pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0088579**
Facility Type	**Non-Municipal**	APS ID	**988356**
Major / Minor	**Minor**	Authorization ID	**1434649**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**The York Water Co.**	Facility Name	**Felton Borough STP**
Applicant Address	130 E Market Street	Facility Address	70 Water Street
	York, PA 17401-1219		Felton, PA 17322
Applicant Contact	Vaughn Wenger	Facility Contact	Vaughn Wenger
Applicant Phone	(717) 718-7544	Facility Phone	(717) 845-3601
Client ID	69800	Site ID	459500
Ch 94 Load Status	Existing Hydraulic and Organic Overload	Municipality	Felton Borough
Connection Status	Dept. Imposed Connection Prohibitions	County	York
Date Application Received	March 31, 2023	EPA Waived?	Yes
Date Application Accepted	April 14, 2023	If No, Reason	

Purpose of Application: Renewal of Existing NPDES Permit

Summary of Review

The York Water Company (YWC) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of a NPDES permit for the Delta Borough STP. The permit was last reissued to Felton Borough on September 28, 2018 before being transferred to YWC on February 22, 2021. The permit expired on September 30, 2023 but the terms and conditions of the permit have been administratively extended since that time.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted, and a notice of the draft permit be published in the *Pennsylvania Bulletin* for public comments for 30 days. A file review of documents associated with the discharge or permittee may be available at the PA DEP southcentral regional office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file reviews, contact the SCRO file review coordinator at 717.705.4700.

Sludge use and disposal description and location(s): Smith Disposal Facility and Berstine Farm (Adams County)

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		*Aaron Baar* Aaron Baar / Project Manager	May 18, 2024
x		*Maria D. Bebenek* for Daniel W. Martin, P.E. / Environmental Engineer Manager	May 22, 2024

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.04
Latitude	39º 51' 12.47"	Longitude	-76º 33' 50.50"
Quad Name	Stewartstown	Quad Code	2033
Wastewater Description:	Sewage Effluent		

Receiving Waters	North Branch Muddy Creek (CWF)	Stream Code	07367
NHD Com ID	57470951	RMI	7.99
Drainage Area	16.5 sq. mi.	Yield (cfs/mi^2)	0.265
Q_{7-10} Flow (cfs)	4.38	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	522.89	Slope (ft/ft)	
Watershed No.	7-I	Chapter 93 Class.	CWF
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	

Nearest Downstream Public Water Supply Intake	Exelon Peach Bottom Atomic Power Station		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	4.33	Distance from Outfall (mi)	28

Drainage Area

The discharge is to North Branch Muddy Creek at RMI 7.99. A drainage area upstream of the discharge is determined to be 16.5 sq.mi. according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow

According to StreamStats, the watershed has a Q_{7-10} of 4.38 cfs. This information was used to obtain a LFY, a chronic 30-day (Q_{30-10}) and acute (Q_{1-10}) exposure stream flows for the discharge point as follows (Guidance No. 391-2000-023).

Q_{7-10} = 4.38 cfs
Q_{30-10} = 1.36 * 4.38 cfs = 5.96 cfs
Q_{1-10} = 0.64 * 4.38 cfs = 2.80 cfs
LFY = 4.38 cfs/16.5 mi^2 = 0.265 cfs/mi^2

North Branch Muddy Creek

25 Pa Code §93.9 classifies the receiving water, North Branch Muddy Creek, with a CWF Existing Use designation. Effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The discharge is in a stream segment listed attaining use.

Local Watershed Total Maximum Daily Loads (TMDLs)

According to PA's 2024 integrated water quality monitoring and assessment report, North Branch Muddy Creek in the vicinity of the proposed point of discharge is supporting aquatic life. The creek is listed as Category 2 in the 2024 integrated report, indicating that some but not all uses are met. The assessment status of the remaining uses may be unknown because data are insufficient to assess the water, or it may be impaired. No TMDL has been developed

for North Branch Muddy Creek to date, so no local watershed TMDL has been taken into consideration during this review.

Public Water Supply Intake

The nearest downstream public water supply intake is the Exelon Peach Bottom Atomic Power Plant intake located on the Susquehanna River approximately 28 miles from the discharge. Considering the distance and nature, the discharge is not expected to significantly affect the water supply.

Class A Wild Trout Streams

The receiving stream is not a Class A Wild Trout stream; therefore, no Class A Wild Trout Fishery is impacted by this discharge.

Treatment Facility Summary

Treatment Facility Name: Felton STP

WQM Permit No.	Issuance Date
6700417 A05-1	January 20, 2005

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Ultraviolet	0.04

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.04	80	Existing Hydraulic and Organic Overload	Aerobic Digestion	Other WWTP

The York Water Company owns and operates the sanitary wastewater treatment facility located in Felton Borough, York County. This NPDES permit covers discharges of sewage treated by the Felton Borough STP. The facility only serves portions of Felton Borough; all sewer systems are 100% separated. With an annual average design flow 0.040 MGD and a hydraulic design capacity of 0.040 MGD, this facility utilizes an extended aeration system consisting of:

Comminutor (1) ⇒ Screening (1) ⇒ EQ Tank (2) ⇒ Aeration Tank (6) ⇒ Clarifier (2) ⇒ Ultraviolet Unit (1) ⇒ Post Aeration Tank (1) ⇒ Discharge

The system incorporates chemical addition in the form of soda ash (to control pH) and alum (for settleability). As a precaution for the failure of the ultraviolet treatment unit, calcium hypochlorite and sodium bisulfite are kept on site for chlorination and dechlorination. Three sludge holding tanks are used for solids storage.

Compliance History	
Summary of DMRs:	DMR results for the past year are presented below.
Summary of Inspections:	Since the last renewal of the facility's NPDES permit, the following inspections have been logged: June 21, 2018: A routine CEI was conducted by Michael Benham. No violations were noted. Recommendations were made regarding build up of solids in the aeration tank, restoring skimmer function to the clarifiers, hauling accumulated sludge, records management, and repairing the effluent sampler.

Other Comments: As of May 18, 2024, there are two open violations associated YWC (facility unknown):

CLIENT ID	CLIENT	PF ID	FACILITY	PF KIND	PF STATUS	INSP PROGRAM	PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID	INSPECTION CATEGORY	VIOLATION DATE	VIOLATION CODE	VIOLATION	PF INSPECTOR	INSP REGION
69800	THE YORK WATER CO					WPC State Water Pollution Control	69800	3418993	967146	Clnt	08/20/2022	91.33(A)	CSL - Failure to immediately report to DEP a pollution incident		SCRO
69800	THE YORK WATER CO					WPC State Water Pollution Control	69800	3418993	967147	Clnt	08/20/2022	CSL401	CSL - Unauthorized, unpermitted discharge of polluting substances to waters of the Commonwealth resulting in pollution		SCRO

The draft permit letter will indicate that the permit may not be finalized until all pending violations are resolved or closed.

Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: Outfall 001

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 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5	8.3	13.0	XXX	25.0	40.0	50	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	10.0	15.0	XXX	30.0	45.0	60	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-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
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite

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		
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	2/month	Calculation

Compliance Sampling Location: Outfall 001

Compliance History

DMR Data for Outfall 001 (from April 1, 2023 to March 31, 2024)

Parameter	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23
Flow (MGD) Average Monthly	0.006	0.008	0.028	0.017	0.004	0.004	0.003	0.004	0.005	0.005	0.004	0.006
Flow (MGD) Daily Maximum	0.014	0.020	0.115	0.081	0.008	0.006	0.007	0.015	0.007	0.008	0.008	0.011
pH (S.U.) Instantaneous Minimum	6.92	6.83	6.57	6.88	7.25	6.72	6.79	6.57	6.55	6.48	6.77	6.61

pH (S.U.) Instantaneous Maximum	8.31	7.55	7.6	8.04	8.27	8.23	7.64	7.46	7.55	7.34	7.34	7.48
DO (mg/L) Instantaneous Minimum	9.73	10.27	9.85	9.71	9.63	8.97	8.37	7.95	7.85	7.58	9.28	9.44
CBOD5 (lbs/day) Average Monthly	< 0.10	< 0.14	< 0.91	< 0.59	< 0.05	< 1.9	< 0.04	< 0.06	< 0.08	< 0.07	< 0.1	< 0.1
CBOD5 (lbs/day) Weekly Average	< 0.12	< 0.16	1.62	1.08	0.05	< 0.08	< 0.06	< 0.06	< 0.1	< 0.08	< 0.1	0.5
CBOD5 (mg/L) Average Monthly	< 2.4	< 2.4	< 5.3	< 3.1	< 2.6	< 2.4	< 2.4	< 2.0	< 2.0	< 3.0	< 2.0	< 2.0
CBOD5 (mg/L) Weekly Average	< 2.4	< 2.4	8.1	3.7	2.7	< 2.4	< 2.4	3.0	< 2.0	3.0	< 2.0	< 2.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	12	15	24	29	7	7	2	8.0	5.0	5.0	8.0	8.0
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	15	16	25	31	7	11	3	9.0	5.0	5.0	10.0	8.0
BOD5 (mg/L) Raw Sewage Influent Average Monthly	260	264	207	415	397	227	118	303	143	170	169	172.0
TSS (lbs/day) Average Monthly	0.09	0.16	0.49	1.36	0.07	0.08	0.03	0.06	0.03	0.2	0.05	0.2
TSS (lbs/day) Raw Sewage Influent Average Monthly	14	23	22	29	9	7	2	8.0	4.0	5.0	10.0	5.0
TSS (lbs/day) Raw Sewage Influent Daily Maximum	19	27	22	33	9	13	2	13.0	4.0	6.0	17.0	7.0
TSS (lbs/day) Weekly Average	0.10	0.25	0.80	2.63	0.12	0.13	0.03	0.08	0.04	0.3	0.05	0.4
TSS (mg/L) Average Monthly	2.0	3.0	3.0	5.5	4.0	3.0	2.0	3.0	1.0	8.0	1.0	5.0
TSS (mg/L) Raw Sewage Influent Average Monthly	326	398	188	338	518	240	98	302	122	158	200	96.0
TSS (mg/L) Weekly Average	2.0	5.0	4.0	9.0	7.0	4.0	3.0	3.0	1.0	10.0	1.0	7.0

Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 1	< 1	< 1	< 1	< 8	< 1	< 1.0	< 1	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	< 1	< 1	2	6	2	59	2.0	< 1.0	< 1	< 1	< 1
Nitrate-Nitrite (mg/L) Average Monthly	31	30	18	29	58	45	56.0	64.0	56.0	50.0	45.0	47
Nitrate-Nitrite (lbs) Total Monthly	41	49	62	96	< 29	36	28	49	58.0	43.0	63.0	65.0
Total Nitrogen (mg/L) Average Monthly	< 31.9	< 30.0	< 21.8	< 29.5	< 58.5	< 45.5	< 56.5	< 64	< 56.0	< 50.5	< 45.0	< 47.5
Total Nitrogen (lbs) Total Monthly	< 42	< 50	< 87	< 98	< 29	< 36	< 29	< 50.0	< 58.0	< 43	< 63	< 66
Total Nitrogen (lbs) Total Annual							893					
Ammonia (lbs/day) Average Monthly	< 0.004	< 0.006	0.587	< 0.017	< 0.002	< 0.003	< 0.002	< 0.003	< 0.003	< 0.003	< 0.005	< 0.005
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	3.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (lbs) Total Monthly	< 0.12	< 0.17	18.2	< 0.53	< 0.06	< 0.09	< 0.05	< 0.08	< 0.1	< 0.09	< 0.1	< 0.1
Ammonia (lbs) Total Annual							2					
TKN (mg/L) Average Monthly	< 0.9	< 0.5	< 4.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TKN (lbs) Total Monthly	< 1.2	< 0.9	< 24.8	< 2.8	< 0.3	< 0.6	< 0.3	< 0.4	< 0.5	< 43	< 0.7	< 0.7
Total Phosphorus (lbs/day) Average Monthly	0.2	0.2	0.4	0.3	0.1	0.2	0.1	0.2	0.3	0.3	0.3	0.1
Total Phosphorus (mg/L) Average Monthly	4.0	3.8	2.9	3.2	6.8	6.3	7.0	9.0	7.8	8.8	6.8	2.1
Total Phosphorus (lbs) Total Monthly	5	6	11	9	4	5	4	7.0	8.0	8.0	10.0	3.0
Total Phosphorus (lbs) Total Annual							99					

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .04
Latitude 39º 51' 4.00" **Longitude** -76º 33' 44.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Comments: These standards apply, subject to water quality analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance no. 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. The model was utilized using data derived by USGS StreamStats and the model output indicated that existing WQBELs for ammonia and CBOD5 are still protective of water quality

The model also determined that the facility's existing DO limits of 5 mg/L are still protective of water quality.

Toxics

DEP's NPDES permit application for minor sewages (less than 0.1 MGD) does not require sampling for heavy metals including Total Copper, Total Lead, and Total Zinc.

E. Coli Monitoring

In conformity with the Department's *Establishing Effluent Limitations for Individual Sewage Permits* (SOP No. BCW-PMT-033) and as authorized by § 92a.61 of the PA Code, quarterly E. Coli monitoring has been proposed in this permit. The collection method will be via grab sample.

Best Professional Judgment (BPJ) Limitations

Dissolved Oxygen

A minimum of 5.0 mg/L for DO is an existing effluent limit and will remain unchanged in the draft permit as recommended by DEP's SOP. This requirement has also been assigned to other sewage facilities in the region. 5.0 mg/L is taken directly from 25 Pa. Code § 93.7(a) and it is also determined to be appropriate according to water quality modeling.

Ultraviolet Disinfection

Based on inspection reports, it appears that the existing UV system is equipped with an intensity sensor; therefore, UV intensity is proposed to be added to the permit as the monitoring parameter for disinfection in accordance with SOP No. BCW-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits), Section 1(A), Note 4.

Total Phosphorus & Total Nitrogen

DEP's SOP no. BPNPSM-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) recommends monitoring requirements for Total Phosphorus and Total Nitrogen for all sewage facilities. Therefore, routine monitoring for TKN, Nitrate-Nitrite, and TN are recommended to be continued in this permit. Sampling frequency for TKN, Nitrate-Nitrite, TN, and TP are currently required 2/month, which is consistent with Table 6.3 in Guidance Doc. 362-0400-001, which recommends the testing of conventional pollutants bimonthly for facilities with flows between 0.01 mgd to 0.1 mgd. No change is proposed in this permit renewal.

Historically, an average monthly Total Phosphorus limit of 2.0 mg/L was recommended in NPDES permits, per DEP phosphorus guidance 391-2000-018, to control phosphorus effluent levels for any facilities that are expected to contribute 0.25% or more of the total phosphorus loading of the entire basin. DEP has previously determined that this facility does not meet this criterion and a bimonthly monitoring requirement has been continuously imposed instead. It is recommended to maintain this monitoring requirement in the draft permit.

Additional Considerations

Flow Monitoring

The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Chesapeake Bay TMDL

The Department formulated a strategy in April 2007, to comply with the EPA's and Chesapeake Bay Foundation's requirements to reduce point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP) to the Bay. In the Strategy, sewage dischargers have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers received annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. Phase 4 (0.2 -0.4mgd) and Phase 5 (below 0.2mdg) facilities were required to monitor and report TN and TP during permit renewal at a monitoring frequency following Table 6-3 of DEP's Technical Guidance for Development and Specification of effluent Limitations (No. 362-0400-001).

EPA published the Chesapeake Bay Total Maximum Daily Load (TMDL) in December of 2010. Despite extensive restoration efforts during the past 25 years, the TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries.

In order to address the TMDL, Pennsylvania developed, in addition to the Bay Strategy, a Chesapeake Watershed Implementation Plan (WIP) Phase 1 in January 2011, Phase 2 in March 2012 and Phase 3 in December 2019. In accordance with the Phase 3 WIP, re-issuing permits for significant dischargers follow the same phased approach formulated in the original Bay strategy, whilst Phase 4 and Phase 5 will be required to monitor and report TN and TP during permit renewal.

The Phase 3 WIP categorizes this facility as a phase 5 non-significant sewage facility that has a design flow less than 0.2 MGD but greater than 0.002 MGD. The WIP recommends monitoring and reporting for Total Nitrogen and Total Phosphorus throughout the permit term at a frequency no less than annual. As discussed previously, twice monthly testing of these pollutants is proposed in this permit.

Monitoring Frequency and Sample Type

Unless discussed otherwise above, the permit's monitoring frequency and sample type for all parameters will remain unchanged from the last permit renewal.

Antidegradation Requirements

All effluent limitations and monitoring requirements have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Anti-backsliding Requirement

All effluent limits proposed in this fact sheet are as stringent as effluent limits specified in the existing permit renewal unless noted otherwise above. This approach is in accordance with 40 CFR §122.44(l(1).

Annual Fees

An annual fee clause was added to the permit in accordance with 25 Pa. Code § 92a.62. The facility covered by the permit is classified in the Minor Sewage Facility <0.05 MGD, which has an annual fee of $500.

Mass Loading Limitations

Unless stated otherwise in this fact sheet, mass loading effluent limits are calculated based on the formula: design flow (average annual) (MGD) x concentration limit (mg/L) at design flow x conversion factor (8.34).

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
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: Outfall 001

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)	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5	8.3	13.0	XXX	25.0	40.0	50	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	10.0	15.0	XXX	30.0	45.0	60	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-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/quarter	Grab
UV Intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

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		
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	2/month	Calculation

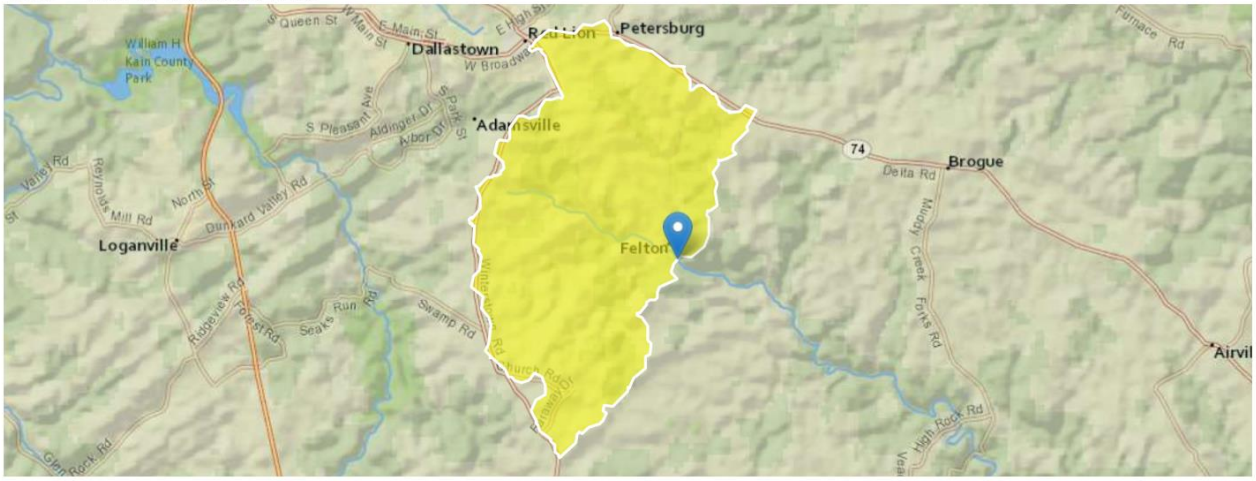
Compliance Sampling Location: Outfall 001

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:


568180 - DISCHARGE POINT
Felton
Felton Borough Memorial Park
12th Pl
Maul St
Main St
Charles St
High St
Shenk Rd
Myers Rd
Godfrey Rd
Trinity Rd
Red Lion Ave
Seitz Ave
Beaver St
Shafter Ln
Hollow Rd
Seitz Rd
Scout Rd
Cross Roads Ave
Forrest Ln
Fulton School Rd
Chanceford Twp
North Hopewell Twp

StreamStats Report

Region ID: PA
Workspace ID: PA20240517130833116000
Clicked Point (Latitude, Longitude): 39.85126, -76.56194
Time: 2024-05-17 09:08:56 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	7.2271	degrees
DRNAREA	Area that drains to a point on a stream	16.5	square miles
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	2.1761	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	16.5	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	7.2271	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	2.1761	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region 1]

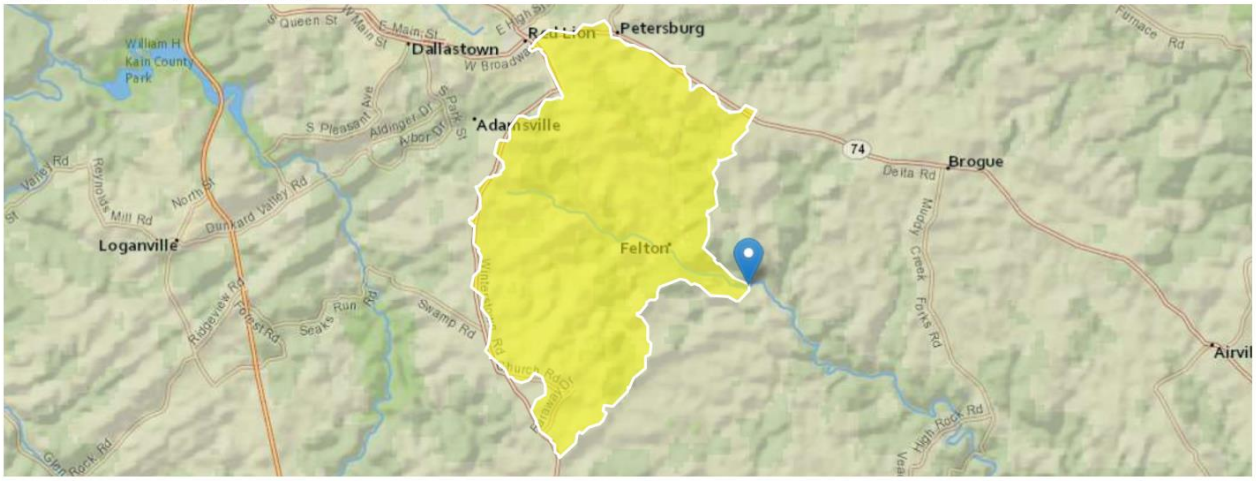
Statistic	Value	Unit
7 Day 2 Year Low Flow	7.45	ft^3/s
30 Day 2 Year Low Flow	8.44	ft^3/s
7 Day 10 Year Low Flow	4.38	ft^3/s
30 Day 10 Year Low Flow	5.01	ft^3/s
90 Day 10 Year Low Flow	5.99	ft^3/s

Low-Flow Statistics Citations

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

StreamStats Report

Region ID: PA
Workspace ID: PA20240517131839961000
Clicked Point (Latitude, Longitude): 39.84545, -76.54128
Time: 2024-05-17 09:19:03 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	7.4291	degrees
DRNAREA	Area that drains to a point on a stream	17	square miles
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	2.1136	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	17	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	7.4291	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	2.1136	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	7.94	ft^3/s
30 Day 2 Year Low Flow	8.94	ft^3/s
7 Day 10 Year Low Flow	4.72	ft^3/s
30 Day 10 Year Low Flow	5.36	ft^3/s
90 Day 10 Year Low Flow	6.32	ft^3/s

Low-Flow Statistics Citations

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

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07I	7367	NORTH BRANCH MUDDY 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)
1.420	Felton STP	PA0088579	0.040	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07I	7367	NORTH BRANCH MUDDY 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
1.420	Felton STP	16.61	50	16.61	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
1.420	Felton STP	1.88	25	1.88	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)		
1.42	Felton STP	25	25	25	25	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07I	7367	NORTH BRANCH MUDDY CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.420	0.040	20.070	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
26.653	0.637	41.823	0.262
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.32	0.183	0.35	0.704
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.198	12.540	Tsivoglou	6
Reach Travel Time (days)			
0.332			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.033	2.31	0.34	8.23
0.066	2.29	0.33	8.23
0.099	2.28	0.32	8.23
0.133	2.26	0.32	8.23
0.166	2.25	0.31	8.23
0.199	2.24	0.30	8.23
0.232	2.22	0.30	8.23
0.265	2.21	0.29	8.23
0.298	2.20	0.28	8.23
0.332	2.18	0.28	8.23

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
07I	7367	NORTH BRANCH MUDDY 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												
1.420	4.38	0.00	4.38	.0619	0.00504	.637	26.65	41.82	0.26	0.332	20.07	7.00
Q1-10 Flow												
1.420	2.80	0.00	2.80	.0619	0.00504	NA	NA	NA	0.20	0.424	20.11	7.00
Q30-10 Flow												
1.420	5.96	0.00	5.96	.0619	0.00504	NA	NA	NA	0.31	0.280	20.05	7.00

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
07I	7367	NORTH BRANCH MUDDY CREEK	**1.420**	522.89	16.50	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	0.100	0.00	4.38	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
Felton STP	PA0088579	0.0400	0.0400	0.0400	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
07I	7367	NORTH BRANCH MUDDY CREEK	**0.001**	485.14	17.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	4.72	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