pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0083585**
Facility Type	**Municipal**	APS ID	**277782**
Major / Minor	**Minor**	Authorization ID	**1302713**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Todd Township Fulton County**	Facility Name	**Todd Township STP**
Applicant Address	2998 East Dutch Corner Road	Facility Address	PA Turnpike Exist 180
	McConnellsburg, PA 17233		McConnellsburg, PA 17233
Applicant Contact	James Deshong	Facility Contact	Craig Strait
Applicant Phone	(717) 987-3812	Facility Phone	(717) 816-5265
Client ID	67054	Site ID	246971
Ch 94 Load Status	Projected Hydraulic Overload	Municipality	Todd Township
Connection Status	Self Imposed Connection Prohibition	County	Fulton
Date Application Received	January 9, 2020	EPA Waived?	Yes
Date Application Accepted	January 23, 2020	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

Todd Township Sewage Treatment Plant (STP) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on July 21, 2015 and became effective on August 1, 2015. The permit will expire on July 31, 2020.

The facility is located in Todd Township, Fulton County. The STP is owned and operated by Todd Township (Township) and serves a portion of the Township known as Knobsville. The STP has a design capacity of 0.0202 MGD, and discharges to Licking Creek (CWF).

WQM Part II permit No. 2987401 amendment was issued on 10/30/2001.

Changes from the previous permit: Unit of Fecal Coliform changed from CFU/100 ml to No./100 ml. Ammonia-Nitrogen monitoring requirement frequency corrected from 2/month to 1/month. $CBOD_5$ weekly average limits corrected from 6.2 lbs/day to 6.7 lbs/day.

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	July 10, 2020
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E. / Clean Water Program Manager	

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.02
Latitude	40º 0' 43.95"	Longitude	-77º 57' 59.66"
Quad Name	Burnt Cabin	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Licking Creek (CWF)	Stream Code	60309
NHD Com ID	49470614	RMI	42.3 miles
Drainage Area	9.22 mi.^{2}	Yield (cfs/mi^2)	0.108 (0.11)
Q_{7-10} Flow (cfs)	1.0	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	940.0	Slope (ft/ft)	
Watershed No.	13-B	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	City of Hagerstown - R.C. Wilson WTP		
PWS Waters	Potomac River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 55 miles

Changes Since Last Permit Issuance:

Drainage Area

The discharge on Licking Creek is to Little Juniata River at RMI 42.3 miles. A drainage area upstream of the discharge is estimated to be 9.22 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow

According to StreamStats, the point of first use has a Q_{7-10} of 1.0 cfs and a drainage area of 9.22 mi.^{2}, which results in a Q_{7-10} low flow yield of 0.11 cfs/mi.^{2}. This is a relatively low Q_{7-10}, but it is consistent with the known geologic features of the area. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

Q_{7-10} = 1.0 cfs

Low Flow Yield = 1.0 cfs / 9.22 mi.^{2} = 0.11 cfs/mi.^{2}

Q_{30-10} = 1.36 * 1.0 cfs = 1.36 cfs

Q_{1-10} = 0.64 * 1.0 cfs = 0.64 cfs

The resulting Q_{7-10} dilution ratio is: Q_{stream} / $Q_{discharge}$ = 1.0 cfs / [0.0202 MGD * (1.547 cfs/MGD)] = 32.0:1

Licking Creek

25 Pa Code § 93.9z classifies Licking Creek as cold-water fishes (CWF) surface water. Based on the 2018 Integrated Report, Licking Creek is not impaired. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

Public Water Supply

The nearest downstream water supply intake is for the City of Hagerstown on the Potomac River. The distance downstream from the outfall to the intake is approximately 55 miles. Due to the distance and dilution, the discharge is not expected to impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Todd Township STP				
WQM Permit No.	**Issuance Date**			
2987401 A1	10/30/2001			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Extended Aeration	Hypochlorite	0.02
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.0202	46.6	Projected Hydraulic Overload	Aerobic Digestion	Combination of methods

Changes Since Last Permit Issuance:

Other Comments: The facility is a 20,200 GPD system with the following treatment units:

One (1), Lift Station
One (1), Aeration Tank
One (1), Settling Tank
One (1), Chlorine Contact Tank
One (1), Dechlorination Tank
One (1), Post Aeration Tank
One (1), Sludge Holding Tank

Sodium Hypochlorite is used for disinfection. Sodium Sulfite Tablets are used for dechlorination. Hydrated Lime is used for pH adjustment.

Compliance History	
Summary of DMRs:	See DMR reported from June 1, 2019 to May 31, 2020 Table below (Pages # 4 & 5).
Summary of Inspections:	1/28/2020: Mr. Clark, DEP WQS, conducted a compliance evaluation inspection. There was recommendation to clean out clarifier trough. The effluent was clear. The field test results were within permit limits. The sample test results indicated within permit limits. 1/15/2019: Mr. Clark, DEP WQS, conducted a compliance evaluation inspection. There were recommendations such as clean out clarifier trough, remove built up sludge from clarifier walls, and clean chlorine contact tank. The effluent was clear. The field test results were within permit limits. There were no violations noted during the inspection. 12/21/2017: Mr. Clark, DEP WQS, conducted a compliance evaluation inspection. There was a recommendation to clean out clarifier trough. The effluent was clear. The field test results were within permit limits. There were no violations noted during the inspection.
Other Comments:	There are currently no open violations associated with the permittee or the facility.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from June 1, 2019 to May 31, 2020)

Parameter	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19
Flow (MGD) Average Monthly	0.0156	0.01673	0.0145	0.01533	0.1588	0.0134	0.0102	0.00954 4	0.0088	0.0102	0.01169	0.01096
Flow (MGD) Daily Maximum	0.0516	0.02473	0.0239	0.02134	0.03273	0.0220	0.0189	0.01526	0.0141	0.0204	0.01621	0.01855
pH (S.U.) Minimum	7.5	7.5	7.5	7.3	7.5	7.4	7.5	8.1	7.5	7.6	7.6	7.6
pH (S.U.) Instantaneous Maximum	8.0	7.9	8.1	7.9	7.9	8.1	8.0	7.5	8.0	8.0	8.0	8.0
DO (mg/L) Minimum	7.5	5.9	8.3	7.8	9.2	8.7	7.9	7.1	5.0	6.1	5.5	5.9
TRC (mg/L) Average Monthly	0.04	0.03	0.03	0.03	0.07	0.07	0.19	0.04	0.02	0.02	0.03	0.09
TRC (mg/L) Instantaneous Maximum	0.60	0.24	0.37	0.39	0.49	0.49	0.71	0.65	0.10	0.10	0.18	0.47
CBOD5 (lbs/day) Average Monthly	0.34	0.46	0.49	0.35	0.40	0.49	0.25	0.19	0.25	0.44	0.30	0.26
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly								11.2				
CBOD5 (lbs/day) Raw Sewage Influent Daily Maximum								15.2				
CBOD5 (lbs/day) Weekly Average	0.41	0.52	0.61	0.38	0.49	0.51	0.30	0.22	0.27	0.54	0.35	0.27
CBOD5 (mg/L) Average Monthly	3.0	4.0	4.1	3.1	3.9	4.6	3.0	3.0	4.0	3.9	3.4	3.0
CBOD5 (mg/L) Raw Sewage Influent Average Monthly								169.5				
CBOD5 (mg/L) Weekly Average	3.1	4.9	5.2	3.1	4.8	6.1	3.0	3.0	5.1	4.6	3.8	3.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	12.2	14.4	14.1	12.8	21.8	13.8	8.0		13.1	21.5	14.4	15.2
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	16.0	15.5	19.0	13.6	23.5	22.1	9.6		15.6	27.9	17.9	15.8
BOD5 (mg/L) Raw Sewage Influent Average Monthly	108.4	123.0	114.2	114	210.5	103.5	94.9		205.5	184	170	175.0

TSS (lbs/day) Average Monthly	0.15	0.32	0.26	0.32	0.16	0.35	0.13	0.08	0.10	0.30	0.31	0.24
TSS (lbs/day) Raw Sewage Influent Average Monthly	8.6	11.6	7.8	9.5	14.1	13.1	3.5	5.0	8.6	14.5	10.4	11.3
TSS (lbs/day) Raw Sewage Influent Daily Maximum	12.7	14.6	10.5	12.9	16.0	16.9	5.2	6.2	11.9	19.4	12.6	12.1
TSS (lbs/day) Weekly Average	0.16	0.40	0.30	0.41	0.16	0.44	0.16	0.12	0.14	0.44	0.37	0.34
TSS (mg/L) Average Monthly	1.4	2.6	2.1	2.8	1.5	3.0	1.6	1.2	1.7	2.4	3.6	2.8
TSS (mg/L) Raw Sewage Influent Average Monthly	72.5	95.5	63.0	83	137.0	110	39.5	78.0	132	122	118.5	130.0
TSS (mg/L) Weekly Average	1.6	3.0	2.4	3.4	1.6	3.2	1.6	1.6	2.6	2.6	4.6	4.0
Fecal Coliform (CFU/100 ml) Geometric Mean	18	31	8	243	167	977	283	152	91	55	74	7
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	34	140	15	587	384	3851	2506	216	161	75	1382	10
Nitrate-Nitrite (mg/L) Average Monthly	6.99	19.67	18.72	19.76	23.73	23.63	32.41	31.84	32.19	21.27	15.33	19.52
Total Nitrogen (mg/L) Average Monthly	11.53	20.65	19.22	20.26	24.23	24.14	33.41	31.74	32.92	22.49	16.85	21.02
Ammonia (mg/L) Average Monthly	2.67	0.73	0.1	0.13	0.1	0.1	0.1	0.3	0.75	0.82	0.27	0.18
TKN (mg/L) Average Monthly	3.11	0.96	0.5	0.5	0.5	0.5	1.0	0.9	0.70	1.15	1.53	1.50
Total Phosphorus (mg/L) Average Monthly	6.19	2.84	2.89	2.70	2.48	2.31	2.11	5.07	3.78	5.80	3.95	3.56

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.02
Latitude 40º 0' 43.58" **Longitude** -77º 57' 59.68"
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:

Water Quality-Based Limitations

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model indicates that a monthly average limit of 25 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. However, the existing limits of 25 mg/L average monthly (AML), 40 mg/L average weekly limit (AWL), and 50 mg/L instantaneous maximum (IMAX) will remain in the proposed permit as per guidance document 391-2000-014. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Average monthly mass limit: 25 mg/L x 0.0202 MGD x 8.34 = 4.2 lbs/day
Average weekly mass limit: 40 mg/L x 0.0202 MGD x 8.34 = 6.74 lbs/day

Ammonia (NH_3-N):
NH_3-N calculations were based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached computer model of the stream:

- Discharge pH 7.0 (Default per 391-2000-007)
- Discharge Temperature 25°C (Default per 391-2000-007)
- Stream pH 7.0 (Default per 391-2000-006)
- Stream Temperature 25°C (Default for WWF per 391-2000-003)
- Background NH_3-N 0 mg/L (Assumed since no nearby upstream WWTPs)

The model input data and results are attached. The printout of the WQM 7.0 output indicates that at a discharge of 0.330 MGD, limits (rounded according to the NPDES Technical Guidance 362-0400-001) of 25.0 mg/L NH_3-N as a monthly average and 50.0 mg/L NH_3-N instantaneous maximum are necessary to protect the aquatic life at the discharge point from toxicity effects. However, based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013), no NH_3-N effluent limit will be imposed.

Dissolved Oxygen (D.O.):
A minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. This is consistent with the previous permit and current Department criteria.

Total Suspended Solids (TSS):
There is no water quality criterion for TSS. A limit of 30 mg/L AML and 60 mg/L IMAX will be required based on the minimum level of effluent quality attainable by secondary treatment as defined in 40 CFR 133.102b(1) and 25 Pa. Code § 92a.47(a)(1), and an AWL of 45 mg/L per 40 CFR 133.102(b)(2) and 25 Pa. Code § 92a.47(a)(2). Mass limits are calculated as follows:

Average monthly mass limit: 30 mg/L x 0.0202 MGD x 8.34 = 5.0 lbs/day
Average weekly mass limit: 45 mg/L x 0.0202 MGD x 8.34 = 7.58 (7.6) lbs/day

pH:
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(2).

Fecal Coliform:
The recent coliform guidance in 25 Pa. Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100 ml and 25 Pa. Code § 92a.47.(a)(5) requires a winter limit of 2,000/100 ml as a geometric mean and an instantaneous maximum not greater than 10,000/100 ml.

Total Residual Chlorine (TRC):
The attached computer printout utilizes the equations and calculations as presented in the Department's 2003 Implementation Guidance for Total Residual Chlorine, dated 11/15/94 (ID No. 391-2000-015) for developing chlorine limitations. The attached printout indicates that an average monthly water quality limit of 0.5 mg/L and 1.6 mg/L max daily would be needed to prevent toxicity concerns. This is consistent with the existing permit. The treatment facility is meeting this limit.

Influent BOD_5 and TSS Monitoring:
The permit will include influent BOD_5 and TSS monitoring at the same frequency as is done for effluent in order to implement Chapter 94.12 and assess percent removal requirements, per DEP policy.

Chesapeake Bay Strategy:
The Department formulated a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). Sewage discharges have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual loading caps based on their design flow on August 29, 2005 and concentrations of 6.0 mg/L TN and 0.8 mg/L TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. Phase 4 (0.2 -0.4 MGD) will be required to monitor and report TN and TP during permit renewal monthly and Phase 5 (below 0.2 MGD) will monitor during current permit renewal once a year unless two years of monitoring were completed and documented. Any facility in Phases 4 and 5 that undergoes expansion is subjected to cap load right away. This plant is classified as a phase 5 and will be required to monitor and report Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, Total Phosphorus, and Total Nitrogen. The one per month monitoring and report requirements for these parameters will remain in the proposed permit.

Biosolids Management:
Approximately 6,000 - 10,000 gallons of 1.5% activated sludge are wasted from the biological treatment process on a quarterly basis and disposed of at McConnellsburg Sewage Authority's WWTP under DEP NPDES Permit No. PA0020508.

Toxics:
This is a minor sewage facility receiving domestic wastewater only and the current application does not require sampling of toxic pollutants (or heavy metals) for those facilities with design flows less than 0.1 MGD. Therefore, no reasonable potential analysis for toxic pollutants has been performed for this permit renewal.

Stormwater:
There are no known stormwater outfalls associated with this facility.

Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that the existing in-stream water used and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

303d Listed Streams:

The discharge is not located on a 303d listed stream segment.

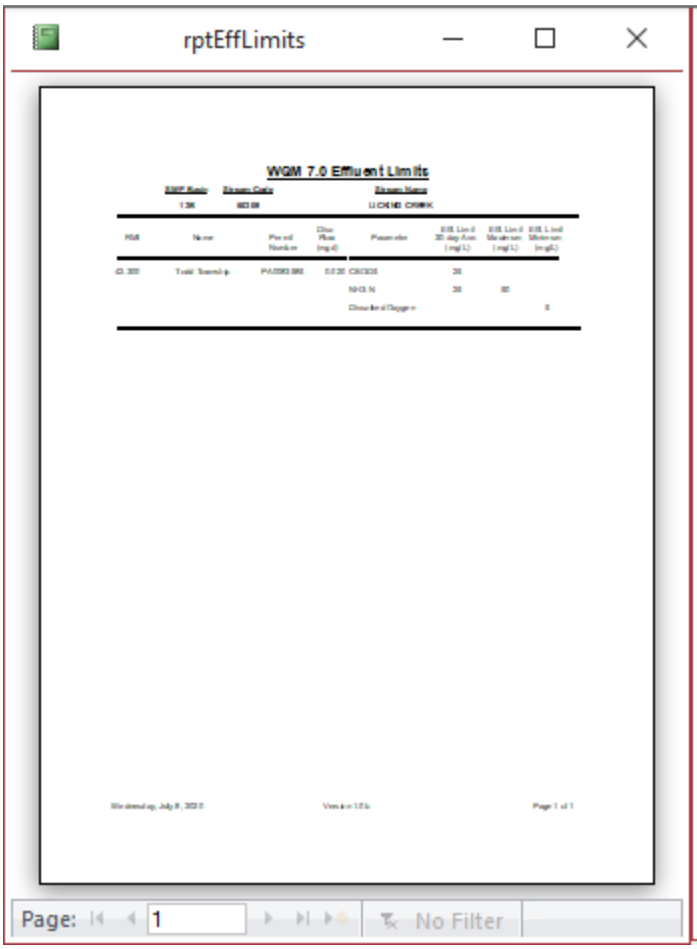
WQM 7.0 Data:

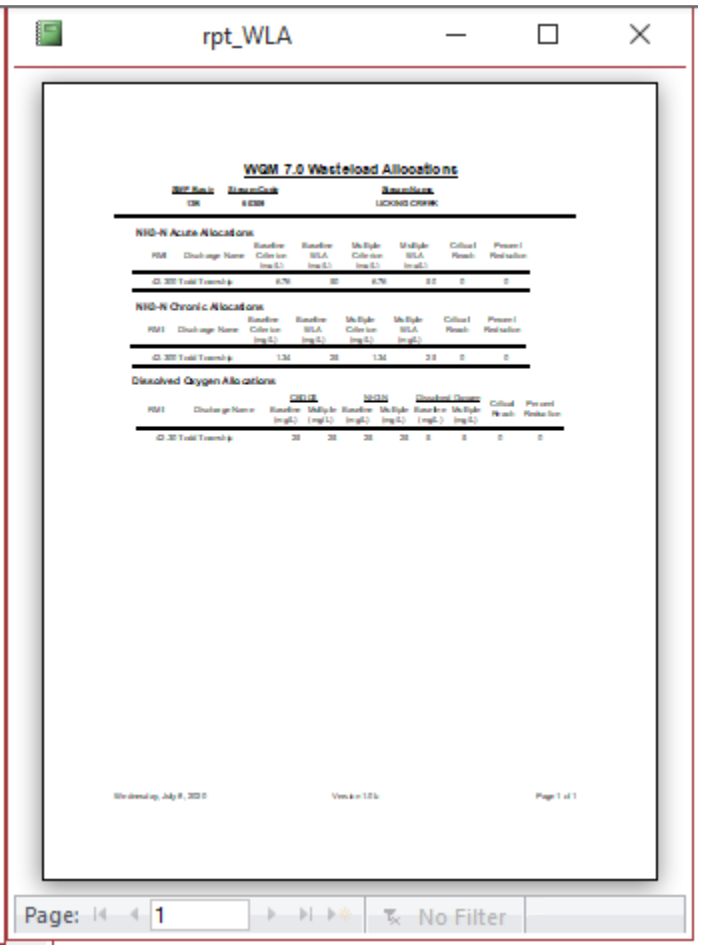
Node 1: Outfall 001 on Licking Creek (60309)

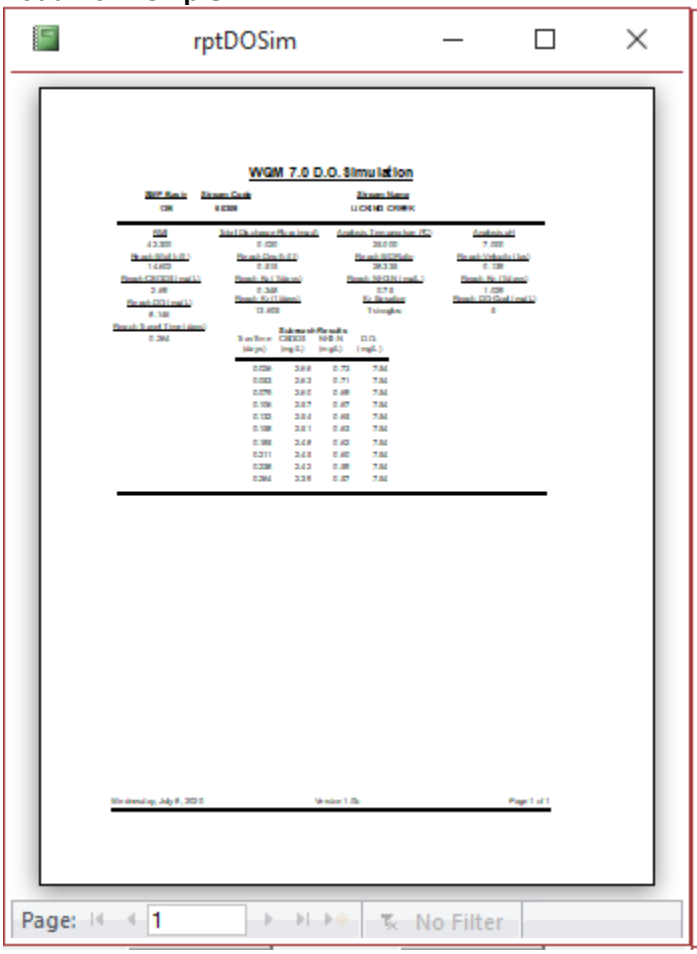
Elevation:	940 ft (USGS National Map Viewer)
Drainage Area:	9.22 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	42.3 (PA DEP eMapPA)
Q_{7-10} Low Flow Yield:	0.11 $cfs/mi.^2$
Discharge Flow:	0.0202 MGD (NPDES permit)

Node 2: Just before confluence Trib. 60820 to Licking Creek

Elevation:	911 ft (USGS National Map Viewer)
Drainage Area:	9.7 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	41.7 (PA DEP eMapPA)
Q_{7-10} Low Flow Yield:	0.11 $cfs/mi.^2$
Discharge Flow:	0.000 MGD



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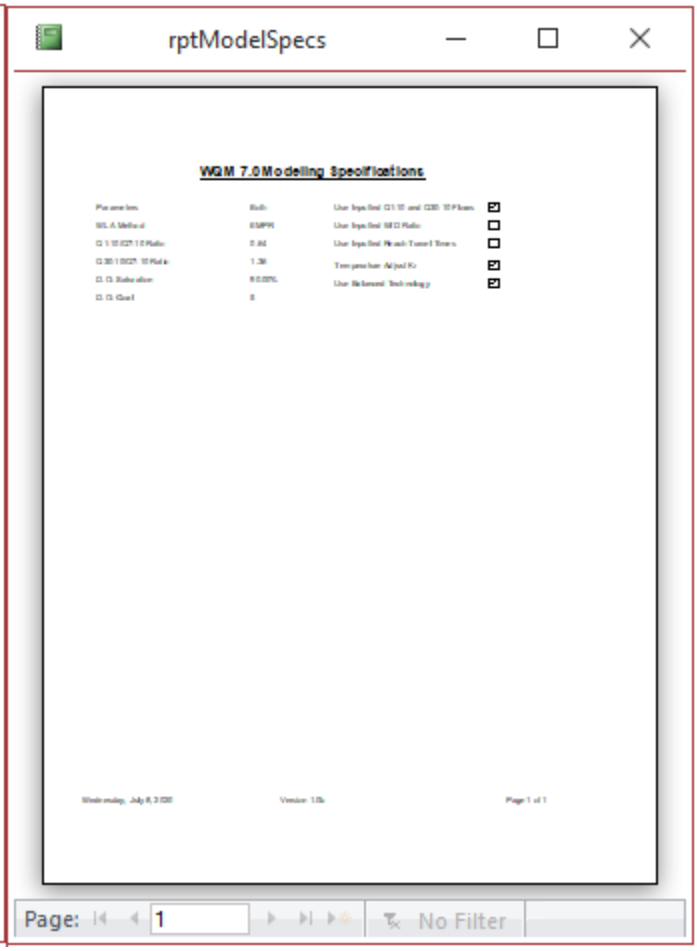
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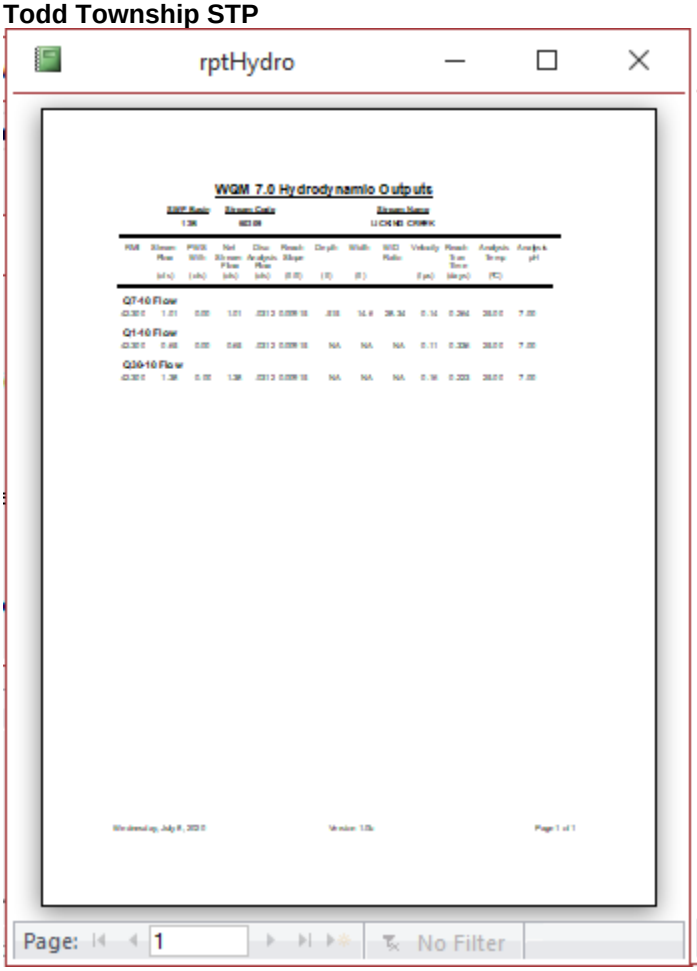
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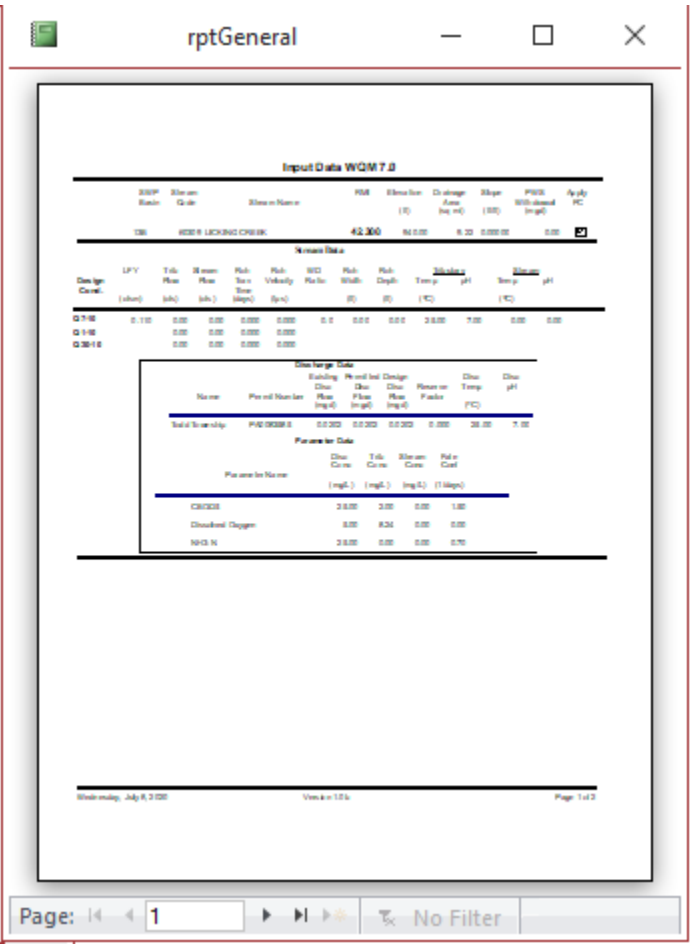
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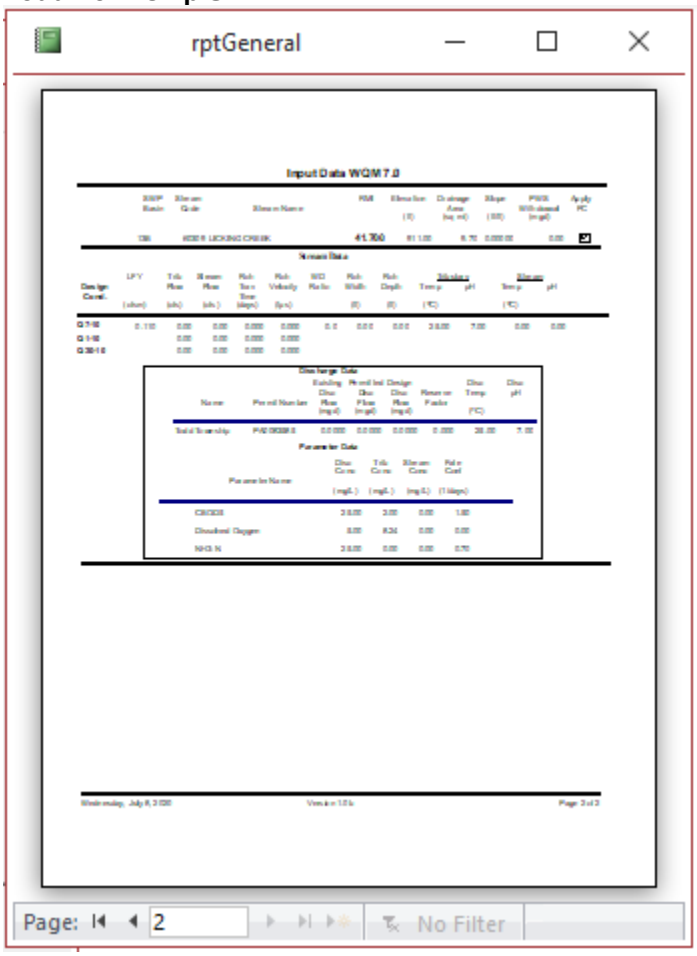
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TRC EVALUATION

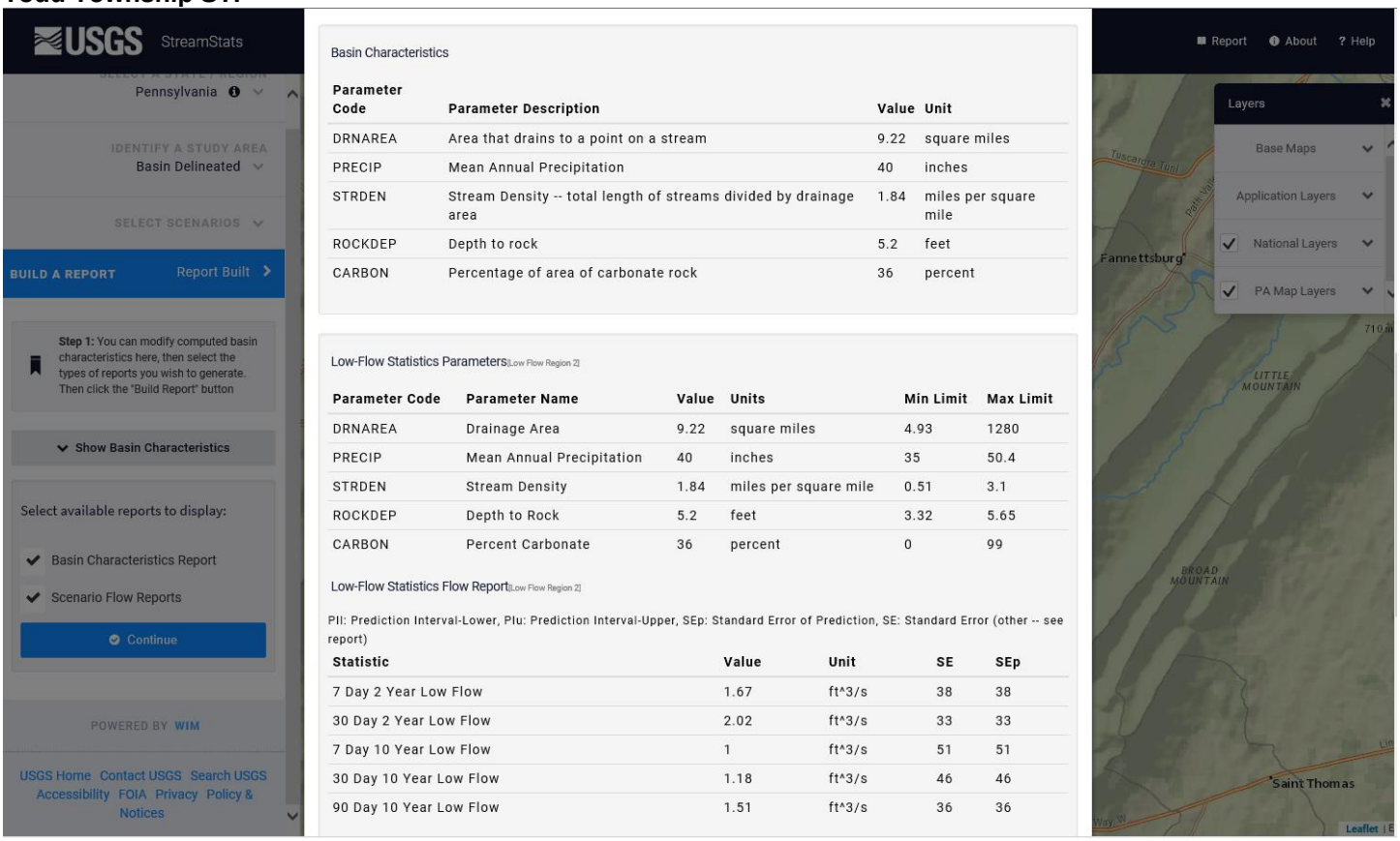
Input appropriate values in A3:A9 and D3:D9

1	= Q stream (cfs)	0.5	= CV Daily
0.0202	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 10.227	1.3.2.iii	WLA cfc = 9.963
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 3.811	5.1d	LTA_cfc = 5.792

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

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



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	9.22	square miles
PRECIP	Mean Annual Precipitation	40	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.84	miles per square mile
ROCKDEP	Depth to rock	5.2	feet
CARBON	Percentage of area of carbonate rock	36	percent

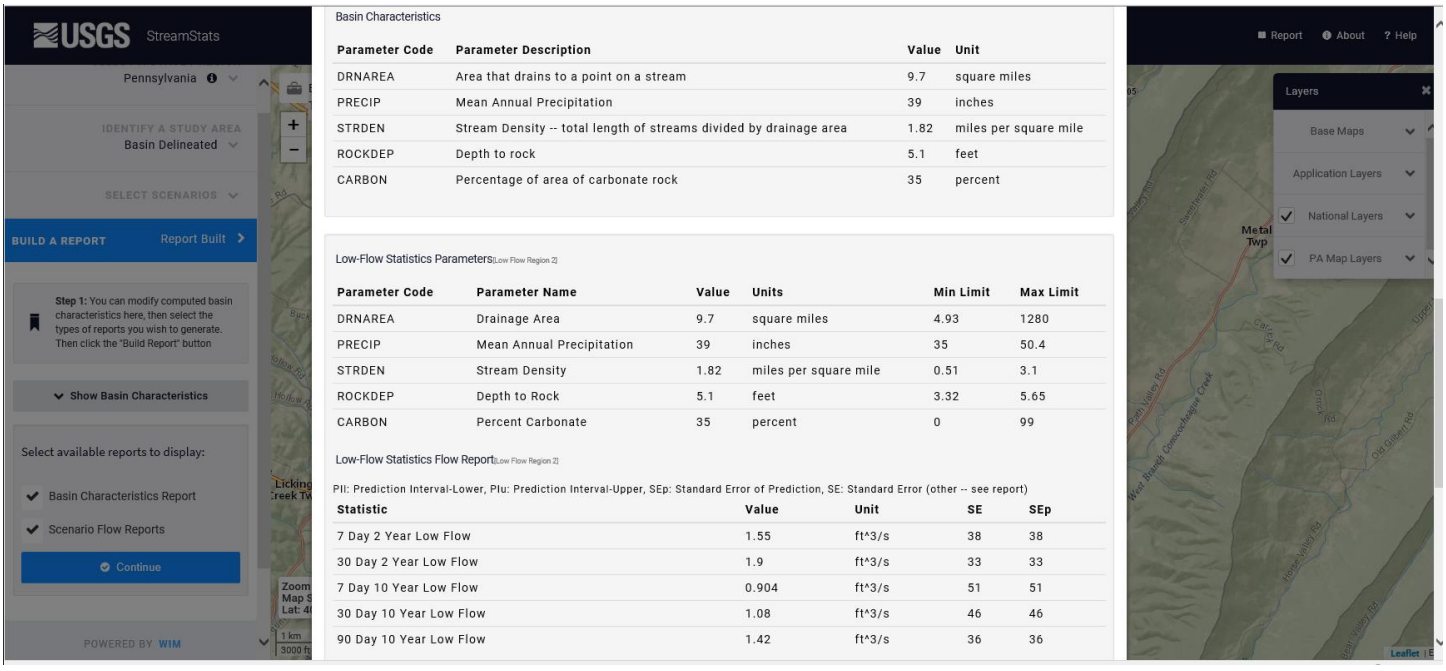
Low-Flow Statistics Parameters[Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	9.22	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
STRDEN	Stream Density	1.84	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	5.2	feet	3.32	5.65
CARBON	Percent Carbonate	36	percent	0	99

Low-Flow Statistics Flow Report[Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	SEp
7 Day 2 Year Low Flow	1.67	ft^3/s	38	38
30 Day 2 Year Low Flow	2.02	ft^3/s	33	33
7 Day 10 Year Low Flow	1	ft^3/s	51	51
30 Day 10 Year Low Flow	1.18	ft^3/s	46	46
90 Day 10 Year Low Flow	1.51	ft^3/s	36	36



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	9.7	square miles
PRECIP	Mean Annual Precipitation	39	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.82	miles per square mile
ROCKDEP	Depth to rock	5.1	feet
CARBON	Percentage of area of carbonate rock	35	percent

Low-Flow Statistics Parameters[Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	9.7	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	1.82	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	5.1	feet	3.32	5.65
CARBON	Percent Carbonate	35	percent	0	99

Low-Flow Statistics Flow Report[Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	SEp
7 Day 2 Year Low Flow	1.55	ft^3/s	38	38
30 Day 2 Year Low Flow	1.9	ft^3/s	33	33
7 Day 10 Year Low Flow	0.904	ft^3/s	51	51
30 Day 10 Year Low Flow	1.08	ft^3/s	46	46
90 Day 10 Year Low Flow	1.42	ft^3/s	36	36

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
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	4.2	6.2 Weekly Avg	XXX	25	40	50	2/month	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	5	7.6	XXX	30	45	60	2/month	8-Hr Composite
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite

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" (362-0400-001), SOPs and/or BPJ.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	4.2	6.7 Weekly Avg	XXX	25.0	40.0	50.0	2/month	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	5.0	7.6	XXX	30.0	45.0	60.0	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite

Compliance Sampling Location:

Other Comments:

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other: