pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0247227**
Facility Type	**Municipal**	APS ID	**488670**
Major / Minor	**Minor**	Authorization ID	**1398157**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Dublin Township Fulton County**	Facility Name	**Dublin Township Burnt Cabins STP**
Applicant Address	PO Box 719	Facility Address	330 Sinoquipe Road
	McConnellsburg, PA 17233		Fort Littleton, PA 17223-9608
Applicant Contact	Chris Seymore	Facility Contact	John Mixell
Applicant Phone	(717) 987-4219	Facility Phone	(717) 360-2294
Client ID	118127	Site ID	556354
Ch 94 Load Status	**Not Overloaded**	Municipality	Dublin Township
Connection Status	**No Limitations**	County	Fulton
Date Application Received	May 31, 2022	EPA Waived?	Yes
Date Application Accepted	June 1, 2022	If No, Reason	

Purpose of Application: NPDES renewal

Summary of Review

On behalf of Dublin Township Burnt Cabins STP, Mr. Craig Strait, Inc. has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. This permit renewal application was received on May 31, 2022. The permit was last reissued on December 15, 2017, authorizing discharge of treated sewage from the existing treatment plant located in Dublin Township, Fulton County into UNT to South Branch Little Aughwick. The permit will expire on December 31, 2022.

Dublin Township Burnt Cabins STP owns operates and maintains the wastewater treatment plant located in Dublin Township, Fulton County. The collection system has 100% sewers from Dublin Township. The facility has a design average annual flow and hydraulic capacity design of 0.018 MGD.

The WQM Permit Nos. 2903401 & 2903401 A-1 were issued on November 24, 2004 & January 09, 2008.

The treatment plant utilizes Ultraviolet disinfection.

Sludge use and disposal description and location(s): N/A due to the sludge is hauled away to Dublin Township Fort Littleton.

Changes from the previous permit: The E. Coli. monitoring and report requirements will add to the permit.

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	November 10, 2022
X		/s/ Daniel W. Martin, P.E. / Environmental Engineer Manager	November 16, 2022

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.018
Latitude	40º 4' 52.00"	Longitude	-77º 53' 55.00"
Quad Name	Burnt Cabins	Quad Code	1822
Wastewater Description:	Sewage Effluent		
Receiving Waters	South Branch Little Aughwick Creek (HQ-CWF, MF)	Stream Code	13182
NHD Com ID	66213129	RMI	1.54 miles
Drainage Area	13.9 mi.^{2}	Yield (cfs/mi^2)	0.07
Q_{7-10} Flow (cfs)	0.98	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)		Slope (ft/ft)	
Watershed No.	12-C	Chapter 93 Class.	HQ-CWF, MF
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	Mifflintown Borough Municipal Authority Juniata County		
PWS Waters	Juniata River	Flow at Intake (cfs)	
PWS RMI	37.26	Distance from Outfall (mi)	Approximate 83.0 miles

Changes Since Last Permit Issuance: None

Drainage Area

The discharge is to South Branch Little Aughwick Creek at RMI 1.54 miles. A drainage area upstream of the discharge is estimated to be 13.9 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 0.98 cfs and a drainage area of 13.9 mi.^{2}, which results in a Q_{7-10} low flow yield of 0.07 cfs/mi.^{2}. 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} = 0.98 cfs
Low Flow Yield = 0.98 cfs / 13.9 mi.^{2} = 0.0705 (0.07) cfs/mi.^{2}
Q_{30-10} = 1.36 * 0.98 cfs = 1.33 cfs
Q_{1-10} = 0.64 * 0.98 cfs = 0.63 cfs

The resulting Q_{7-10} dilution ratio is: Q_{stream} / $Q_{discharge}$ = 0.98 cfs / [0.018 MGD * (1.547 cfs/MGD)] = 35.2:1

South Branch Little Aughwick Creek

25 Pa. Code § 93.9n classifies South Branch Little Aughwick Creek as High-Quality Cold Water & Migratory Fish (HQ-CWF & MF) surface water. Based on the 2022 Integrated Report, South Branch Little Aughwick Creek, assessment unit ID 20522, 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 public water supply intake is for Mifflintown Borough Municipal Authority in Juniata County on the Juniata River, approximately 83.0 miles downstream of this discharge. Considering distance and dilution, the discharge is not expected to impact the water supply.

Treatment Facility Summary

Treatment Facility Name: Burnt Cabins STP

WQM Permit No.	Issuance Date
2903401	11/24/2004
2903401 A-1	1/09/2008

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with Ammonia Reduction	Extended Aeration	Ultraviolet	0.018

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.018	36	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: none

Other Comments: The original proposed system approved by the planning section was a 0.018 MGD facility with a discharge to groundwater. Analysis of soils and hydrogeology data for the proposed area determined that the discharge location was not suitable for a land disposal option. To proceed with the project, Dublin Township evaluated two alternatives for this discharge. Preliminary limits for the two options were presented to Dublin Township in February 2003. The most feasible alternative was a discharge to the HQ stream, option #1. Due to HQ designation of receiving stream, Antidegradation Best Available Combination of Technologies (ABACT) were considered to determine the effluent limits.

The most recent inspection on March 4, 2022 to the facility indicated the following treatment units:

- One bar screen;
- One equalization tank;
- One anoxic tank;
- One aeration tank;
- One clarifier;
- One UV disinfection system;
- One sludge holding tank; and
- Three blowers.

The WWTP train is:

Fine Bar Screen (1) ⇒ Equalization Tank (1) ⇒ Aeration Tank (1) ⇒ Clarifiers (1) ⇒ Ultraviolet System (1) ⇒ Sludge Holding Tank (1) ⇒ Discharge

Biosolids are hauled off to Fort Little STP.

Compliance History	
Summary of DMRs:	The DMRs reported from October 1, 2021 to September 30, 2022 are summarized in the Table below (Pages # 5, & 6).
Summary of Inspections:	4/19/2022: Mr. Clark, DEP's WQS, conducted a follow up inspection. A review of the DMRs showed that the supplemental forms were recently attached to the appropriate months. Sludge hauling receipts documents 2021 were located and on site for review. The field test results were within permitted limits. Effluent appeared clear. There were no violations identified during inspection. 3/04/2022: Mr. Clark, DEP's WQS, conducted a compliance evaluation inspection. There was a violation noted during the inspection failure to submit a required DMR supplemental report. The recommendations were to submit eDMRs for the month of August, September, October, December 2020, and March, April, September, November 2021; and the logbook shall record when sludge was removed. The effluent was clear and field test results were within the permit limits. 3/04/2021: Mr. Clark, DEP's WQS, conducted a compliance evaluation inspection. The recommendations were to update meter calibration log to include model number, time of calibration, buffers used, temperature and any maintenance performed on the meter or probes; clean up garbage around treatment plant, include more information and more details in daily logbook; and revise eDMRs and attach a completed Sewage Sludge Disposal Form for each month sludge was removed from the plant. The effluent was clear and field test results were within permitted limits. There were no violations identified during inspection. 2/26/2020: Mr. Clark, DEP's WQS, conducted a compliance evaluation inspection. The recommendations were updating daily log and including more details; and keeping separate maintenance and repair logbook. The field test results were within permitted limits. Effluent appeared clear. There were no violations identified during inspection.
Other Comments:	There is one open violation against the facility or the permittee.

Other Comments: Consent Order and Agreement (COA) dated December 12th, 2019, contained Dublin Township Burnt Cabins WWTP NPDES PA0247227 various between May 2015 and March 2019 with nine (9) final effluent limit violations, and Fort Littleton WWTP NPDES PA0246425 violations various between June 2015 and August 2018 with three (3) final effluent limit violations. However, the Department had to inform Dublin Township that its obligations under the COA was terminated as of September 8, 2021 after Dublin Township had completed all the Corrective Actions required under Paragraph 3 and paid all stipulated civil penalties due under Paragraph 5 of the COA.

Compliance History

DMR Data for Outfall 001 (from October 1, 2021 to September 30, 2022)

Parameter	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21	OCT-21
Flow (MGD) Average Monthly	0.005242	0.004232	0.005309	0.007113	0.007989	0.007631	0.005003	0.007137	0.007232	0.005566	0.005512	0.005344
Flow (MGD) Daily Maximum	0.009804	0.007125	0.00801	0.016863	0.025988	0.01561	0.009091	0.022254	0.013614	0.012333	0.015591	0.024511
pH (S.U.) Daily Minimum	7.01	7.01	7.03	7.0	7.06	7.04	6.67	7.01	7.01	7.01	7.0	6.67
pH (S.U.) Daily Maximum	7.09	7.11	7.18	7.69	7.24	7.20	8.10	7.07	7.09	7.20	7.17	7.06
DO (mg/L) Daily Minimum	7.06	7.06	7.0	7.01	7.15	7.34	6.89	7.1	7.0	7.11	7.04	7.08
CBOD5 (lbs/day) Average Monthly	0.36	0.06	0.16	0.23	0.17	0.25	0.29	0.39	0.95	0.48	0.14	0.15
CBOD5 (lbs/day) Weekly Average	0.63	0.06	0.19	0.31	0.22	0.37	0.68	0.49	1.52	0.72	0.16	0.24
CBOD5 (mg/L) Average Monthly	5.16	2.04	3.40	3.61	3.2	2.61	9.36	9.38	9.99	6.08	2.8	4.68
CBOD5 (mg/L) Weekly Average	8.32	2.08	4.79	4.29	4.4	3.11	19.0	10.8	13.4	7.0	3.19	7.35
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	13.4	7.7	11.0	15.2	19.04	9.1	6.2	13.8	17.7	34	26.4	6.2
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	18.0	8.3	13.6	17.9	19.47	14.6	10.8	23.2	21.0	52	52.7	8.4
BOD5 (mg/L) Raw Sewage Influent Average Monthly	233	288	242	262	337	149	258	318	219	434	490	213
TSS (lbs/day) Average Monthly	0.11	0.08	0.08	0.20	0.11	0.31	0.16	0.26	0.67	0.60	0.23	0.11
TSS (lbs/day) Raw Sewage Influent Average Monthly	30.8	5.4	10.4	10.5	12.7	12.6	5.5	11.4	11.4	18	12.6	3.0
TSS (lbs/day) Raw Sewage Influent Daily Maximum	58.0	8.6	14.8	13.1	15.3	22.2	10.2	19.4	15.9	25	13.7	3.3
TSS (lbs/day) Weekly Average	0.11	0.08	0.10	0.33	0.13	0.53	0.25	0.32	1.08	0.98	0.25	0.14
TSS (mg/L) Average Monthly	2.0	3.0	1.8	3.8	2.0	3.0	6.8	6.3	7.0	7.0	4.3	3.8

TSS (mg/L) Raw Sewage Influent Average Monthly	427	198	239	184	220	216	190	263	130	244	233	106
TSS (mg/L) Weekly Average	2.50	3.0	2.5	6.5	2.5	4.5	7.0	7.0	9.5	9.5	5.0	4.5
Fecal Coliform (No./100 ml) Geometric Mean	3.0	1.0	130	37.0	1.0	8.0	14	5.0	39	80	1.0	6.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	9.0	1.0	296	70.0	1.0	68	21	22	49	169	1.0	31
UV Intensity (µw/cm²) Daily Minimum	48	48	49	50	45	45	30	29	30	30	30	30
Nitrate-Nitrite (mg/L) Average Monthly	11.0	62.0	1.89	5.67	9.78	4.46	10.69	12.55	13.99	19.7	15.6	4.14
Nitrate-Nitrite (lbs) Total Monthly	25.13	53.32	2.28	8.60	15.2	8.51	13.02	15.96	23.94	28.01	23.23	4.13
Total Nitrogen (mg/L) Average Monthly	13.13	63	2.89	6.67	10.78	5.62	11.69	13.55	16.96	20.7	17.94	6.0
Total Nitrogen (lbs) Total Monthly	29.99	54.24	3.49	10.11	16.78	15.30	13.02	17.11	30.07	29.43	26.71	5.99
Ammonia (lbs/day) Average Monthly	0.03	0.01	0.03	0.04	0.03	0.05	0.01	0.04	0.10	0.04	0.03	0.02
Ammonia (mg/L) Average Monthly	0.539	0.50	0.50	0.50	0.50	0.50	0.50	0.90	1.353	0.50	0.50	0.50
Ammonia (lbs) Total Monthly	0.90	0.31	0.93	0.071	0.93	1.5	0.31	1.12	3.1	1.09	0.90	0.62
TKN (mg/L) Average Monthly	2.13	1.0	1.0	1.0	1.0	1.16	1.0	1.0	2.97	1.0	2.34	1.86
TKN (lbs) Total Monthly	4.87	0.86	1.21	1.52	1.56	2.21	1.12	1.26	5.25	1.42	3.48	1.86
Total Phosphorus (lbs/day) Average Monthly	0.006	0.005	0.02	0.018	0.013	0.038	0.014	0.018	0.042	0.03	0.02	0.0105
Total Phosphorus (mg/L) Average Monthly	0.0127	0.182	0.49	0.279	0.243	0.364	0.606	0.443	0.447	0.367	0.0341	0.322
Total Phosphorus (lbs) Total Monthly	0.18	0.155	0.62	0.032	0.403	1.14	0.434	0.504	1.30	0.822	0.60	0.651

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.018
Latitude 40º 4' 52.00" **Longitude** -77º 53' 55.00"
Wastewater Description: Sewage Effluent

ABACT limits: Due to HQ stream discharge, Antidegradation Best Available Combination of Technologies (ABACT) limits were applied to this facility. Appendix B of Water Quality Antidegradation Implementation Guidance (DEP Document ID: 391-0300-002, Nov 29, 2003) listed the Treatment Process Performance Expectations for Wastewater Discharges as follows:

Parameter	Treatment Process Performance Expectations (mg/l)		
	<2,000 GPD	2,000-50,000 GPD	>50,000 GPD
CBOD5 (May 1-Oct 31)	10	10	10
CBOD5 (Nov 1- Apr 30)	20	20	10
Suspended Solids	20	10	10
NH3-N (May 1 – Oct 31)	5.0	3.0	1.5
NH3-N (Nov 1- Apr 30)	15.0	9.0	4.5
Disinfection	UV		
Other parameters as needed	Determined by the size and characteristics of the proposed discharge		

Comments:

Water Quality-Based Limitations

Ammonia (NH_3-N):
NH_3N calculations are 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 WQM 7.0 computer model of the stream:

*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	20°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20ºC	(Default)
*	Background NH_3-N	=	0 mg/L	(Default)

Regarding NH_3-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a limit of 25.0 mg/L as a monthly average and 50.0 mg/L IMAX are necessary to protect the aquatic life from toxicity effects at the point of discharge. However, the existing limits of 1.5 mg/L monthly average & 3.0 mg/L IMAX are more stringent and will remain in the proposed permit. Per anti-backsliding policy, the existing winter average monthly limit of 4.5 mg/L & IMAX limit of 9.0 mg/L will remain in place. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Summer average monthly mass limit: 1.5 mg/L x 0.018 MGD x 8.34 = 0.225 (0.2) lbs/day
Winter average monthly mass limit: 4.5 mg/L x 0.018 MGD x 8.34 = 0.676 (0.7) lbs/day

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit of 25.0 mg/l, or secondary treatment, is adequate to protect the water quality of the stream. The existing permit 10.0 mg/L as AML, 15.0 mg/L as weekly average limit (AWL), & 20.0 mg/L as IMAX will be in the proposed permit. Recent DMRs and inspection reports show that the facility has typically been achieving concentrations below this limit. Mass limits are calculated as follows:

Average monthly mass limit: 10.0 mg/L x 0.018 MGD x 8.34 = 1.5 lbs/day
Average weekly mass limit: 15.0 mg/L x 0.018 MGD x 8.34 = 2.2 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(1).

Total Suspended Solids (TSS):
The existing technology-based limits of 10.0 mg/L average monthly, 15.0 mg/L weekly average, and 20.0 mg/L instantaneous maximum will remain in the proposed permit based on the minimum level of effluent quality attainable by secondary treatment based on 25 Pa. Code § 92a.47. 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: 10.0 mg/L x 0.018 MGD x 8.34 = 1.5 lbs/day
Average weekly mass limit: 15.0 mg/L x 0.018 MGD x 8.34 = 2.2 lbs/day

Dissolved Oxygen (D.O.):
The D.O. goal is 6.0 mg/L. However, a minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. It is recommended that this limit be maintained in the proposed permit to ensure the protection of water quality standards. This approach is consistent with DEP's current Standard Operating Procedure (SOP) No. BCW-PMT-033, version 1.9 revised March 22, 2021, and has been applied to other point source dischargers throughout the state.

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 1,000/100ml and § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml.

E. Coli:
As recommended by DEP's SOP No. BCW-PMT-033, version 1.9 revised March 22, 2021, a routine monitoring for E. Coli will be included in the proposed permit under 25 Pa. Code § 92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/year will be included in the permit to be consistent with the recommendation from this SOP.

UV:
The UV system daily monitor and report the UV light intensity ($\mu W/cm^2$) will remain in the proposed permit.

Raw Sewage Influent Monitoring:
As a result of negotiation with EPA, influent monitoring of TSS and BOD_5 are required for any POTWs; therefore, influent sampling of BOD_5 and TSS will be remain in the proposed permit. A 24-hr composite sample type will be required to be consistent with the proposed sampling frequency for TSS and BOD_5 in the effluent.

Toxics:
DEP utilizes a Toxics Management Spreadsheet (last modified on March 2021 ver. 1.3) to facilitate calculations necessary for completing a reasonable potential analysis and determining WQBELs for toxic pollutants. The effluent testing information renewal application (page # 7) indicates that there are no toxic pollutants of concern.

Total Phosphorus:
The existing permit average monthly TP concentration of 1.0 mg/L, and 2.0 mg/l IMAX will remain in the proposed permit. Mass average monthly of 0.2 lbs/day is also in the proposed permit.

Chesapeake Bay Strategy:
Phase 2 WIP identifies Cassville WWTP as a non-significant Phase 5 facility. DEP's SOP mentioned that for facilities with design flows > 2,000 GPD will include monitoring, at a minimum, for Total Nitrogen and Total Phosphorus, with a monitoring frequency specified in DEP's technical guidance. Therefore, 1/month TN species (such as Ammonia-Nitrogen, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, and Total Nitrogen) and TP monitoring requirements will remain in the proposed permit.

Stormwater:
There is no known stormwater outfall associated with this facility.

Antidegradation (93.4):
The 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. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

The 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 receiving stream, South Branch Little Aughwick Creek, is classified as High-Quality (HQ), Cold Water Fish (CWF), and Migratory Fish (MF).

A Socio-Economic Justification (SEJ) study was submitted with the application of New Discharge in 1991 and PADEP approved the discharge to HQ stream on July 15, 1991. No additional SEJ study is warranted for this renewal. No HQ Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

Anti-Backsliding:
The proposed limits will be as stringent as existing limits; therefore, anti-backsliding is not applied in this permit term

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

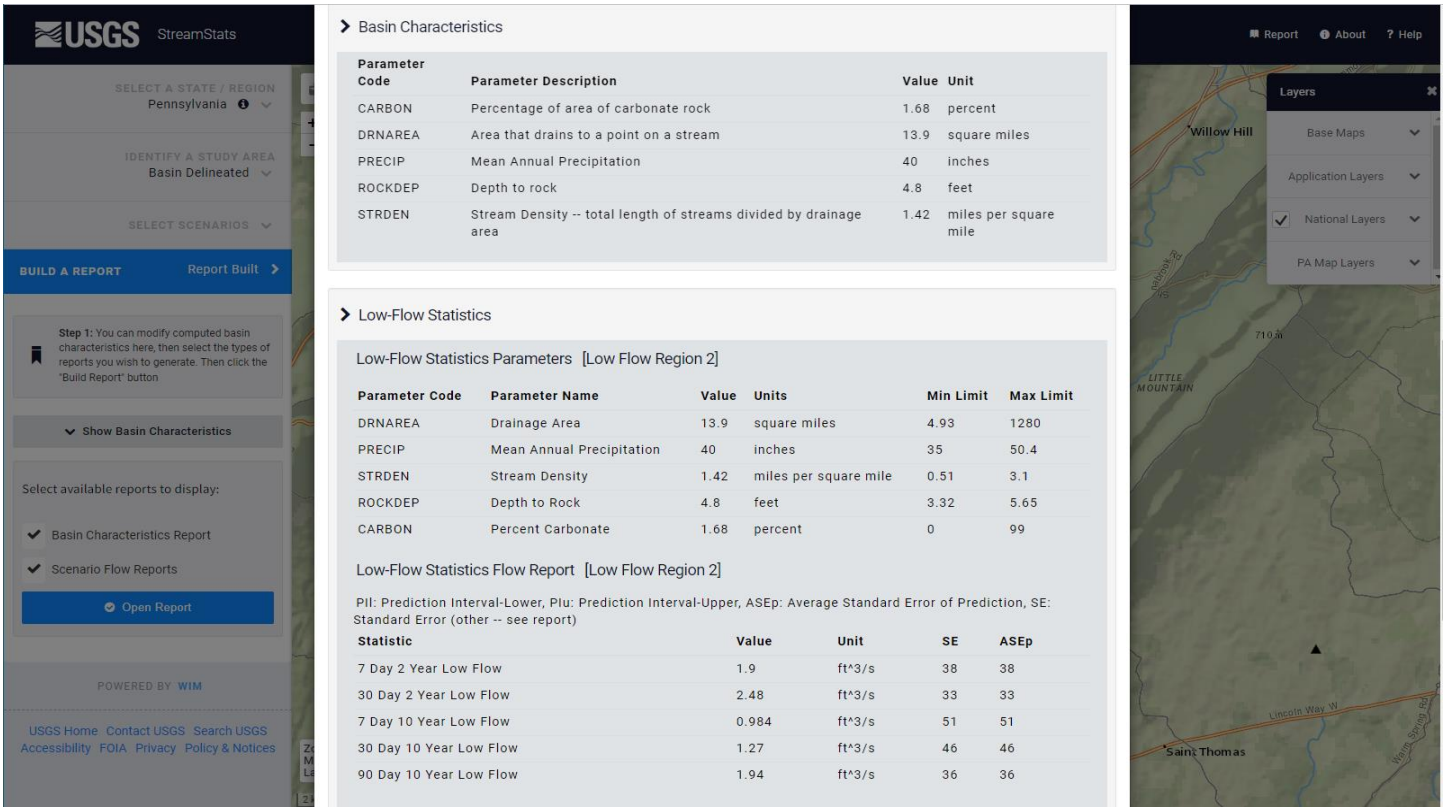
303(d) Listed Streams:
The discharge from this facility is to a stream segment that is attaining its designated use(s).

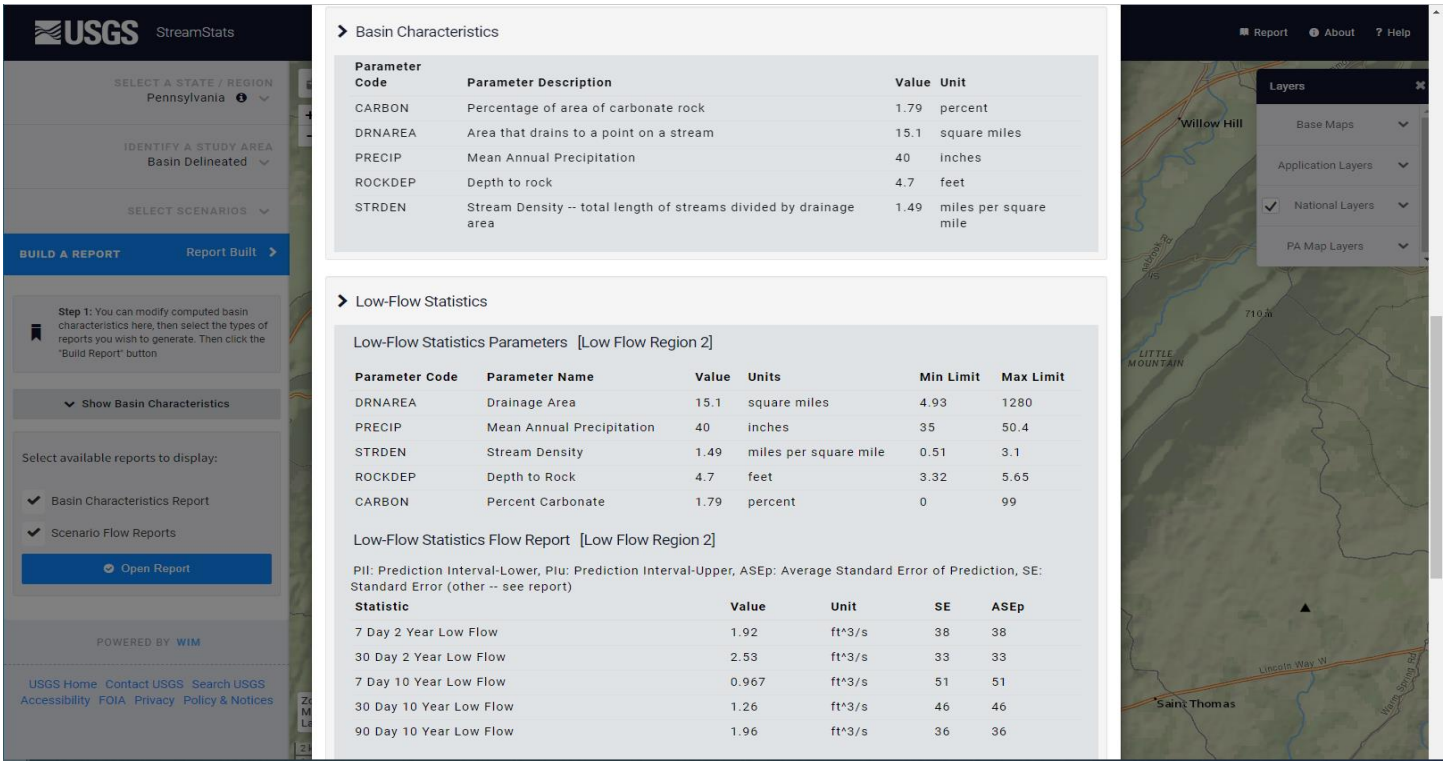
WQM 7.0 Data:

*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	20°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20°C	(Default)
*	Background NH_3-N	=	0 mg/L	(Default)

Node 1: Outfall 001 at South Branch Little Aughwick Creek (13182)
Elevation: 847 ft (USGS National Map Viewer)
Drainage Area: 13.9 $mi.^2$ (USGS PA StreamStats)
River Mile Index: 1.54 (PA DEP eMapPA)
Low Yield: 0.07 $cfs/mi.^2$
Discharge Flow: 0.018 MGD

Node 2: Just before confluence with Little Aughwick Creek
Elevation: 811 ft (USGS National Map Viewer)
Drainage Area: 15.1 $mi.^2$ (USGS PA StreamStats)
River Mile Index: 0.001 (PA DEP eMapPA)
Low Yield: 0.07 $cfs/mi.^2$
Discharge Flow: 0.000 MGD




USGS StreamStats
SELECT A STATE / REGION
Pennsylvania
IDENTIFY A STUDY AREA
Basin Delineated
SELECT SCENARIOS
BUILD A REPORT
Report Built
Step 1: You can modify computed basin characteristics here, then select the types of reports you wish to generate. Then click the "Build Report" button
Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Open Report
POWERED BY WIM
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Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 1.79 | percent
DRNAREA | Area that drains to a point on a stream | 15.1 | square miles
PRECIP | Mean Annual Precipitation | 40 | inches
ROCKDEP | Depth to rock | 4.7 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 1.49 | miles per square mile
Low-Flow Statistics
Low-Flow Statistics Parameters [Low Flow Region 2]
Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit
DRNAREA | Drainage Area | 15.1 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 40 | inches | 35 | 50.4
STRDEN | Stream Density | 1.49 | miles per square mile | 0.51 | 3.1
ROCKDEP | Depth to Rock | 4.7 | feet | 3.32 | 5.65
CARBON | Percent Carbonate | 1.79 | percent | 0 | 99
Low-Flow Statistics Flow Report [Low Flow Region 2]
PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)
Statistic | Value | Unit | SE | ASEp
7 Day 2 Year Low Flow | 1.92 | ft^3/s | 38 | 38
30 Day 2 Year Low Flow | 2.53 | ft^3/s | 33 | 33
7 Day 10 Year Low Flow | 0.967 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 1.26 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 1.96 | ft^3/s | 36 | 36
Report
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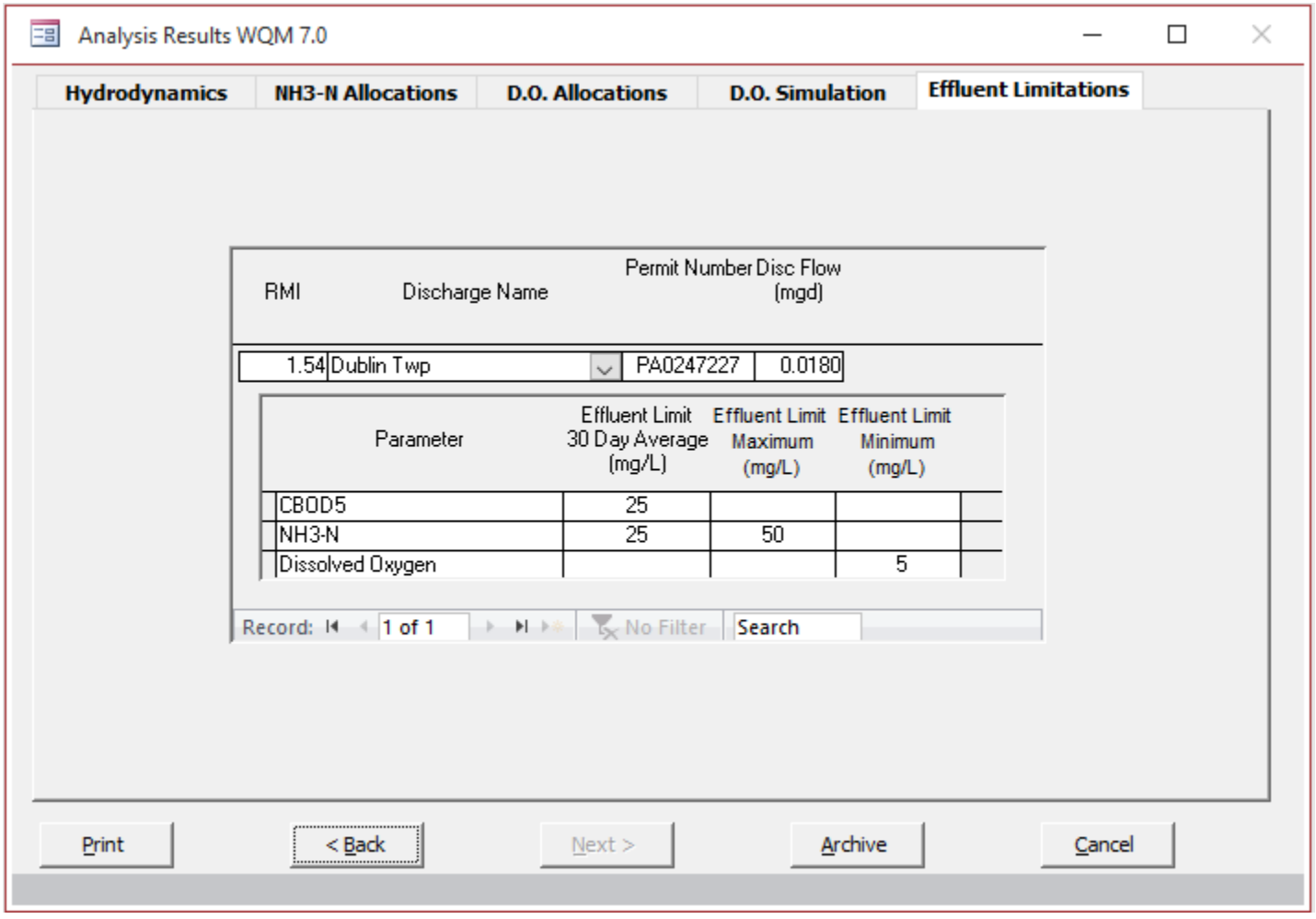
Application Layers
National Layers
PA Map Layers
Willow Hill
LITTLE MOUNTAIN
710 m
Saint Thomas


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
1.54
Dublin Twp
PA0247227
0.0180
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
25
NH3-N
25
50
Dissolved Oxygen
5
Record: 1 of 1
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rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
12C	13182	SOUTH BRANCH LITTLE AUGHWICK CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
1.540	Dublin Twp	PA0247227	0.018	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
12C	13182	SOUTH BRANCH LITTLE AUGHWICK 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
1.540	Dublin Twp	16.76	50	16.76	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
1.540	Dublin Twp	1.89	25	1.89	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)		
1.54	Dublin Twp	25	25	25	25	5	5	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
12C	13182	SOUTH BRANCH LITTLE AUGHWICK CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.540	0.018	20.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WDRatio	Reach Velocity (fps)
16.426	0.522	31.439	0.117
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
2.64	0.253	0.70	0.700
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
8.153	4.909	Tsivoglou	6
Reach Travel Time (days)			
0.806			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.081	2.59	0.66	8.24
0.161	2.53	0.62	8.24
0.242	2.48	0.59	8.24
0.323	2.43	0.55	8.24
0.403	2.38	0.52	8.24
0.484	2.34	0.50	8.24
0.564	2.29	0.47	8.24
0.645	2.24	0.44	8.24
0.726	2.20	0.42	8.24
0.806	2.15	0.40	8.24

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rptModelSpecs

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		

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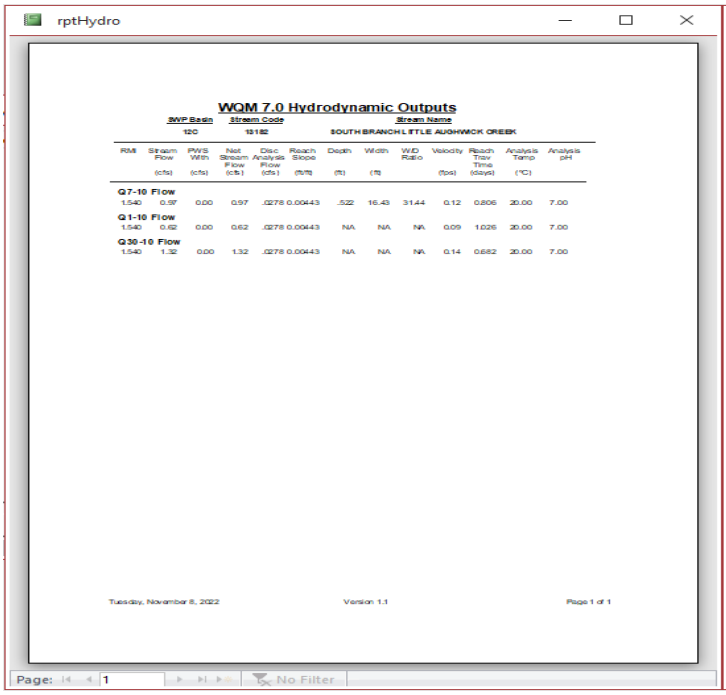

rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin: 12C Stream Code: 13182 Stream Name: SOUTH BRANCH LITTLE AUGHWICK CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.540	0.97	0.00	0.97	.0278	0.00443	.522	16.43	31.44	0.12	0.805	20.00	7.00
Q1-10 Flow												
1.540	0.62	0.00	0.62	.0278	0.00443	NA	NA	NA	0.09	1.026	20.00	7.00
Q30-10 Flow												
1.540	1.32	0.00	1.32	.0278	0.00443	NA	NA	NA	0.14	0.682	20.00	7.00

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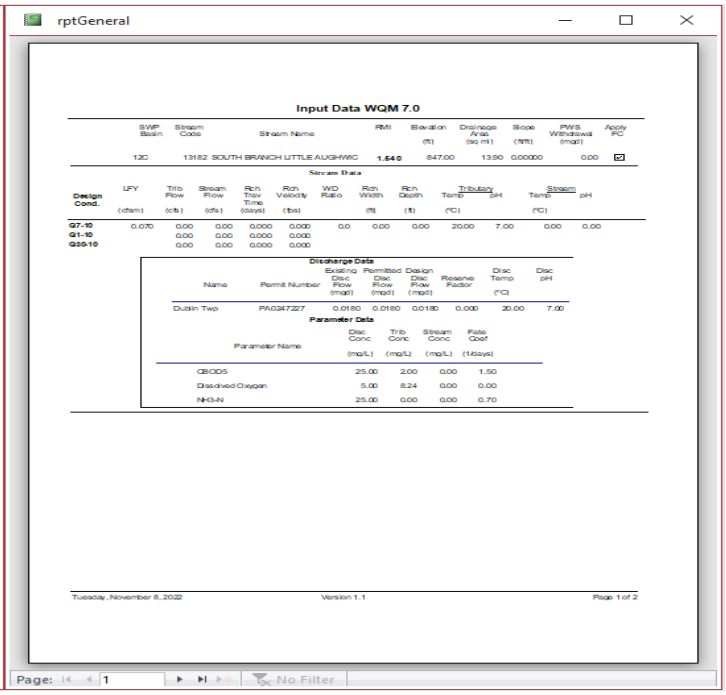

rptGeneral

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
12C	13182	SOUTH BRANCH LITTLE AUGHWIC	1.540	847.00	13.90	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.070	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
Dublin Twp	PA0247227	0.0180	0.0180	0.0180	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

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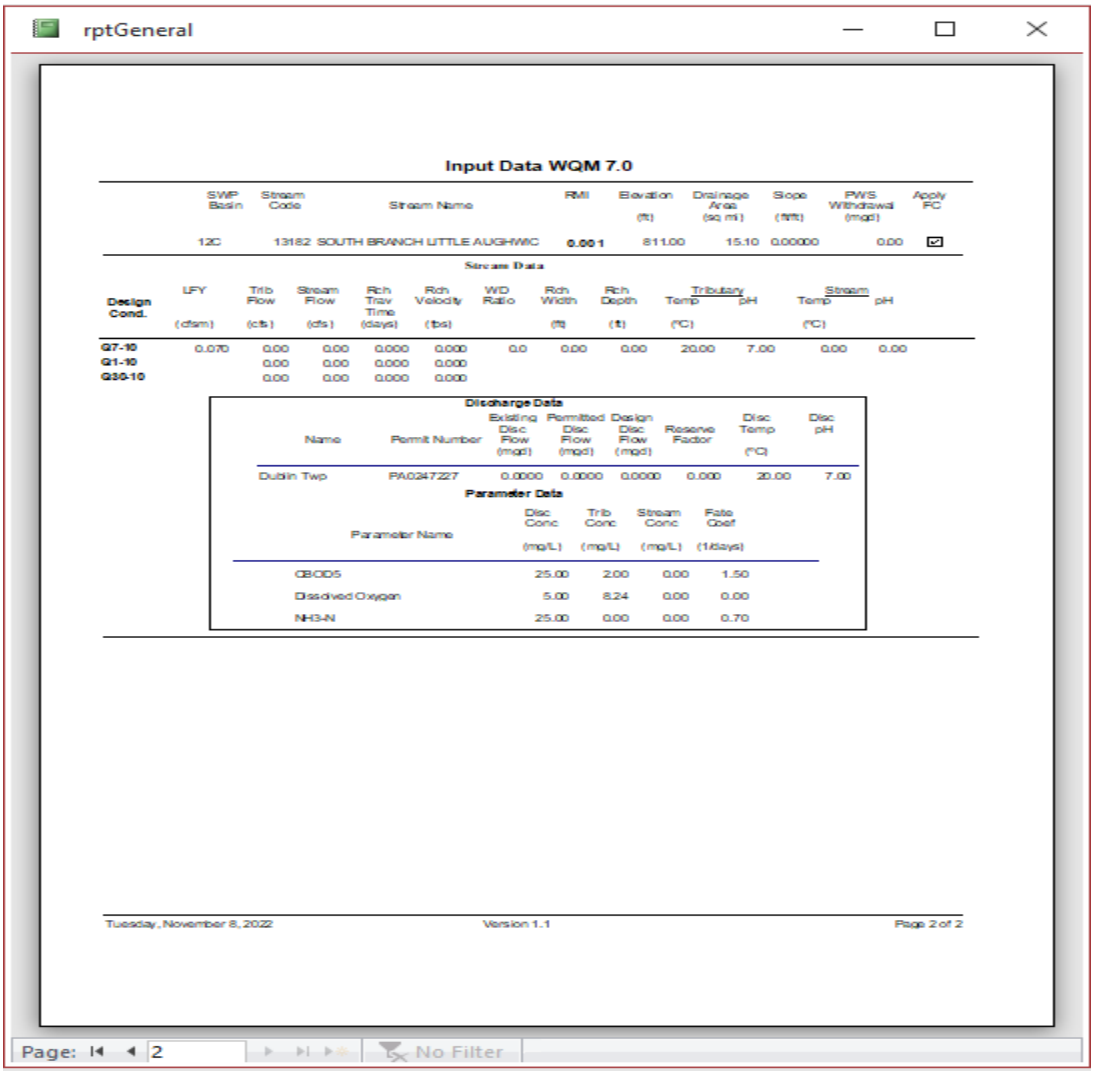

rptGeneral

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
12C	13182	SOUTH BRANCH LITTLE AUGHWIC	0.001	811.00	15.10	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	0.070	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
Dublin Twp	PA0247227	0.0000	0.0000	0.0000	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	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

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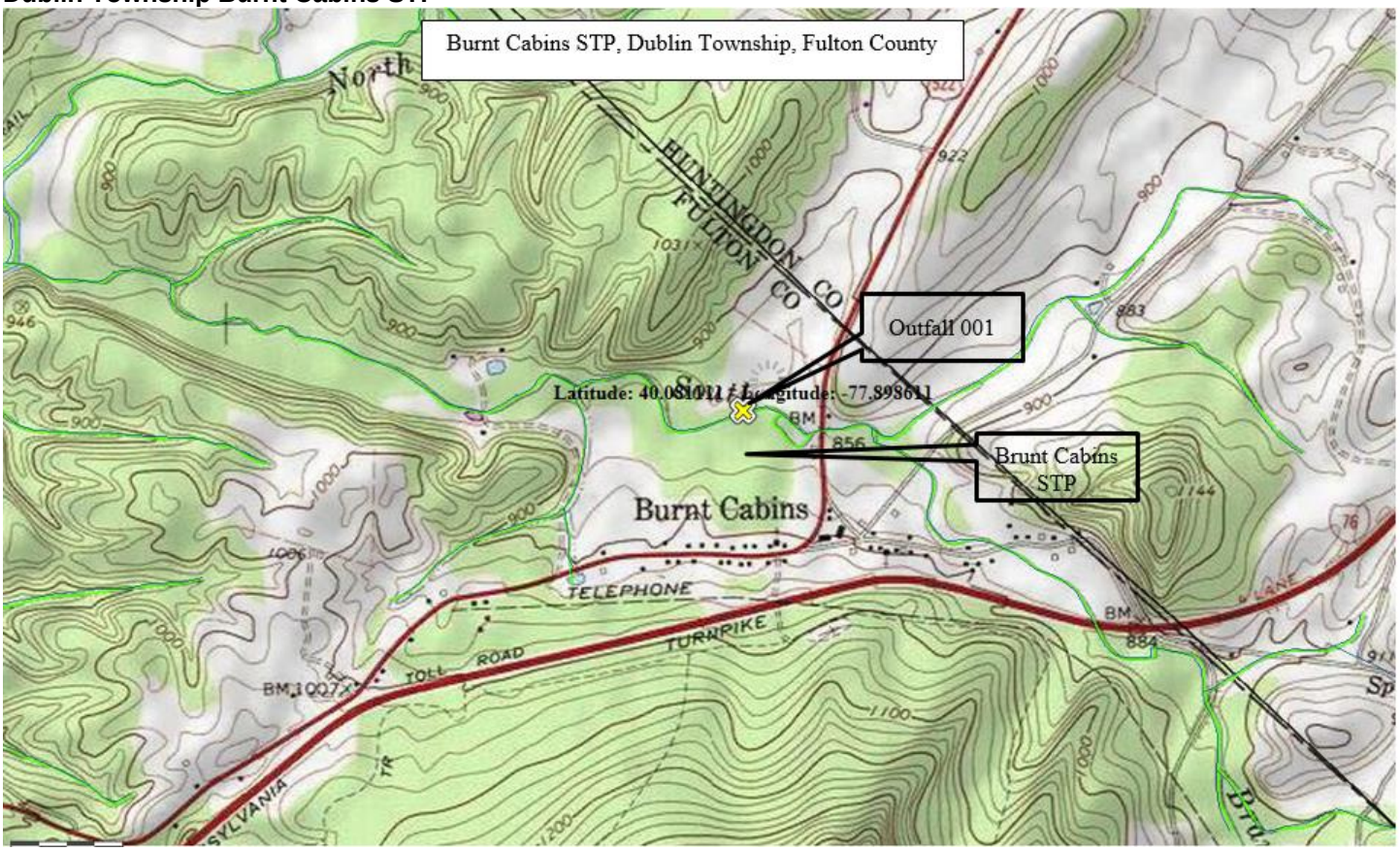
Burnt Cabins STP, Dublin Township, Fulton County
Outfall 001
Latitude: 40.081011 Longitude: -77.898611
Brunt Cabins STP
Burnt Cabins
TELEPHONE
TURNPIKE
ROAD
HUNTINGDON CO
FULTON CO

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	Weekly Average	Daily 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
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
$CBOD_5$	1.5	2.2	XXX	10.0	15.0	20	2/month	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	1.5	2.2	XXX	10.0	15.0	20	2/month	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
UV Intensity ($\mu w/cm^2$)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia May 1 - Oct 31	0.2	XXX	XXX	1.5	XXX	3	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	0.7	XXX	XXX	4.5	XXX	9	2/month	24-Hr Composite
Total Phosphorus	0.2	XXX	XXX	1.0	XXX	2	2/month	24-Hr Composite

Existing Effluent Limitations and Monitoring Requirements

Chesapeake Bay 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		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/month	24-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.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily 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
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
$CBOD_5$	1.5	2.2	XXX	10.0	15.0	20.0	2/month	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	1.5	2.2	XXX	10.0	15.0	20.0	2/month	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
UV Intensity ($\mu w/cm^2$)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia May 1 - Oct 31	0.2	XXX	XXX	1.5	XXX	3.0	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	0.7	XXX	XXX	4.5	XXX	9.0	2/month	24-Hr Composite
Total Phosphorus	0.2	XXX	XXX	1.0	XXX	2.0	2/month	24-Hr Composite

Compliance Sampling Location:

Other Comments:

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.

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		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/month	24-Hr Composite

Compliance Sampling Location:

Other Comments:

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, 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: