Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**New**	Application No.	**PA0032964**
Facility Type	**Non-Municipal**	APS ID	**254**
Major / Minor	**Minor**	Authorization ID	**1542878**

Applicant and Facility Information

Applicant Name	**PA DCNR State Parks Bureau**	Facility Name	**Cowans Gap State Park**
Applicant Address	6235 Aughwick Road	Facility Address	6235 Aughwick Road
	Fort Loudon, PA 17224-9603		Fort Loudon, PA 17224-9603
Applicant Contact	Christopher Trusch	Facility Contact	Jeffrey Johns
Applicant Phone	(814) 934-5044	Facility Phone	(717) 485-3948
Client ID	64584	Site ID	452860
Ch 94 Load Status	Not Overloaded	Municipality	
Connection Status	No Limitations	County	Fulton
Date Application Received	September 19, 2025	EPA Waived?	Yes
Date Application Accepted	October 21, 2025	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

The Cowans Gap State Park's WWTP is located in Todd Township, Fulton County. The WWTP is owned and operated by the Pennsylvania Department of Conservation & Natural Resources (PA DCNR) – State Parks Bureau. The park re-opened in 2003.

The WWTP has a design capacity of 0.09 MGD but is permitted for 0.03 MGD to prevent anti-degradation of the stream, and discharges to the South Branch of Little Aughwick Creek (HQ-CWF). The discharge to a HQ stream is justified, since the outfall pre-dates the HQ classification of the stream.

PA DCNR – State Parks Bureau has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on May 22, 2020, and became effective on June 1, 2020.

The permit expired on May 31, 2025. Although, the facility did not submit the renewal permit No. PA0032964 application until 9/19/2025 thus the fee for new permit is applicable, however the 2.4 Fee Exempt Indicator shows the DCNR is among the listed agencies that are eligible for a fee waiver.

The original WQM Part II permit in 1996 can't be located in the system. The WQM No. 2925201 A-1 amendment application was submitted on 10/20/2025 and issued in 12/18/2025, which proposed maintenance modification of the existing Cowans Gap State Park WWTP with the following attributes to remain unchanged: annual average flow and hydraulic design capacity flow is 0.03 MGD.

Sludge use and disposal description and location(s): N/A because sludge hauling is by facility's contractor.

Changes from the previous permit: The E. Coli monitoring and report requirements will be added to the proposed 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	December 31, 2025
X		*Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	February 13, 2026

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.03
Latitude	40º 0' 16.51"	Longitude	-77º 55' 27.41"
Quad Name	Burnt Cabins	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	South Branch Little Aughwick Creek (HQ-CWF)	Stream Code	13182
NHD Com ID	66214047	RMI	8.33 miles
Drainage Area	5.4 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS StreamStats Gage Station (01613500)
Elevation (ft)		Slope (ft/ft)	
Watershed No.	12-C	Chapter 93 Class.	HQ-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	Newport Borough Authority, Juniata River		
PWS Waters	Juniata River	Flow at Intake (cfs)	
PWS RMI	72.93 miles	Distance from Outfall (mi)	Approximate 54 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to South Branch Little Aughwick Creek at RMI 8.33 miles. A drainage area upstream of the discharge is estimated to be 5.4 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
Streamflow will be correlated with past streamflow records taken from the nearby USGS gage station on Licking Creek (01613500). This gage station was chosen in the previous protection report because Licking Creek originates in the same foothills as the S. Branch Aughwick Creek. The Q_{7-10} here is 6.03 cfs and the drainage area is 159 mi.^{2} which results in a Q_{7-10} low flow yield of 0.04 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):

$$\text{Low Flow Yield} = Q_{7\text{-}10gage} / \text{Drainage Area}_{gage} = 6.03 \text{ cfs} / 159 \text{ mi.}^2 = 0.04 \text{ cfs/mi.}^2$$
$$Q_{7\text{-}10discharge} = 0.015 \text{ cfs/mi.}^2 * \text{Drainage Area}_{discharge} = 0.04 \text{ cfs/mi.}^2 * 5.4 \text{ mi.}^2 = 0.22 \text{ cfs}$$
$$Q_{30\text{-}10} = 1.36 * Q_{7\text{-}10discharge} = 1.36 * 0.22 \text{ cfs} = 0.3 \text{ cfs}$$
$$Q_{1\text{-}10} = 0.64 * Q_{7\text{-}10discharge} = 0.64 * 0.22 \text{ cfs} = 0.14 \text{ cfs}$$

Public Water Supply
The nearest downstream public water supply intake is an experimental system for Newport Borough on the Juniata River. An emergency permit was granted to Newport Borough Authority to use the water in the distribution system in December of 2000. It is highly probable that this system will become a permanent surface water source. Because of the distance, effluent limits and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Cowans Gap State Park				
WQM Permit No.	**Issuance Date**			
2925201 A-1	12/18/2025			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Extended Aeration	Hypochlorite	0.03
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.03		Not Overloaded	Anaerobic Digestion	Other WWTP

Changes Since Last Permit Issuance:

Other Comments:
The WWTP train is as follows:

Comminutor (1) ⇒ Aeration Tanks (2) ⇒ Clarifiers (2) ⇒ Polishing Ponds (2) ⇒ Chlorine Contact Tank (1) ⇒ Discharge (Outfall 001)

Chlorination is used for disinfection.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months are summarized in the next page.
Summary of Inspections:	8/20/2025: Mr. Clark, DEP WQS, conducted compliance evaluation inspection. The effluent at Outfall 001 appeared clear. Field test results were within the permit limits. There were no violations noted during the inspection. Recommendations were 1. Repair the aeration blower as soon as possible. 2. Use the newest version of the daily effluent supplemental form. 7/30/2024: Mr. Clark, DEP WQS, conducted compliance evaluation inspection. Field test results were within the permit limits. Recommendation was repairing the holes in lagoon liners if they will not be replaced within the next year.
Other Comments:	There are no open violations associated with this facility or permittee.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from November 1, 2024 to October 31, 2025)

Parameter	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24
Flow (MGD) Average Monthly	0.0047	0.0035	0.0038	0.0098	0.0194	0.0291	0.0068	0.0125	0.0281	0.0171	0.0188	0.0062
Flow (MGD) Daily Maximum	0.0289	0.0205	0.0113	0.0637	0.0674	0.1534	0.0305	0.0534	0.1117	0.0627	0.0687	0.0423
pH (S.U.) Instantaneous Minimum	7.2	6.97	7.04	6.78	6.82	7.11	7.26	7.46	6.89	6.9	7.26	7.3
pH (S.U.) Instantaneous Maximum	7.94	7.6	7.54	7.48	8.1	7.81	8.01	9.46	8.22	8.0	8.06	7.82
DO (mg/L) Instantaneous Minimum	4.25	3.44	5.31	4.46	4.78	3.25	5.10	8.49	5.91	5.93	5.92	5.9
TRC (mg/L) Average Monthly	0.06	0.06	0.07	0.07	0.1	0.1	0.19	0.1	0.1	0.2	0.1	0.1
TRC (mg/L) Instantaneous Maximum	0.21	0.18	0.2	0.23	1.28	0.28	0.66	0.5	0.28	1.74	0.14	0.43
CBOD5 (mg/L) Average Monthly	5.65	3.49	4.4	4.15	5.3	9.8	10.52	8	8	6	3	< 8
TSS (mg/L) Average Monthly	< 8	< 8	< 15	< 9	< 8	< 8	< 8	20	16	9	< 8	< 8
Fecal Coliform (No./100 ml) Geometric Mean	< 2	23	< 5	< 3	< 2	7	< 2.23	< 5	146	78	< 5	< 2
Fecal Coliform (No./100 ml) IMAX	< 5	60	6	9	5	9	< 5	25	164	384	21	4
Nitrate-Nitrite (mg/L) Semi-Annual Average					0.19						3.03	
Total Nitrogen (mg/L) Semi-Annual Average					2.56						7.25	
Ammonia (mg/L) Average Monthly	2.72	1.97	1.65	2.19	1.29	1.19	0.74	1.0	5.8	5.7	2.8	1.9
TKN (mg/L) Semi-Annual Average					2.37						4.22	
Total Phosphorus (mg/L) Semi-Annual Average					3.358						5.8	

Existing Effluent Limitations and Monitoring Requirements

Outfall 001,

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.) Oct 1 - Apr 30	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	3/week	Grab
pH (S.U.) May 1 - Sep 30	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
D.O. Oct 1 - Apr 30	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	3/week	Grab
D.O. May 1 - Sep 30	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC Oct 1 - Apr 30	XXX	XXX	XXX	0.5	XXX	1.6	3/week	Grab
TRC May 1 - Sep 30	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$ Nov 1 - Apr 30	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
$CBOD_5$ May 1 - Oct 31	XXX	XXX	XXX	20	XXX	40	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	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
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	7.5	XXX	15	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.5	XXX	5	2/month	8-Hr Composite
TKN	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Nitrate-Nitrite	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	Calculation
Total Phosphorus	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	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" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.) Oct 1 - Apr 30	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	3/week	Grab
pH (S.U.) May 1 - Sep 30	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO Oct 1 - Apr 30	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	3/week	Grab
DO May 1 - Sep 30	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC Oct 1 - Apr 30	XXX	XXX	XXX	0.5	XXX	1.6	3/week	Grab
TRC May 1 - Sep 30	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$ Nov 1 - Apr 30	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
$CBOD_5$ May 1 - Oct 31	XXX	XXX	XXX	20	XXX	40	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	7.5	XXX	15	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.5	XXX	5	2/month	8-Hr Composite
TKN	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	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	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Nitrate-Nitrite	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	Calculation
Total Phosphorus	XXX	XXX	XXX	Report SEMI AVG	XXX	XXX	1/6 months	8-Hr Composite

Compliance Sampling Location:

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.03
Latitude 40º 0' 16.51" **Longitude** -77º 55' 27.41"
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)

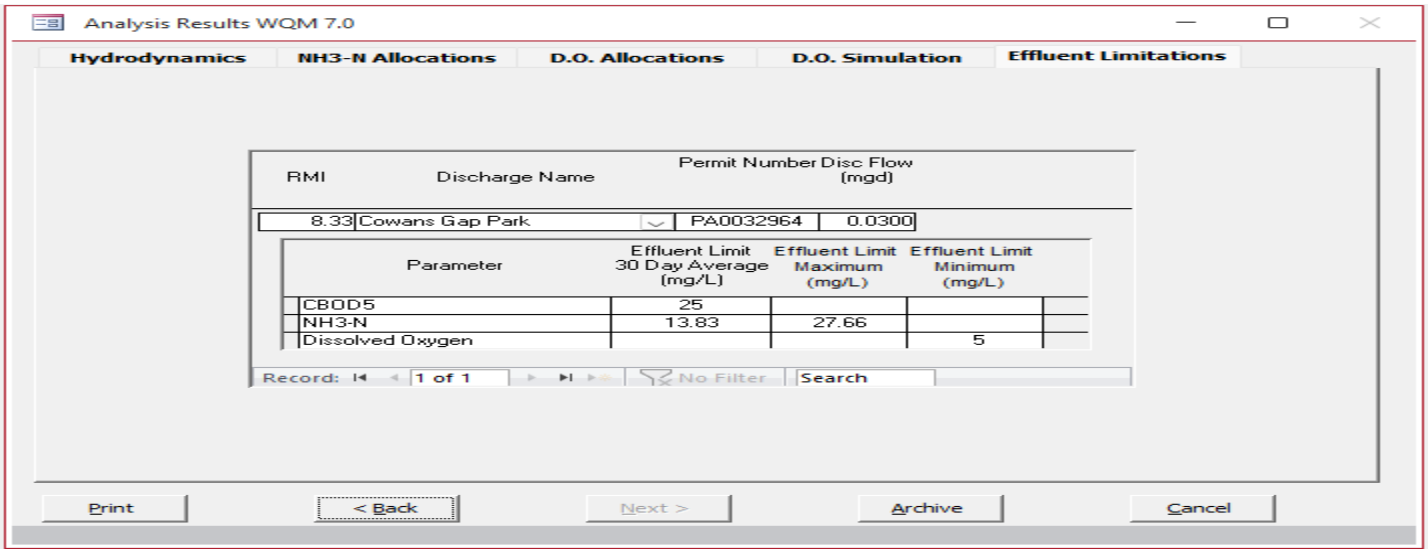
Comments:

Water Quality-Based Limitations

Ammonia (NH_3-N)

NH_3-N calculations were first 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)
Discharge Temperature	=	20°C	(Default)
Stream pH	=	7.0	(Default)
Stream Temperature	=	20ºC	(Default)
Background NH_3-N	=	0	(Default)



The printout of the WQM 7.0 output indicates that at a discharge of 0.03 MGD, limits (rounded according to the NPDES Technical Guidance 362-0400-001) of 13.83 mg/L NH_3-N as average monthly (AML) and 27.66 mg/L NH_3-N instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects. However, the agreement between DEP and DCNR requires that NH_3-N be sampled 2/month (May - Oct) of 2.5 mg/L AML & 5.0 mg/L IMAX and 2/month (Nov – Apr) of 7.5 mg/L AML & 15.0 mg/L IMAX. These monitoring requirements will remain in the proposed permit.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)
Only the minimum treatment requirements of secondary treatment will be necessary to protect water quality. The existing limits (Nov – Apr) of 25.0 mg/L average monthly & 50.0 mg/L instantaneous maximum and (May – Oct) 20.0 mg/L average monthly & 40.0 mg/L IMAX will remain in the proposed permit. The facility has consistently achieved $CBOD_5$ levels well below these limits.

Dissolved Oxygen (D.O.)
A minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. The agreement between DEP and DCNR requires that D.O. be sampled 1/day (May - Sep) and 3/week (Oct – Apr). These monitoring requirements will remain in the proposed permit.

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.

E. Coli
As recommended by DEP's SOP No. BCW-PMT-033, version 2.0 revised February 5, 2024, 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.

pH
The effluent discharge pH should remain above 6 and below 9 standard units according to 25 Pa Code § 95.2(2). Additionally, the DEP has an agreement with DCNR that necessitates seasonal monitoring requirements for certain parameters, including pH. For Cowans Gap State Park, pH must be sampled 1/day (May - Sep) and 3/week (Oct – Apr). These monitoring requirements will remain in the proposed permit.

Total Suspended Solids (TSS)
The existing limits of 30.0 mg/L average monthly, and 60.0 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. Past DMRs and inspection reports show that the facility has been consistently achieving these limits.

Toxics
No toxic parameters of concern are associated with this discharge.

Biosolids Management
Sludge is periodically dredged from the lagoon and the polishing pond, and then disposed of by a certified hauler.

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

Total Residual Chlorine
The attached computer printout (Page # 8) utilizes the equations and calculations as presented in the Department's 2003 Implementation Guidance for Residual Chlorine (TRC) (ID # 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. The agreement between DEP and DCNR requires that TRC be sampled 1/day (May - Sep) and 3/week (Oct – Apr). These monitoring requirements will remain in the proposed permit.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.22	= Q stream (cfs)	0.5	= CV Daily
0.03	= 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 = 1.531	1.3.2.iii	WLA cfc = 1.485
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.571	5.1d	LTA_cfc = 0.863

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)**

Chesapeake Bay Strategy

According to DEP's Chesapeake Bay Phase II Watershed Implementation Plan (WIP) Wastewater Supplement, this facility is considered a phase 5 non-significant sewage discharger with design flow less than 0.2 MGD but greater than 0.002 MGD. In general, DEP will issue permits for all phase 5 facilities with monitoring and reporting for Total Nitrogen (TN) and Total Phosphorus (TP) throughout the permit term at a frequency no less than annually. Furthermore, DEP's SOP No. BPNPSM-PMT-033 states that in general, at a minimum, monitoring for TN and TP should be included in new and reissued permits for sewage discharges with design flows > 2,000 gpd. At this time, the Department is not requiring a total maximum annual nitrogen or phosphorus loading cap. The report of SEMI AVG of Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, TN, and TP monitoring is already included in the existing permit and will remain in the proposed permit.

The Chesapeake Bay parameters monitoring frequency for this facility will match that of the conventional pollutants monitoring frequency of one sample per quarter.

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 new or additional discharge is proposed. The discharge pre-dates the Chapter 93 designation of HQ-CWF, and is not expected to impact the stream.

Class A Wild Trout Fisheries

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

303d Listed Streams:

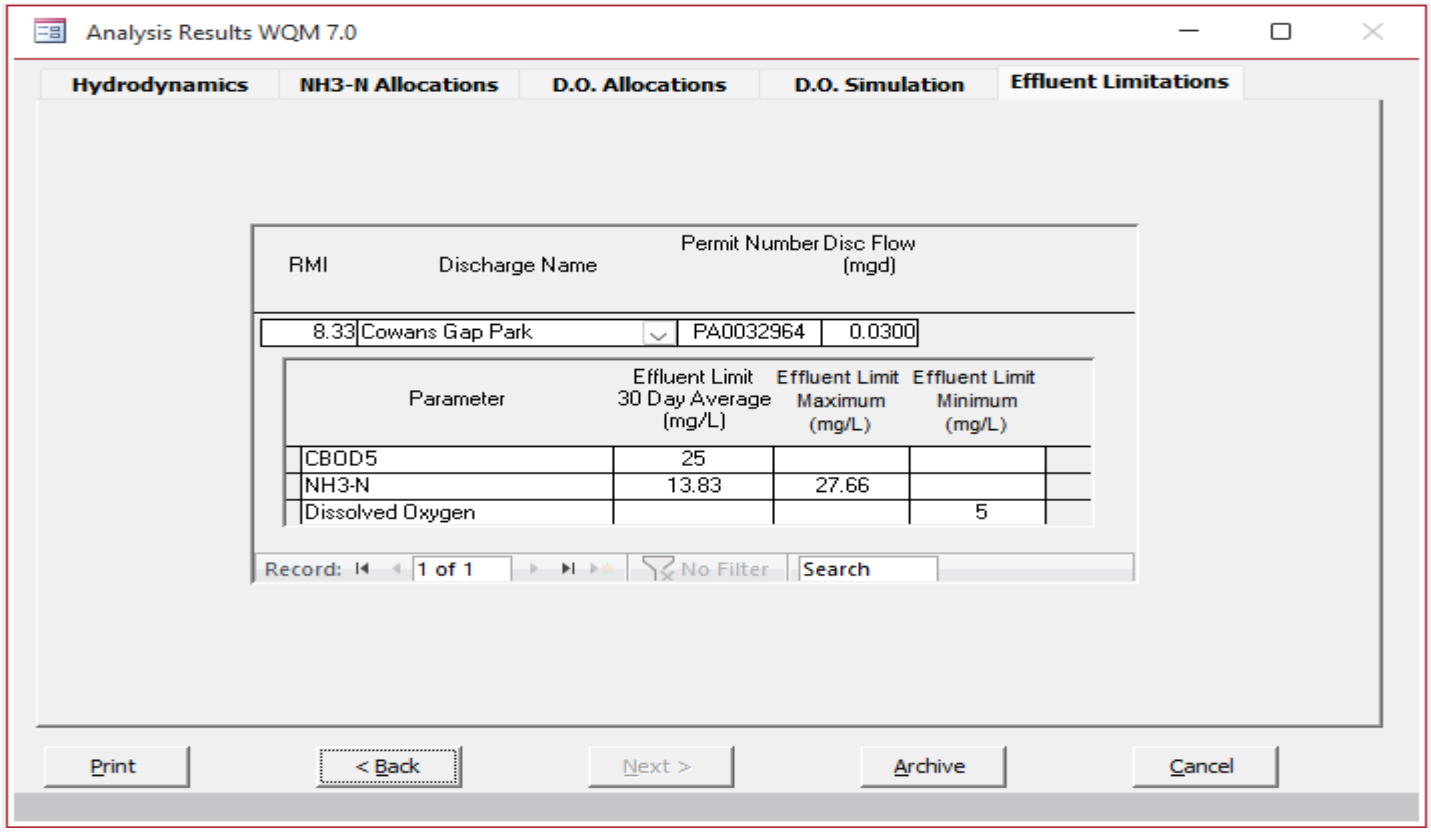
The discharge is not located on a 303d listed stream segment.

WQM 7.0 input:

- 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 (Default)

Node 1: Outfall 001 on South Branch Little Aughwick Creek (13182)
Elevation: 1225.00 ft (USGS National Map Viewer)
Drainage Area: 5.4 $mi.^2$ (USGS PA StreamStats)
River Mile Index: 8.33 (PA DEP eMapPA)
Low Flow Yield: 0.04 $cfs/mi.^2$
Discharge Flow: 0.03 MGD (NPDES Application)

Node 2: Just before conjunction South Branch Little Aughwick Creek & Trib. 13206
Elevation: 950.00 ft (USGS National Map Viewer)
Drainage Area: 15.1 $mi.^2$ (USGS PA StreamStats)
River Mile Index: 0.001 (PA DEP eMapPA)
Low Flow Yield: 0.04 $cfs/mi.^2$
Discharge Flow: 0.000 MGD



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)
8.330	Cowans Gap Park	PA0032964	0.030	CBOD5	25		
				NH3-N	13.83	27.66	
				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
8.330	Cowans Gap Par	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
8.330	Cowans Gap Par	1.89	13.83	1.89	13.83	0	0

Dissolved Oxygen Allocations

		CBOD5		NH3-N		Dissolved Oxygen			
RMI	Discharge Name	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Critical Reach	Percent Reduction
8.33	Cowans Gap Park	25	25	13.83	13.83	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
8.330	0.030	20.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
9.040	0.416	21.743	0.070
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
8.07	0.152	2.45	0.700
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.889	16.498	Owens	5
Reach Travel Time (days)			
7.290			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.729	5.43	1.47	8.24
1.458	4.86	0.88	8.24
2.187	4.35	0.53	8.24
2.916	3.89	0.32	8.24
3.645	3.48	0.19	8.24
4.374	3.12	0.11	8.24
5.103	2.79	0.07	8.24
5.832	2.50	0.04	8.24
6.561	2.23	0.02	8.24
7.290	2.00	0.01	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	5		

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
12C	13182	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)	WQ Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
8.330	0.22	0.00	0.22	.0464	0.00625	.416	9.04	21.74	0.07	7.290	20.00	7.00
Q1-10 Flow												
8.330	0.14	0.00	0.14	.0464	0.00625	NA	NA	NA	0.06	8.876	20.00	7.00
Q30-10 Flow												
8.330	0.29	0.00	0.29	.0464	0.00625	NA	NA	NA	0.08	6.304	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	8.330	1225.00	5.40	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WQ Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.040	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
Cowans Gap Park	PA0032964	0.0300	0.0300	0.0300	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	950.00	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)	WQ Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.040	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
Cowans Gap Park	PA0032964	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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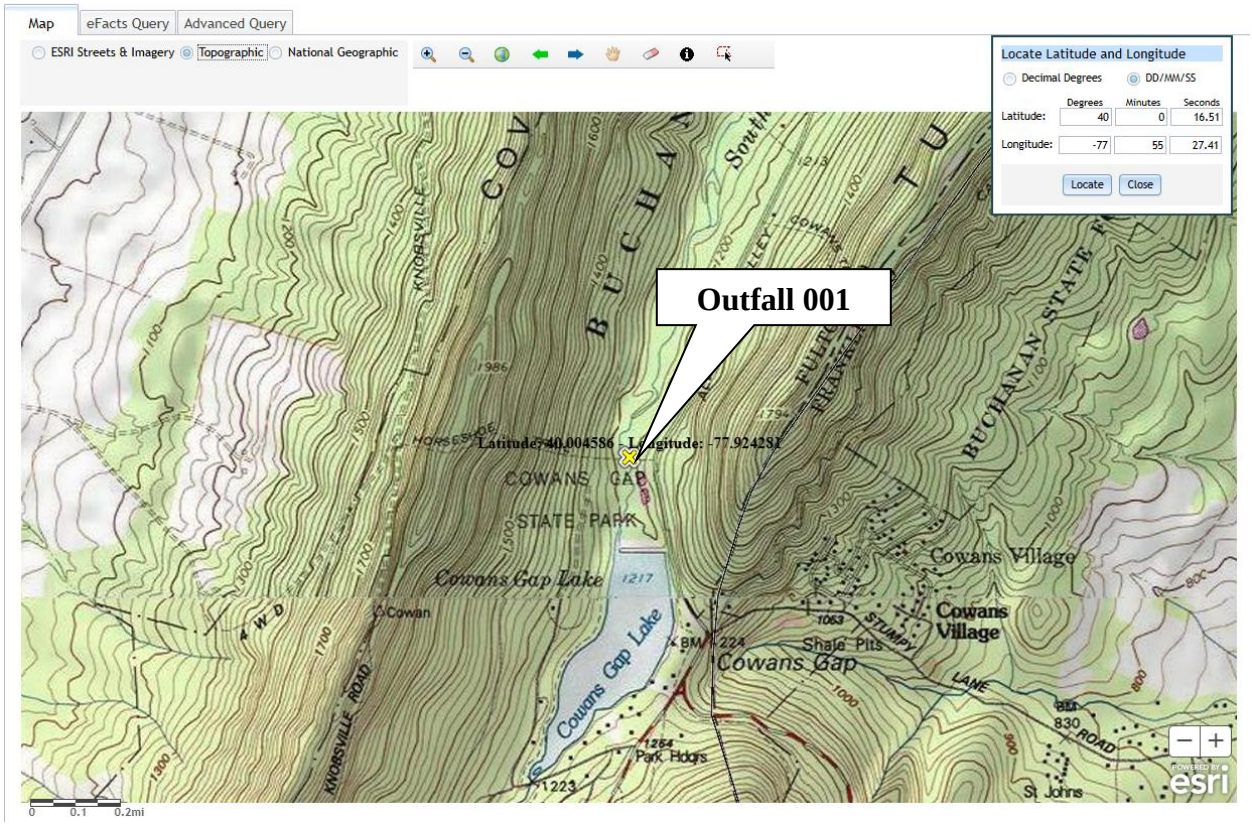
Page: 2 No Filter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eFacts Query
Advanced Query
ESRI Streets & Imagery
Topographic
National Geographic
Locate Latitude and Longitude
Decimal Degrees
DD/MM/SS
Degrees Minutes Seconds
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Longitude: -77 55 27.41
Locate
Close
Outfall 001
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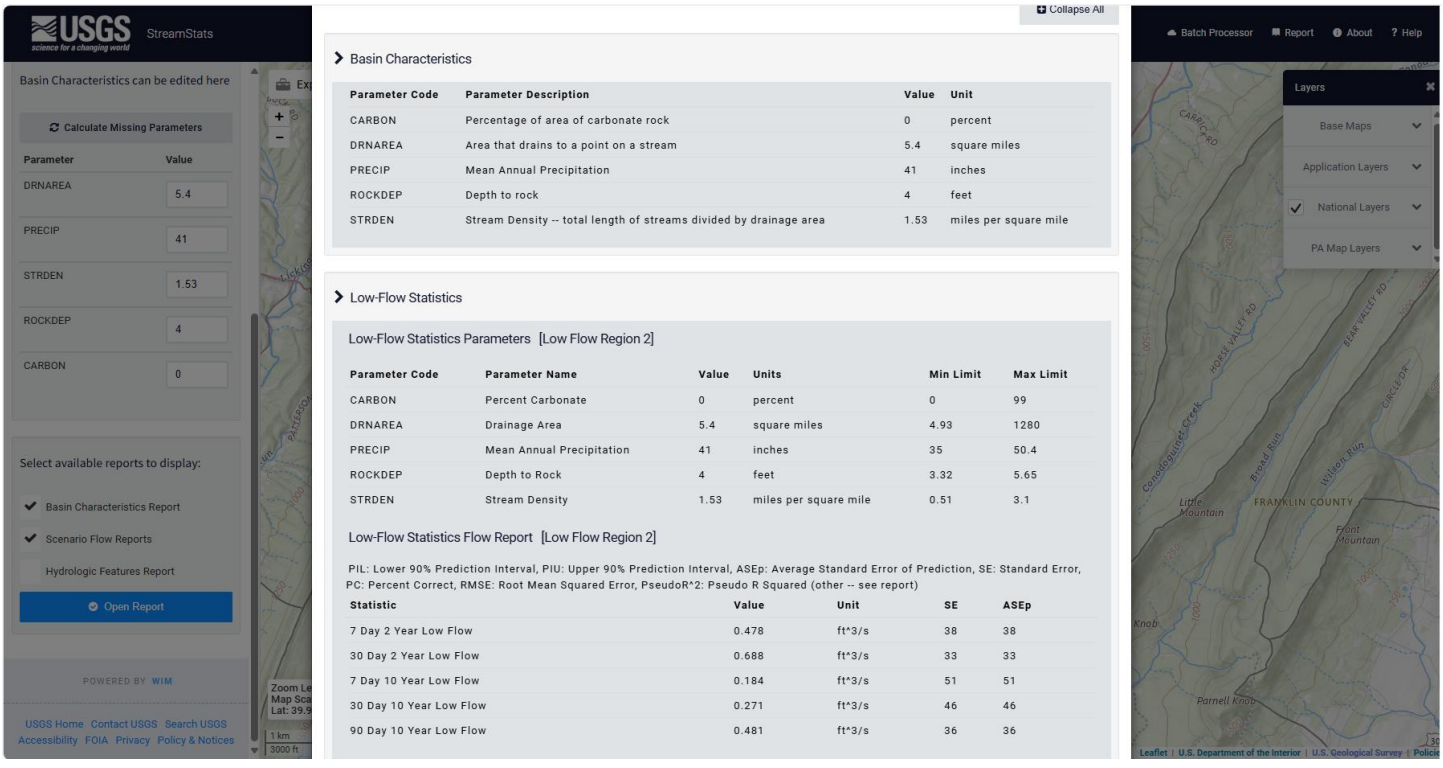
COWANS GAP STATE PARK
Cowans Gap Lake
Cowans Village
Cowans Gap
Shale Pits
Park Hogs
St Johns
Cowan
KNOBSVILLE ROAD
BUCHANAN STATE FOREST
0 0.1 0.2mi
esri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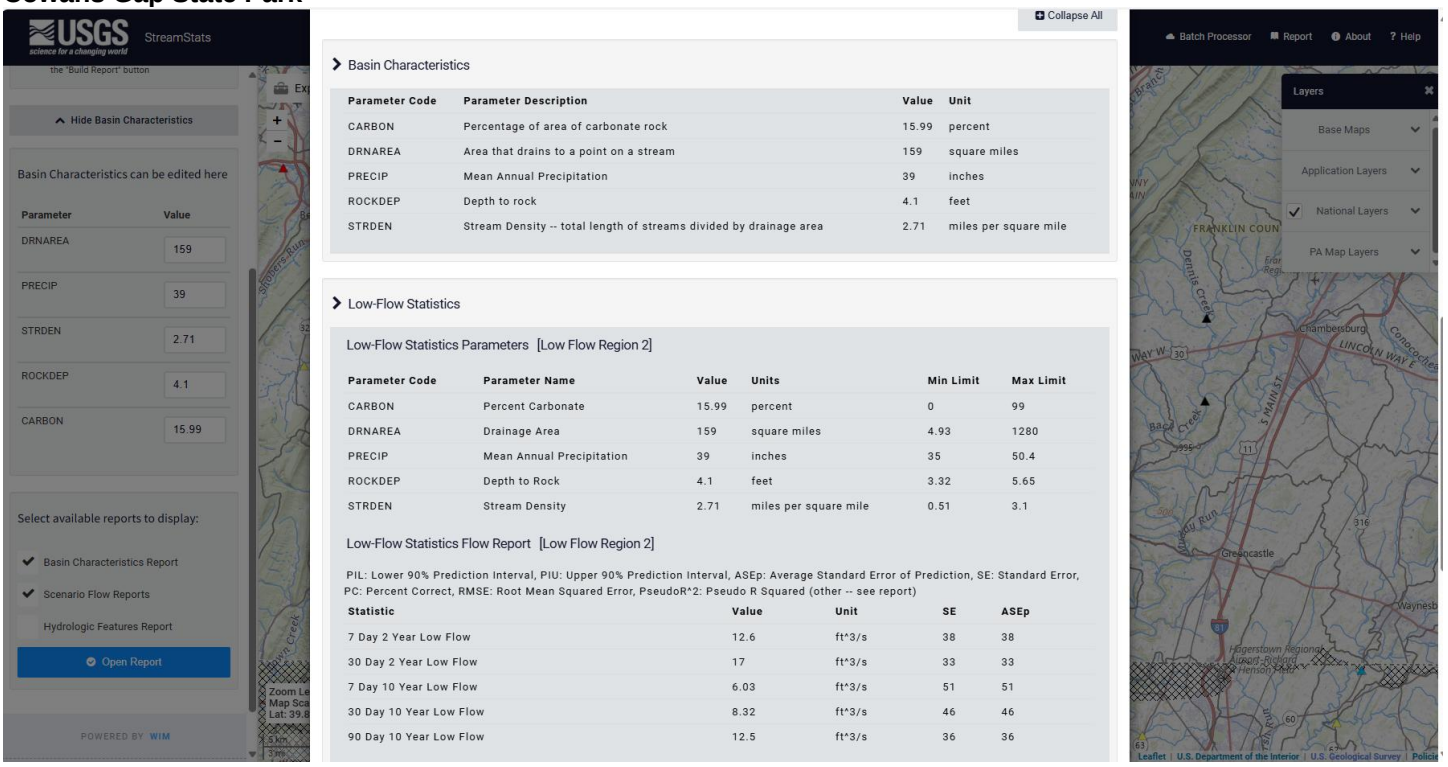
Parameter Value
DRNAREA 5.4
PRECIP 41
STRDEN 1.53
ROCKDEP 4
CARBON 0
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
POWERED BY WIM
USGS Home Contact USGS Search USGS
Accessibility FOIA Privacy Policy & Notices
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 0 | percent
DRNAREA | Area that drains to a point on a stream | 5.4 | square miles
PRECIP | Mean Annual Precipitation | 41 | inches
ROCKDEP | Depth to rock | 4 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 1.53 | 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
CARBON | Percent Carbonate | 0 | percent | 0 | 99
DRNAREA | Drainage Area | 5.4 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 41 | inches | 35 | 50.4
ROCKDEP | Depth to Rock | 4 | feet | 3.32 | 5.65
STRDEN | Stream Density | 1.53 | miles per square mile | 0.51 | 3.1
Low-Flow Statistics Flow Report [Low Flow Region 2]
PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)
Statistic | Value | Unit | SE | ASEp
7 Day 2 Year Low Flow | 0.478 | ft^3/s | 38 | 38
30 Day 2 Year Low Flow | 0.688 | ft^3/s | 33 | 33
7 Day 10 Year Low Flow | 0.184 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 0.271 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 0.481 | ft^3/s | 36 | 36
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
FRANKLIN COUNTY
Leaflet | U.S. Department of the Interior | U.S. Geological Survey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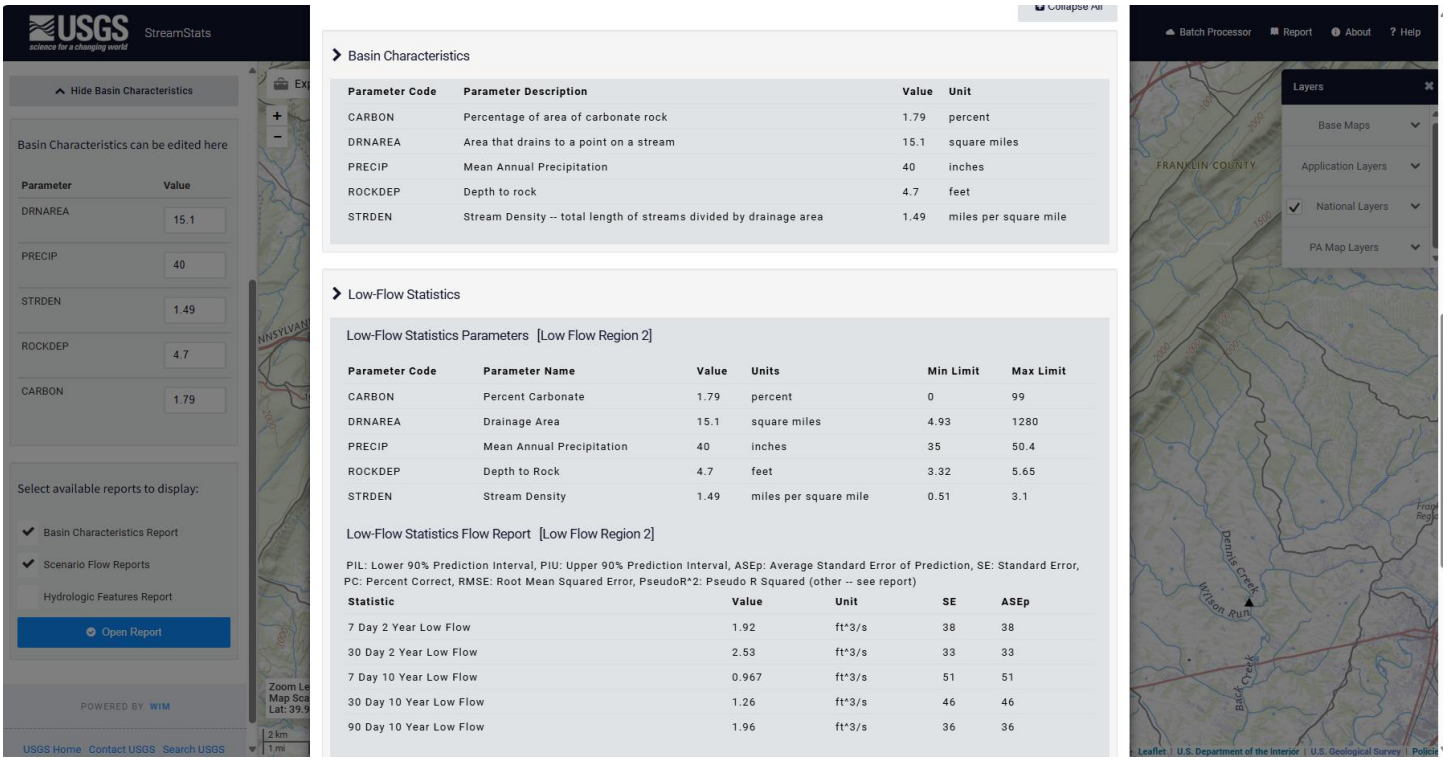
PRECIP 39
STRDEN 2.71
ROCKDEP 4.1
CARBON 15.99
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
POWERED BY WIM
Collapse All
Basin Characteristics
Parameter Code | Parameter Description | Value | Unit
CARBON | Percentage of area of carbonate rock | 15.99 | percent
DRNAREA | Area that drains to a point on a stream | 159 | square miles
PRECIP | Mean Annual Precipitation | 39 | inches
ROCKDEP | Depth to rock | 4.1 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 2.71 | 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
CARBON | Percent Carbonate | 15.99 | percent | 0 | 99
DRNAREA | Drainage Area | 159 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 39 | inches | 35 | 50.4
ROCKDEP | Depth to Rock | 4.1 | feet | 3.32 | 5.65
STRDEN | Stream Density | 2.71 | miles per square mile | 0.51 | 3.1
Low-Flow Statistics Flow Report [Low Flow Region 2]
PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)
Statistic | Value | Unit | SE | ASEp
7 Day 2 Year Low Flow | 12.6 | ft^3/s | 38 | 38
30 Day 2 Year Low Flow | 17 | ft^3/s | 33 | 33
7 Day 10 Year Low Flow | 6.03 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 8.32 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 12.5 | ft^3/s | 36 | 36
Batch Processor Report About Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Chambersburg
Greencastle
Leaflet | U.S. Department of the Interior | U.S. Geological Survey


USGS StreamStats
Hide Basin Characteristics
Basin Characteristics can be edited here
Parameter Value
DRNAREA 15.1
PRECIP 40
STRDEN 1.49
ROCKDEP 4.7
CARBON 1.79
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
POWERED BY WIM
USGS Home Contact USGS Search USGS
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
CARBON | Percent Carbonate | 1.79 | percent | 0 | 99
DRNAREA | Drainage Area | 15.1 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 40 | inches | 35 | 50.4
ROCKDEP | Depth to Rock | 4.7 | feet | 3.32 | 5.65
STRDEN | Stream Density | 1.49 | miles per square mile | 0.51 | 3.1
Low-Flow Statistics Flow Report [Low Flow Region 2]
PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (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
Batch Processor Report About Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
FRANKLIN COUNTY
Dennis Creek
Wilson Run
Leaflet | U.S. Department of the Interior | U.S. Geological Survey

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: BCW-PMT-033
☐	Other: