-22	0.9700	0.9700	0.9700	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	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
11A	16061	FRANKSTOWN BRANCH JUNIATA R	**39.090**	974.00	90.70	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	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	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	0.00	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
11A	16061	FRANKSTOWN BRANCH JUNIATA R	**33.300**	913.00	116.00	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	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	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
Hollidaysburg	PA0043273-22	6.0000	6.0000	6.0000	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	15.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	3.50	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
11A	16061	FRANKSTOWN BRANCH JUNIATA R	**32.230**	911.00	215.00	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	0.164	0.00	0.00	0.000	0.000	0.0	0.00	0.00	22.00	7.84	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	0.00	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
11A	16061	FRANKSTOWN BRANCH JUNIATA R	**29.700**	898.00	222.00	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	0.164	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 D.O.Simulation

SWP Basin	Stream Code	Stream Name
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
45.300	0.800	21.662	7.539
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
36.207	0.701	51.675	0.289
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.04	0.797	0.83	0.796
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.695	13.866	Tsivoglou	5
Reach Travel Time (days)			
0.718			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.072	4.74	0.78	7.99
0.144	4.46	0.74	7.99
0.215	4.19	0.70	7.99
0.287	3.94	0.66	7.99
0.359	3.70	0.62	7.99
0.431	3.48	0.59	7.99
0.502	3.27	0.56	7.99
0.574	3.08	0.53	7.99
0.646	2.89	0.50	7.99
0.718	2.72	0.47	7.99

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
41.910	1.500	21.538	7.466
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
44.575	0.745	59.865	0.303
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.00	0.918	0.97	0.788
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.712	4.113	Tsivoglou	5
Reach Travel Time (days)			
0.438			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.044	4.79	0.93	7.48
0.088	4.59	0.90	7.31
0.131	4.40	0.87	7.18
0.175	4.21	0.84	7.08
0.219	4.03	0.81	7.02
0.263	3.86	0.79	6.98
0.307	3.70	0.76	6.96
0.351	3.54	0.73	6.96
0.394	3.39	0.71	6.97
0.438	3.25	0.68	6.99

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
39.740	2.470	21.409	7.401
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
47.678	0.762	62.560	0.356
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.64	1.100	1.45	0.780
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.895	9.506	Tsivoglou	5
Reach Travel Time (days)			
0.112			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.011	5.57	1.43	6.94
0.022	5.50	1.42	6.98
0.034	5.42	1.41	7.02
0.045	5.35	1.40	7.06
0.056	5.28	1.38	7.10
0.067	5.22	1.37	7.13
0.078	5.15	1.36	7.16
0.089	5.08	1.35	7.19
0.101	5.01	1.34	7.22
0.112	4.95	1.33	7.25

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
39.090	2.470	21.591	7.496
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
61.259	0.820	74.714	0.372
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.04	0.588	0.92	0.791
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.558	5.263	Tsivoglou	5
Reach Travel Time (days)			
0.951			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.095	3.80	0.85	7.57
0.190	3.58	0.79	7.61
0.285	3.37	0.73	7.66
0.380	3.18	0.68	7.73
0.475	2.99	0.63	7.79
0.570	2.82	0.58	7.86
0.665	2.65	0.54	7.92
0.760	2.50	0.50	7.98
0.856	2.35	0.47	8.00
0.951	2.21	0.43	8.00

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
33.300	8.470	21.184	7.307
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
84.345	0.921	91.598	0.414
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.88	1.134	1.26	0.767
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.167	0.703	Tsivoglou	5
Reach Travel Time (days)			
0.158			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.016	5.77	1.25	6.95
0.032	5.66	1.23	6.75
0.047	5.56	1.22	6.54
0.063	5.45	1.20	6.35
0.079	5.35	1.19	6.16
0.095	5.25	1.17	5.98
0.111	5.15	1.16	5.80
0.126	5.05	1.15	5.63
0.142	4.96	1.13	5.46
0.158	4.87	1.12	5.30

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
32.230	8.470	21.458	7.424
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
103.007	0.951	108.351	0.494
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.90	0.810	0.74	0.783
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.285	2.321	Tsivoglou	5
Reach Travel Time (days)			
0.313			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.031	3.80	0.73	6.24
0.063	3.70	0.71	6.20
0.094	3.60	0.69	6.17
0.125	3.50	0.67	6.15
0.157	3.41	0.66	6.14
0.188	3.32	0.64	6.13
0.219	3.23	0.63	6.13
0.250	3.14	0.61	6.13
0.282	3.06	0.60	6.14
0.313	2.98	0.58	6.15

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
11A	16061	FRANKSTOWN BRANCH JUNIATA RIVER

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												
45.300	6.08	0.00	6.08	1.2376	0.00486	.701	36.21	51.68	0.29	0.718	21.66	7.54
41.910	7.72	0.00	7.72	2.3205	0.00192	.745	44.57	59.86	0.30	0.438	21.54	7.47
39.740	9.10	0.00	9.10	3.8211	0.00379	.762	47.68	62.56	0.36	0.112	21.41	7.40
39.090	14.87	0.00	14.87	3.8211	0.00200	.82	61.26	74.71	0.37	0.951	21.59	7.50
33.300	19.02	0.00	19.02	13.1031	0.00035	.921	84.35	91.6	0.41	0.158	21.18	7.31
32.230	35.26	0.00	35.26	13.1031	0.00097	.951	103.01	108.35	0.49	0.313	21.46	7.42
Q1-10 Flow												
45.300	5.84	0.00	5.84	1.2376	0.00486	NA	NA	NA	0.28	0.732	21.65	7.53
41.910	7.42	0.00	7.42	2.3205	0.00192	NA	NA	NA	0.30	0.446	21.52	7.46
39.740	8.74	0.00	8.74	3.8211	0.00379	NA	NA	NA	0.35	0.113	21.39	7.39
39.090	14.28	0.00	14.28	3.8211	0.00200	NA	NA	NA	0.37	0.968	21.58	7.49
33.300	18.26	0.00	18.26	13.1031	0.00035	NA	NA	NA	0.41	0.160	21.16	7.30
32.230	33.85	0.00	33.85	13.1031	0.00097	NA	NA	NA	0.49	0.318	21.44	7.42
Q30-10 Flow												
45.300	6.75	0.00	6.75	1.2376	0.00486	NA	NA	NA	0.30	0.683	21.69	7.56
41.910	8.57	0.00	8.57	2.3205	0.00192	NA	NA	NA	0.32	0.419	21.57	7.49
39.740	10.10	0.00	10.10	3.8211	0.00379	NA	NA	NA	0.37	0.107	21.45	7.42
39.090	16.51	0.00	16.51	3.8211	0.00200	NA	NA	NA	0.39	0.907	21.62	7.52
33.300	21.12	0.00	21.12	13.1031	0.00035	NA	NA	NA	0.43	0.153	21.23	7.33
32.230	39.14	0.00	39.14	13.1031	0.00097	NA	NA	NA	0.52	0.300	21.50	7.44

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	0.96	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.11	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		