Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0083186**
Facility Type	**Non-Municipal**	APS ID	**1070617**
Major / Minor	**Minor**	Authorization ID	**1529772**

Applicant and Facility Information

Applicant Name	**Applegreen PA Welcome Center LLC**	Facility Name	**Sideling Hill Turnpike Plaza**
Applicant Address	208 Harristown Road	Facility Address	3748 N Hess Road Mile Marker 172 3 PA Turnpike
	Glen Rock, NJ 07452		Waterfall, PA 16689-6908
Applicant Contact	James Carey	Facility Contact	Sasha McComsey
Applicant Phone	(443) 206-6899	Facility Phone	(717) 569-7021
Client ID	370385	Site ID	2485
Ch 94 Load Status	Not Overloaded	Municipality	Taylor Township
Connection Status	No Limitations	County	Fulton
Date Application Received	June 5, 2025	EPA Waived?	Yes
Date Application Accepted	June 11, 2025	If No, Reason	
Purpose of Application	NPDES permit renewal.		

Summary of Review

Applegreen PA Welcome Centers, LLC – Sideling Hill Turnpike Plaza has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The permit was issued on October 22, 2020, and became effective on November 1, 2020. The permit authorized discharge of treated sewage from the existing wastewater treatment plant (WWTP) located in Taylor Township, Fulton County to Lick Branch. The existing permit expiration date is October 31, 2025.

The NPDES PA0083186 A-1 & WQM No. 2922401 T-1 ownership transfer were issued on 9/27/2022. The discharge design flow and hydraulic design capacity is 0.04 MGD. Sideling Hill Service Plaza contributes 100% of the wastewater to the treatment plant.

The WQM Nos. 5675030 A-1 & 5675030 A-2 dated 8/25/2003 & 1/25/2005.

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

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

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted. A public notice of the draft permit will be published in the *Pennsylvania Bulletin* for public comments for 30 days.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	September 12, 2025
x		*Maria D. Bebenek* for Daniel W. Martin, P.E. / Environmental Engineer Manager	September 18, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.04
Latitude	40º 3' 41.37"	Longitude	-78º 4' 55.81"
Quad Name	Hustontown	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Lick Branch (HQ-CWF)	Stream Code	12986
NHD Com ID	66213883	RMI	3.05
Drainage Area	0.84 mi.^{2}	Yield (cfs/mi^2)	0.04
Q_{7-10} Flow (cfs)	0.03	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1100	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	Southern Huntingdon County School District		
PWS Waters	Aughwick Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 33.0 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to Lick Branch at RMI 3.05 miles. A drainage area upstream of the discharge is estimated to be 0.84 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow
According to USGS StreamStats, the point of first use at the confluence with Lick Branch (12986) has a Q_{7-10} of 0.03 cfs and a drainage area of 0.84 mi.^{2}, which results in a Q_{7-10} low flow yield of 0.036 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} = 0.03 cfs
Low Flow Yield = 0.03 cfs / 0.84 mi.^{2} = 0.036 cfs/mi.^{2}
Q_{30-10} = 1.36 * 0.03 cfs = 0.04 cfs
Q_{1-10} = 0.64 * 0.03 cfs = 0.02 cfs

Lick Branch to Wooden Bridge Creek, Aughwick Creek to Juniata River
Under 25 Pa Code § 93.9n, the Lick Branch to Wooden Bridge Creek to Aughwick Creek is designated as Class A Wild Trout and HQ-CWF during the permit cycle. Since the discharge predates the designation and the stream is attaining its uses, no further action is warranted at this time. Integrate Report 2024, Lick Branch (Assessment Unit ID 20516) is not impaired.

Potable Water Supply Intake
The nearest downstream public water supply intake is the Southern Huntingdon County School District, Huntingdon County intake on the Aughwick Creek, approximately 33.0 miles from the point of discharge. Given the nature and dilution, the discharge is not expected to impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: Applegree PA Welcome Center LLC - Sideling Hill Turnpike Plaza				
WQM Permit No.	**Issuance Date**			
5675030 A-1	8/25/2003			
5675030 A-2	1/25/2005			
2922401 T-1	9/27/2022			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia Reduction	Extended Aeration	Chlorine With Dechlorination	0.04
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.04		Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: none

Other Comments:
The process consists of a comminutor, three (3) EQ tanks, an oxidation ditch, two (2) secondary clarifiers, two (2) media filters, a chlorine contact tank, a dechlorination system, and a post aeration unit prior to discharge through the outfall (Outfall 001).

The subject facility utilizes the following chemicals as part of their treatment process.

- Sodium hypochlorite for disinfection
- Sodium bisulfite for dechlorination
- Alum for settling/phosphorus removal
- Soda ash for pH control

Biosolids:
The total sewage sludge/biosolids production within the facility for the previous year was 6.4 dry tons.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months are summarized in next page.
Summary of Inspections:	4/18/2025: Mr. Clark, DEP WQS, conducted compliance evaluation inspection. There were no violations noted during inspection. The field sample test results were within the permit limits. Recommendations were to repair the broken valve for soda as feed system and install a second back-up valve, and test sludge for % solids when hauled from the treatment plant. 3/28/2024: Mr. Clark, DEP WQS, conducted compliance evaluation inspection. There were no violations noted during inspection. The field sample test results were within the permit limits. Recommendations were to record both grab and analysis times for daily effluent test, repair chlorine holding tank mixer, and lower temperature of effluent sampler fridge.
Other Comments:	There are no open violations associated with the permittee or the facility.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from August 1, 2024 to July 31, 2025)

Parameter	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24
Flow (MGD) Average Monthly	0.0187	0.0197	0.0185	0.0161	0.017	0.0167	0.016	0.0196	0.0193	0.0203	0.021	0.023
Flow (MGD) Daily Maximum	0.0332	0.0278	0.0282	0.0241	0.0323	0.0373	0.0262	0.0318	0.036	0.0391	0.0344	0.0419
pH (S.U.) Instantaneous Minimum	6.42	6.83	6.47	6.42	6.24	6.25	6.74	6.79	7.0	6.9	7.14	6.63
pH (S.U.) IMAX	8.23	8.22	7.66	8.02	8.09	8.06	8.34	8.12	8.06	7.87	7.93	7.84
DO (mg/L) Instantaneous Minimum	7.07	7.32	8.25	8.92	9.83	9.55	9.02	8.72	8.31	7.55	7.38	6.78
TRC (mg/L) Average Monthly	0.04	0.04	0.05	0.02	0.04	0.06	< 0.07	0.06	0.08	0.08	0.06	0.08
TRC (mg/L) Instantaneous Maximum	0.47	0.39	0.20	0.10	0.14	0.21	0.18	0.28	0.34	0.29	0.25	0.32
CBOD5 (mg/L) Average Monthly	2.3	< 2.2	< 2.0	< 2.0	2.6	3.0	< 2.0	< 3.5	4.0	< 6.8	< 3.0	< 3.0
TSS (mg/L) Average Monthly	< 4.0	< 4.1	< 4.8	< 6.3	< 4.0	< 4.0	< 4.0	5.2	< 4.0	< 4.0	3.8	7.3
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 1	< 1	< 1	< 1	< 8	< 3	2	< 1	< 5	< 5
Fecal Coliform (No./100 ml) Instantaneous Maximum	2	1	2	< 1	< 1	< 1	60	7	5	1	< 5	< 5
Nitrate-Nitrite (mg/L) Semi-Annual Average		38.5						58.5				
Total Nitrogen (mg/L) Semi-Annual Average		0.90						59.2				
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TKN (mg/L) Semi-Annual Average		39.4						< 0.5				
Total Phosphorus (mg/L) Semi-Annual Average		2.44						6.75				

Existing Effluent Limitations and Monitoring Requirements

Outfall 001,

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly		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
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.15	XXX	0.49	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10.0	XXX	20.0	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	10.0	XXX	20.0	2/month	8-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	8-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	8-Hr Composite
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	2/year	8-Hr Composite
Nitrate-Nitrite as N	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	2/year	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	2/year	Calculation
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	2/year	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.)	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	0.15	XXX	0.49	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10.0	XXX	20.0	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	10.0	XXX	20.0	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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	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

Compliance Sampling Location:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.04
Latitude 40º 3' 41.37" **Longitude** -78º 4' 55.81"
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: The existing effluent $CBOD_5$ and TSS limits of 10 mg/L as a monthly average will remain in place as per the intermittent and ephemeral stream guidance (ID # 391-2000-014).

The following technology-based limitations apply, subject to water quality analysis and best professional judgement (BPJ) where applicable:

Consistent with the Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers (91-2000-014), the following parameters are subject to the effluent limitations.

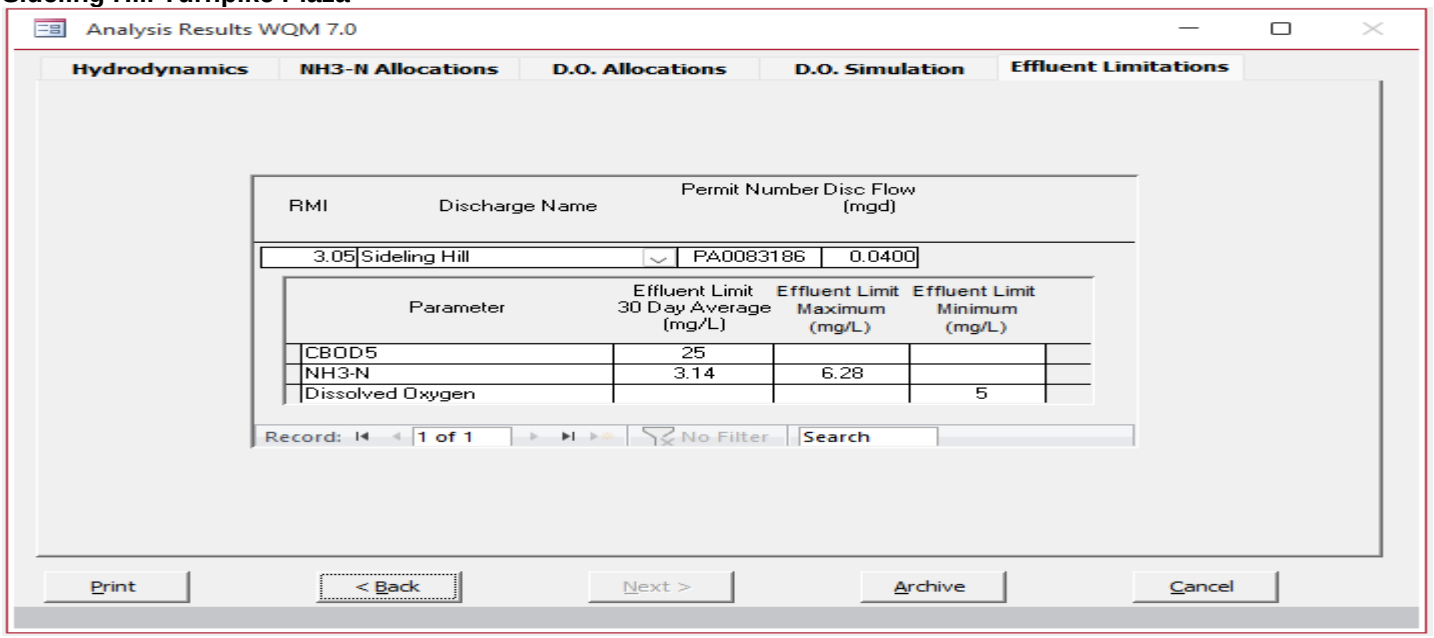
- $CBOD_5$ - 10 mg/L as a monthly average
- TSS - 10 mg/L as a monthly average
- Total N - 5 mg/L as a monthly average

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 0.04 MGD, limits (rounded according to the NPDES Technical Guidance 362-0400-001) of 3.14 mg/L NH_3-N as average monthly (AML) and 6.28 mg/L NH_3-N instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects. However, the more stringent existing limits of 3.0 mg/L AML and 6.0 mg/L IMAX will remain in the proposed permit due to anti-backsliding requirements. Additionally, past DMRs and inspection reports show that the facility has been consistently achieving concentrations under these limits.



Also, the NH_3-N winter effluent limit will be 9.0 mg/L for average monthly and 18.0 mg/L for IMAX based on a typical multiplier of 3.0 used by DEP to calculate.

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.

pH:
The effluent discharge pH should remain above 6 and below 9 standard units according to 25 Pa Code § 95.2(1).

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.

Biosolids Management:
Approximately 2,000 GPD of activated sludge is wasted from the biological treatment process on a near daily basis to a sludge holding for thickening and then to two sludge drying beds for further dewatering. Following dewatering in the sludge drying beds, the biosolids are disposed of at Walters Septic Ag. Site in East Hanover Township, PA (DEP Permit No. PAG-07-3504) or at the Manheim Borough WWTP in Manheim, PA (DEP Permit No. 020893).

Toxics:
No toxic parameters of concern associated with this discharge. The discharge consists entirely of domestic sewage, no industrial users discharge to the facility.

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.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.03	= Q stream (cfs)	0.5	= CV Daily
0.04	= 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 =	0.174	1.3.2.iii	WLA cfc =	0.162
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.065	5.1d	LTA_cfc =	0.094

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.080	AFC
		INST MAX LIMIT (mg/l) =	0.260	

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:
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 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 -0.4mgd) will be required to monitor and report TN and TP during permit renewal monthly and Phase 5 (below 0.2mdg) will monitor during current permit renewal once a year unless two years of monitoring 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, will be required to monitor and report Total Phosphorus, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen and Total Nitrogen once a year.

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

Anti-Degradation (93.4)
The effluent limits for this discharge have been developed to ensure that the existing instream water used and the level of water quality necessary to protect the existing uses are maintained and protected. The basin is classified as a HQ-CWF. The discharge pre-dates the Chapter 93 designation of HQ-CWF for Lick Branch, 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

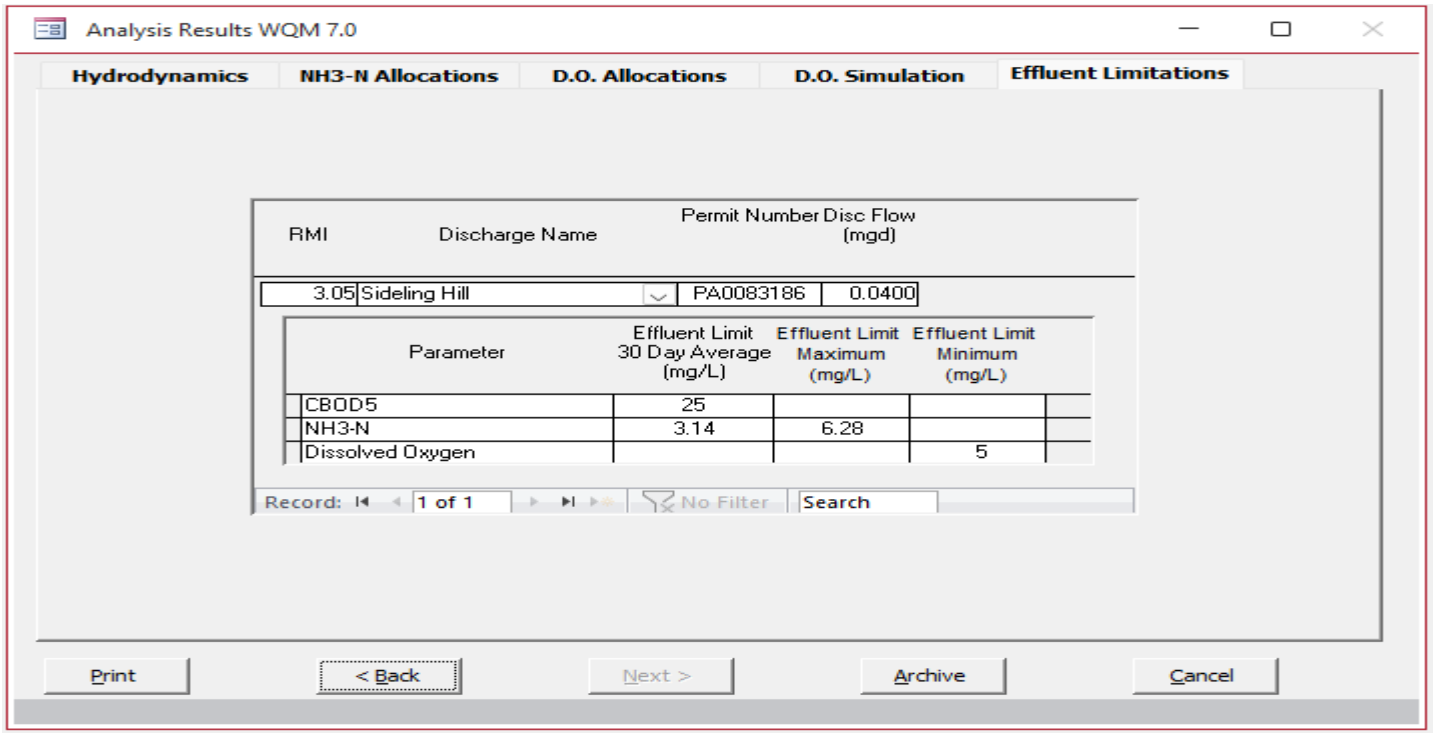
*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	20°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20°C	(Default for CWF)
*	Background NH_3-N	=	0 mg/L	(Default)

Node 1: Outfall 001 on Lick Branch (12986)

Elevation:	1100.0 ft (USGS National Map Viewer)
Drainage Area:	0.84 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	3.05 (PA DEP eMapPA)
Low Flow Yield:	0.036 $cfs/mi.^2$
Discharge Flow:	0.04 MGD (NPDES Application)

Node 2: Just before confluence Lick Branch to Wooden Creek

Elevation:	1000.0 ft (USGS National Map Viewer)
Drainage Area:	3.29 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	0.5 (PA DEP eMapPA)
Low Flow Yield:	0.036 $cfs/mi.^2$
Discharge Flow:	0.000 MGD



rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
12C	12986	LICK BRANCH

RMI	Name	Permit Number	Disc. Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
3.050	Sideling Hill	PA0083186	0.040	CBOD5	25		
				NH3-N	3.14	6.28	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
12C	12986	LICK BRANCH

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
3.050	Sideling Hill	16.76	22	16.76	22	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
3.050	Sideling Hill	1.69	3.14	1.69	3.14	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5 Baseline (mg/L)	CBOD5 Multiple (mg/L)	NH3-N Baseline (mg/L)	NH3-N Multiple (mg/L)	Dissolved Oxygen Baseline (mg/L)	Dissolved Oxygen Multiple (mg/L)	Critical Reach	Percent Reduction
3.05	Sideling Hill	25	25	3.14	3.14	5	5	0	0

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rptDOSim

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
12C	12986	LICK BRANCH

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.050	0.040	20.000	7.000
Reach Width (ft)	Reach Depth (ft)	Reach WDRatio	Reach Velocity (fps)
4.487	0.346	12.966	0.059
Reach CBOD5 (mg/L)	Reach K1 (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
17.45	0.625	2.11	0.700
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
6.065	23.301	Owens	5
Reach Travel Time (days)			
2.626			

Subreach Results

Trav.Time (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.263	14.05	1.76	6.13
0.525	11.31	1.46	6.24
0.788	9.11	1.22	6.24
1.050	7.34	1.01	6.24
1.313	5.91	0.84	6.24
1.576	4.76	0.70	6.24
1.838	3.83	0.58	6.24
2.101	3.08	0.48	6.24
2.363	2.48	0.40	6.24
2.626	2.00	0.34	6.24

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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: 12C | Stream Code: 12986 | Stream Name: LICK BRANCH

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												
3.050	0.03	0.00	0.03	.0619	0.00743	3.46	4.49	12.97	0.06	2.626	20.00	7.00
Q1-10 Flow												
3.050	0.02	0.00	0.02	.0619	0.00743	NA	NA	NA	0.06	2.818	20.00	7.00
Q30-10 Flow												
3.050	0.01	0.00	0.01	.0619	0.00743	NA	NA	NA	0.06	2.467	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	12986	LICK BRANCH	3.050	1100.00	0.01	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfs/mi)	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	0.006	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
Sideling Hill	PA0092185	0.0400	0.0400	0.0400	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: 12C | Stream Code: 12986 | Stream Name: LICK BRANCH | RMI: 3.050 | Elevation (ft): 1100.00 | Drainage Area (sq mi): 0.01 | Slope (ft/ft): 0.00000 | PWS Withdrawal (mgd): 0.00 | Apply FC: ☑

Stream Data

Design Cond.	LFY (cfs/mi)	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	0.006	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
Sideling Hill	PA0092185	0.0400	0.0400	0.0400	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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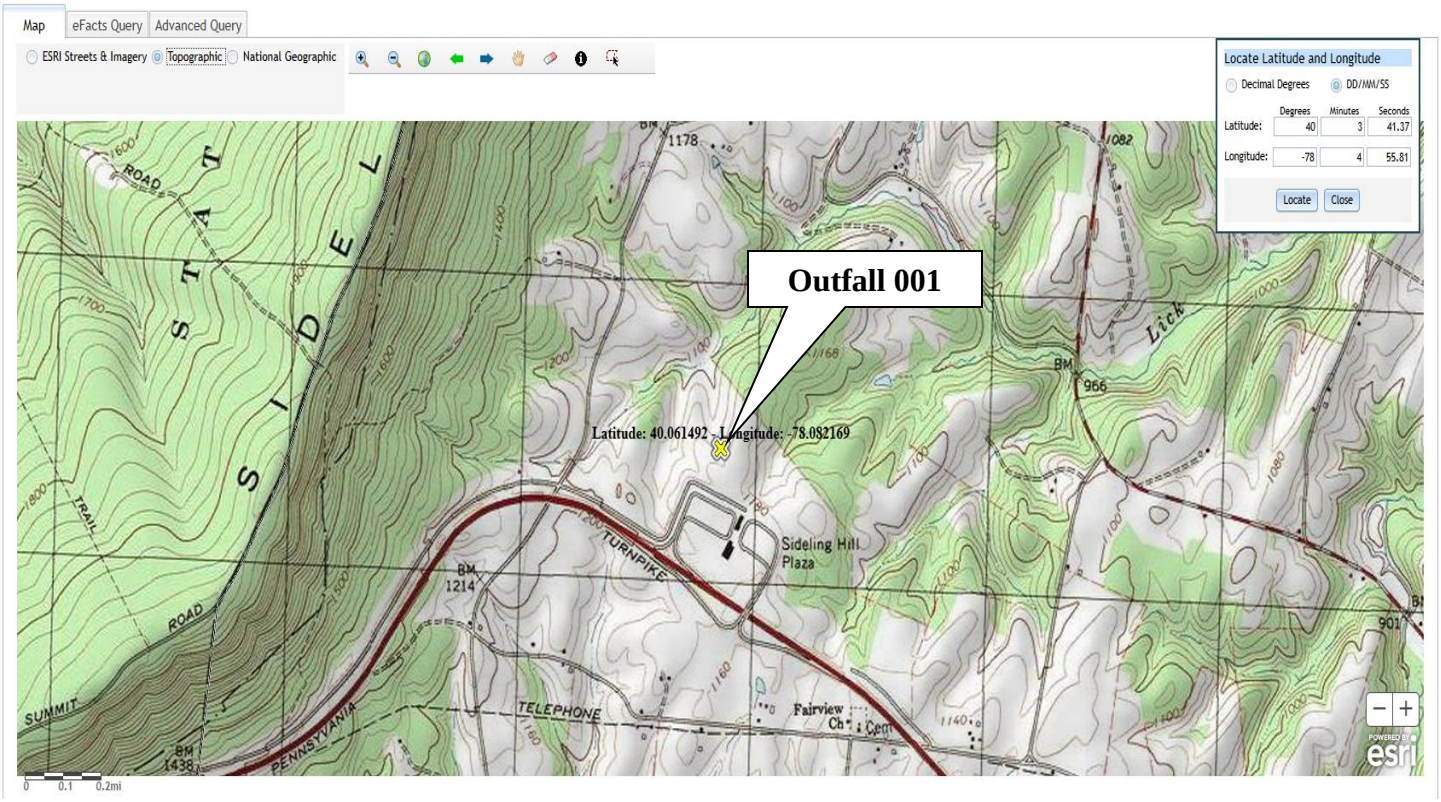
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eFacts Query
Advanced Query
ESRI Streets & Imagery
Topographic
National Geographic
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Close
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TURNPIKE
SIDELING HILL ROAD
SUMMIT
TELEPHONE
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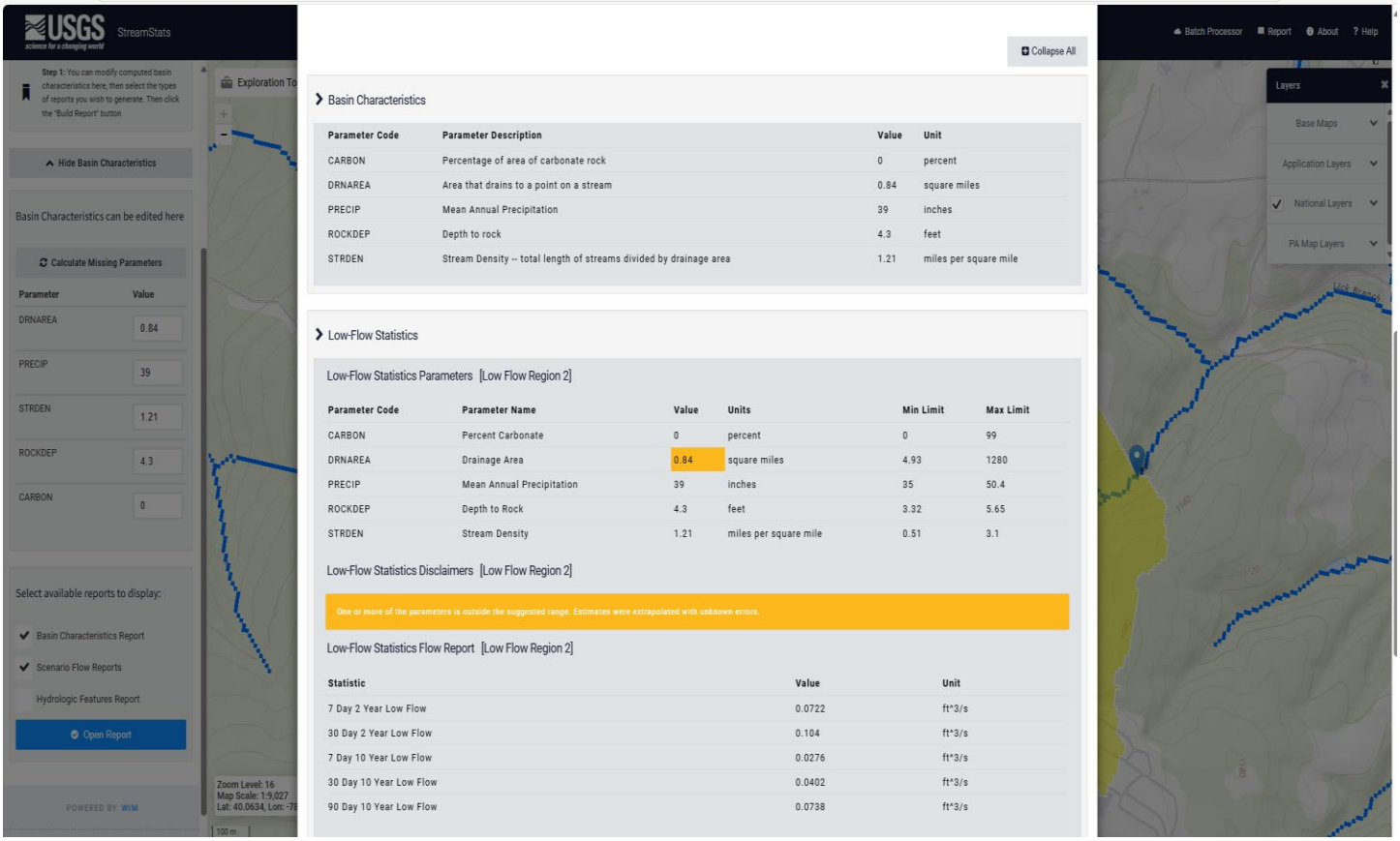
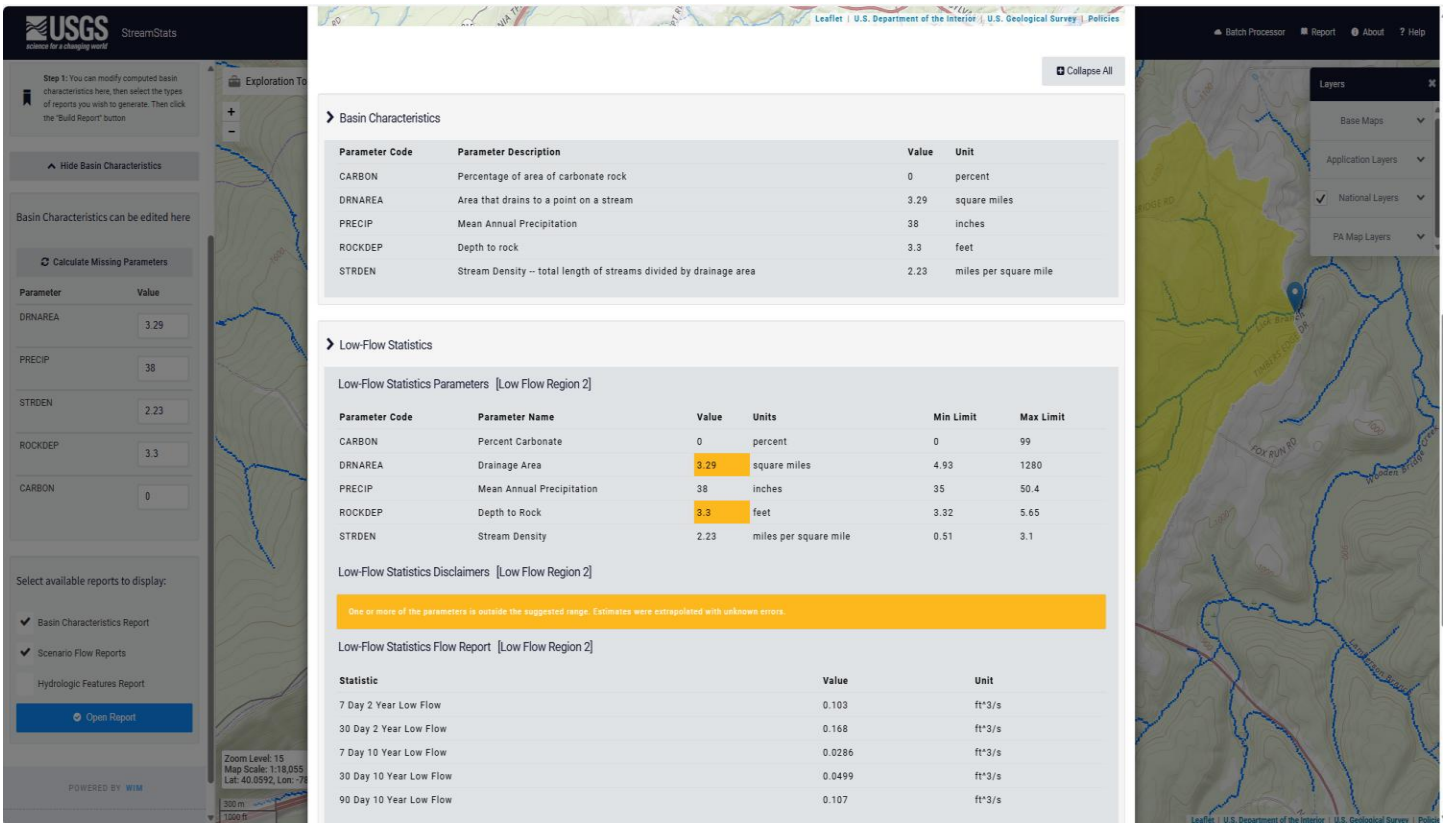
TRAIL
Fairview
BM 1214
BM 1438
BM 966
1178
esri


USGS StreamStats
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 | 0.84 | square miles
PRECIP | Mean Annual Precipitation | 39 | inches
ROCKDEP | Depth to rock | 4.3 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 1.21 | 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 | 0.84 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 39 | inches | 35 | 50.4
ROCKDEP | Depth to Rock | 4.3 | feet | 3.32 | 5.65
STRDEN | Stream Density | 1.21 | miles per square mile | 0.51 | 3.1
Low-Flow Statistics Disclaimers [Low Flow Region 2]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 2]
Statistic | Value | Unit
7 Day 2 Year Low Flow | 0.0722 | ft^3/s
30 Day 2 Year Low Flow | 0.104 | ft^3/s
7 Day 10 Year Low Flow | 0.0276 | ft^3/s
30 Day 10 Year Low Flow | 0.0402 | ft^3/s
90 Day 10 Year Low Flow | 0.0738 | ft^3/s
Hide Basin Characteristics
Basin Characteristics can be edited here
Calculate Missing Parameters
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers


USGS StreamStats
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
Hide Basin Characteristics
Basin Characteristics can be edited here
Calculate Missing Parameters
Parameter
Value
DRNAREA
3.29
PRECIP
38
STRDEN
2.23
ROCKDEP
3.3
CARBON
0
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
POWERED BY WIM
Leaflet | U.S. Department of the Interior | U.S. Geological Survey | Policies
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
3.29
square miles
PRECIP
Mean Annual Precipitation
38
inches
ROCKDEP
Depth to rock
3.3
feet
STRDEN
Stream Density -- total length of streams divided by drainage area
2.23
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
3.29
square miles
4.93
1280
PRECIP
Mean Annual Precipitation
38
inches
35
50.4
ROCKDEP
Depth to Rock
3.3
feet
3.32
5.65
STRDEN
Stream Density
2.23
miles per square mile
0.51
3.1
Low-Flow Statistics Disclaimers [Low Flow Region 2]
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.
Low-Flow Statistics Flow Report [Low Flow Region 2]
Statistic
Value
Unit
7 Day 2 Year Low Flow
0.103
ft^3/s
30 Day 2 Year Low Flow
0.168
ft^3/s
7 Day 10 Year Low Flow
0.0286
ft^3/s
30 Day 10 Year Low Flow
0.0499
ft^3/s
90 Day 10 Year Low Flow
0.107
ft^3/s
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
FOX RUN RD

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: