Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0029572**
Facility Type	**Non-Municipal**	APS ID	**985460**
Major / Minor	**Minor**	Authorization ID	**1490817**

Applicant and Facility Information

Applicant Name	**Paramount Sr Living At Fayetteville LLC**	Facility Name	**Paramount Sr Living At Fayetteville Facility**
Applicant Address	6375 Chambersburg Road	Facility Address	6375 Chambersburg Road
	Fayetteville, PA 17222-8350		Fayetteville, PA 17222-8350
Applicant Contact	Ron Cooper	Facility Contact	Ronald Cooper
Applicant Phone	(717) 357-1072	Facility Phone	(717) 357-1072
Client ID	341584	Site ID	443578
Ch 94 Load Status	Not Overloaded	Municipality	Franklin Township
Connection Status		County	Adams
Date Application Received	July 1, 2024	EPA Waived?	Yes
Date Application Accepted	July 3, 2024	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

KIP Technology on behalf of the Paramount Senior Living at Fayetteville, LLC. (Authority/Permittee), applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. The permit was reissued on April 15, 2020, and became effective on May 1, 2020. The permit expires on April 30, 2025.

The discharge flow is 0.05 MGD. The permit authorized discharge of treated sewage from the existing wastewater treatment plant (WWTP) located in Franklin Township, Adams County to Clear Run to Conococheague Creek.

WQM permit No. 0190403 was originally issued on November 22, 1990, and amendment transfer issued on July 24, 2001 (0190403 01-1) from Piney Mountain Home to Village of Laurel Run. WQM permit No. 0190403 T-2 ownership transfer was issued on 4/15/2020.

Sludge use and disposal description and location(s): N/A because sludge is hauled by Septic 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	February 21, 2025
X		/s/ Daniel W. Martin, P.E. / Environmental Engineer Manager	March 7, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.05
Latitude	39º 54' 1.19"	Longitude	-77º 26' 35.00"
Quad Name	Caledonia Park	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Clear Run (HQ-CWF)	Stream Code	60253
NHD Com ID	49479572	RMI	0.57 mile
Drainage Area	1.38 mi.^{2}	Yield (cfs/mi^2)	See comments below
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)		Slope (ft/ft)	
Watershed No.	13-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	City of Brunswick, MD		
PWS Waters	Potomac River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 65.0 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to Clear Run at RMI 0.57 mile. A drainage area upstream of the discharge is estimated to be 1.38 sq.mi, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
According to StreamStats, the gage station on Conococheague Creek has a Q_{7-10} of 0.69 cfs and a drainage area of 5.0 mi.^{2}, which is near Fayetteville, PA. The Q_{7-10} of discharge was calculated as follows:

$$\text{Low Flow Yield} = Q_{7\text{-}10gage} / \text{Drainage Area}_{gage} = 0.69 \text{ cfs} / 5.0 \text{ mi.}^2 = 0.14 \text{ cfs/mi.}^2$$
$$Q_{7\text{-}10discharge} = 0.14 \text{ cfs/mi.}^2 * \text{Drainage Area}_{discharge} = 0.14 \text{ cfs/mi.}^2 * 1.38 \text{ mi.}^2 = 0.19 \text{ cfs}$$
$$Q_{30\text{-}10} = 1.36 * Q_{7\text{-}10discharge} = 1.36 * 0.19 \text{ cfs} = 0.26 \text{ cfs}$$
$$Q_{1\text{-}10} = 0.64 * Q_{7\text{-}10discharge} = 0.64 * 0.19 \text{ cfs} = 0.12 \text{ cfs}$$

Conococheaque Creek
25 Pa Code 93.9z classifies Clear Run to Carbaugh Run to Rocky Mountain Creek to Conococheaque Creek as High-Quality Cold-Water Fishes (HQ-CWF) surface water. Based on the 2024 Integrated Report, Clear Run, 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 Intake
The nearest downstream public water supply intake is the City of Brunswick in Maryland on the Potomac River, located approximately 65 miles from the discharge. Based on the discharge from the discharge point, the discharge is not expected to impact water supply standards.

Treatment Facility Summary				
Treatment Facility Name: Paramount Senior Living At Fayettsville STP				
WQM Permit No.	**Issuance Date**			
0190403	10/22/1990			
0190403 01-1	7/24/2001			
0190403 T-1	4/15/2020			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Extended Aeration With Solids Removal	Chlorine With Dechlorination	0.05
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.05		Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance:

Other Comments:

The WWTP train is as follows:

Comminutor/Bar Screen (1) ⇒ Primary/Secondary EQ Tanks (2) ⇒ Aeration Tanks (5) ⇒ Settling Tanks (2) ⇒ Sludge Holding Tank (1) ⇒ Sand Filters (4) ⇒ Chlorine Contact Tank (1) ⇒ Discharge (outfall)

The system incorporates chemical additions of alum for settling, lime to control pH, sodium hypochlorite for disinfection, and sodium sulfite for de-chlorination. Sludge is hauled to Chambersburg STP.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months are summarized in the next page.
Summary of Inspections:	3/9/2022: Mr. Bettinger, DEP WQS, conducted a compliance evaluation inspection. The field test results were within the permit limits. *Recommendations*: 1. Include date of most recent generator service on the generator's service sticker. 2. Perform pH and D.O. process control analysis to establish trends, baselines, and ensure optimized treatment performance. 3. Include sludge biosolids production/disposal form with each monthly DMR submission. 4. Provide notification via phone call when the facility's filter units are returned to service.
Other Comments:	There are currently no open violations associated with the permittee or the facility.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from January 1, 2024 to December 31, 2024)

Parameter	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24
Flow (MGD) Average Monthly	0.008	0.010	0.008	0.009	0.011	0.011	0.009	0.01	0.014	0.012	0.01	0.013
Flow (MGD) Daily Maximum	0.025	0.017	0.027	0.014	0.031	0.033	0.018	0.024	0.024	0.026	0.018	0.042
pH (S.U.) Daily Minimum	7.4	7.3	7.0	7.4	7.1	7.2	6.9	7.2	7.2	7.5	7.4	7.4
pH (S.U.) Instantaneous Maximum	8.0	7.8	8.1	7.9	7.8	8.0	7.4	7.9	7.9	8.2	7.8	7.9
DO (mg/L) Daily Minimum	9.8	8.2	7.3	6.3	6.3	6.0	6.3	6.7	7.0	8.1	8.0	8.3
TRC (mg/L) Average Monthly	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TRC (mg/L) Instantaneous Maximum	0.11	< 0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.12	0.13	< 0.10	0.11
CBOD5 (mg/L) Average Monthly	< 3.0	< 3.0	< 4	< 2.0	< 2.0	< 3.0	3.0	< 3.0	< 2	< 2.0	4.0	5.0
CBOD5 (mg/L) Instantaneous Maximum	2.6	2.8	6.1	< 2.4	< 2.4	3.1	3.0	2.8	< 2.4	< 2.4	5.7	5.5
TSS (mg/L) Average Monthly	2.0	1.0	1.0	2.0	2.0	2.0	2.0	3.0	3.0	1.0	3.0	5.0
TSS (mg/L) Instantaneous Maximum	2.0	1.0	1.0	2.0	2.0	2.0	2.0	4.0	3.0	1.0	3.0	7.0
Fecal Coliform (No./100 ml) Geometric Mean	3.0	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 1.0	< 1	< 1.0	1.0	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	7.0	1.0	< 1.0	< 1.0	< 1.0	9.0	< 1.0	< 1.0	< 1	< 1.0	1.0	< 1.0
Ammonia (mg/L) Average Monthly	< 1.2	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Ammonia (mg/L) Instantaneous Maximum	2.3	< 0.10	< 0.10	0.17	< 0.10	< 0.10	< 0.10	< 0.10	0.10	< 0.10	< 0.10	< 0.10

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.)	XXX	XXX	6.0 Daily Min	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.14	XXX	0.46	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
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	9.0	XXX	18.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	Grab
Total Nitrogen	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	Grab

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.05
Latitude 39º 54' 1.19" **Longitude** -77º 26' 35.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

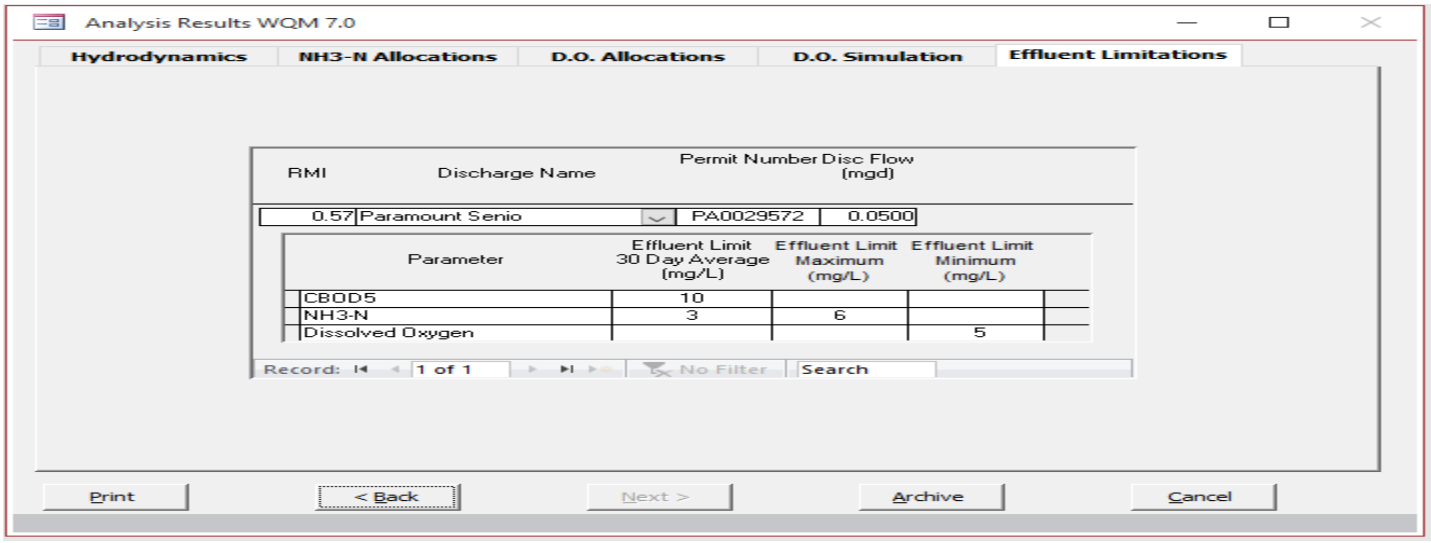
Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.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

Comments:

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 = 25°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 0.05 MGD, limits of 3.0 mg/L NH_3-N as a monthly average and 6.0 mg/L NH_3-N instantaneous maximum are necessary to protect the aquatic life from toxicity effects for summer, to calculate winter limits based on a typical multiplier of 3 used by DEP. The current NH_3-N limits of 3.0 mg/L monthly average and 6.0 mg/L IMAX for summer will remain in the proposed permit due to the stream classification as a High-Quality Cold-Water Fishery. Additionally, the facility's recent DMRs indicate that the facility has been consistently achieving concentrations under these limits.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)
The attached computer printout of the WQM 7.0 stream model indicates that a monthly average limit of 10.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. The existing limits of 10.0 mg/L monthly average and 20.0 mg/L instantaneous maximum are same and will remain in the proposed permit due to the stream classification as a High-Quality Cold-Water Fishery. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits.

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.

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 (average monthly) 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 (average monthly) and an instantaneous maximum not greater than 10,000/100 ml, respectively.

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/quarter will be included in the permit to be consistent with the recommendation from this SOP.

Total Suspended Solids (TSS)
The more stringent existing limits of 10.0 mg/L average monthly and 20.0 mg/L instantaneous maximum will remain in the proposed permit due to the stream classification as a High-Quality Cold-Water Fishery. Past DMRs and inspection reports show that the facility has been consistently achieving these limits.

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

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. This plant, classified as a phase 5, will be required to monitor and report TP and TN once a year. Therefore, a 1/year "Monitor & Report" for TN, and TP requirements will be added to the proposed permit.

Total Residual Chlorine (TRC)
Based on the attached TRC Excel Spreadsheet calculator, which uses the equations and calculations from the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (ID No. 391-2000-015), the facility's discharge must meet a monthly average limit of 0.36 mg/L and an instantaneous maximum limit of 1.20 mg/L. The more stringent existing limits of 0.14 mg/L monthly average and 0.46 mg/L instantaneous maximum will remain in the proposed permit due to the stream classification as a High-Quality Cold-Water Fishery. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.19	= Q stream (cfs)	0.5	= CV Daily
0.05	= 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 =	0.803	1.3.2.iii	WLA cfc =	0.775
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.299	5.1d	LTA_cfc =	0.451

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.368	AFC
		INST MAX LIMIT (mg/l) =	1.204	

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)**

Additional Consideration

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

Monitoring Frequency and Sample Type
The facility currently is required to collect daily effluent grab samples for DO, TRC, and pH; bi-monthly effluent grab samples of $CBOD_5$, TSS, ammonia-nitrogen, and fecal coliform; annually effluent grab samples of TP; and annually effluent calculation samples of TN. Based on the best professional judgement of the author, the existing monitoring frequencies are sufficient and necessary. Therefore, the renewal permit monitoring frequencies will remain the same as those specified in the existing permit.

Antidegradation (93.4)
Since Clear Run is classified as a HQ surface water, the effluent limits must be developed in a way to minimize degradation and to help maintain existing water quality of the receiving stream. The existing effluent limitations were developed based on the Department's Special Protection Waters Implementation Guidance, *Water Quality Antidegradation Implementation Guidance (391-0300-002, Appendix B-Antidegradation Best Available Combination of Technologies (ABACT) for Wastewater Discharges)*. The new effluent limitations will also be based on this guidance if these limits are determined to be most stringent. See Effluent Limitation for more information.

303d Listed Streams
This discharge is not located on a 303d listed stream segment.

Class A Wild Trout Fisheries

The secondary receiving water for this discharge in Carbaugh Run. Carbaugh Run is a Class A Wild Trout Fishery. The High-Quality limits imposed in this permit are also protective in Carbaugh Run.

Anti-Backsliding

Unless stated otherwise in this fact sheet, all permit requirements proposed in this fact sheet are at least as stringent as existing permit requirements in accordance with 40 CFR §122.44(l)(1).

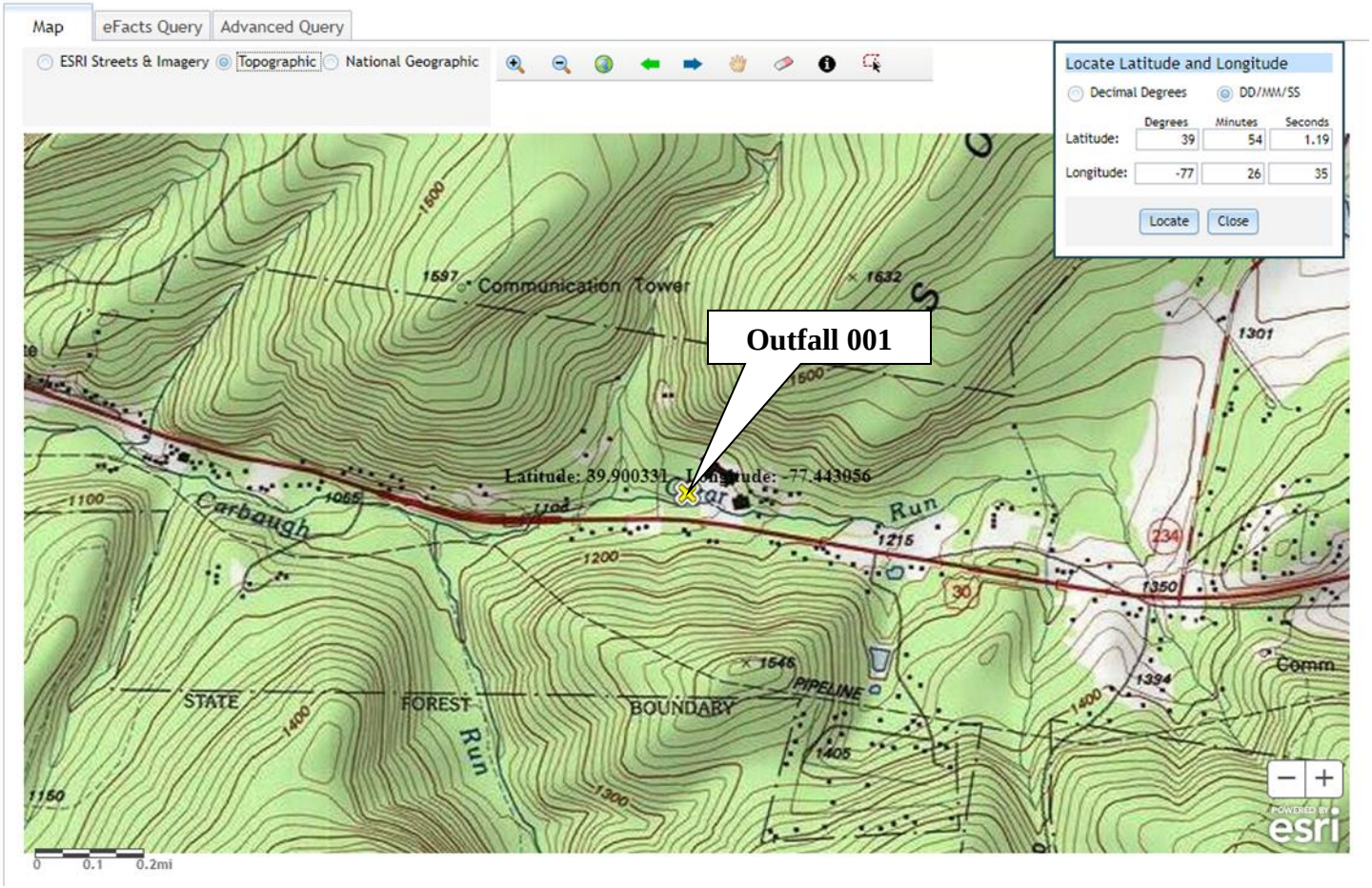
*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	25°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	20°C	(Default)
*	Background NH_3-N	=	0	(Default)

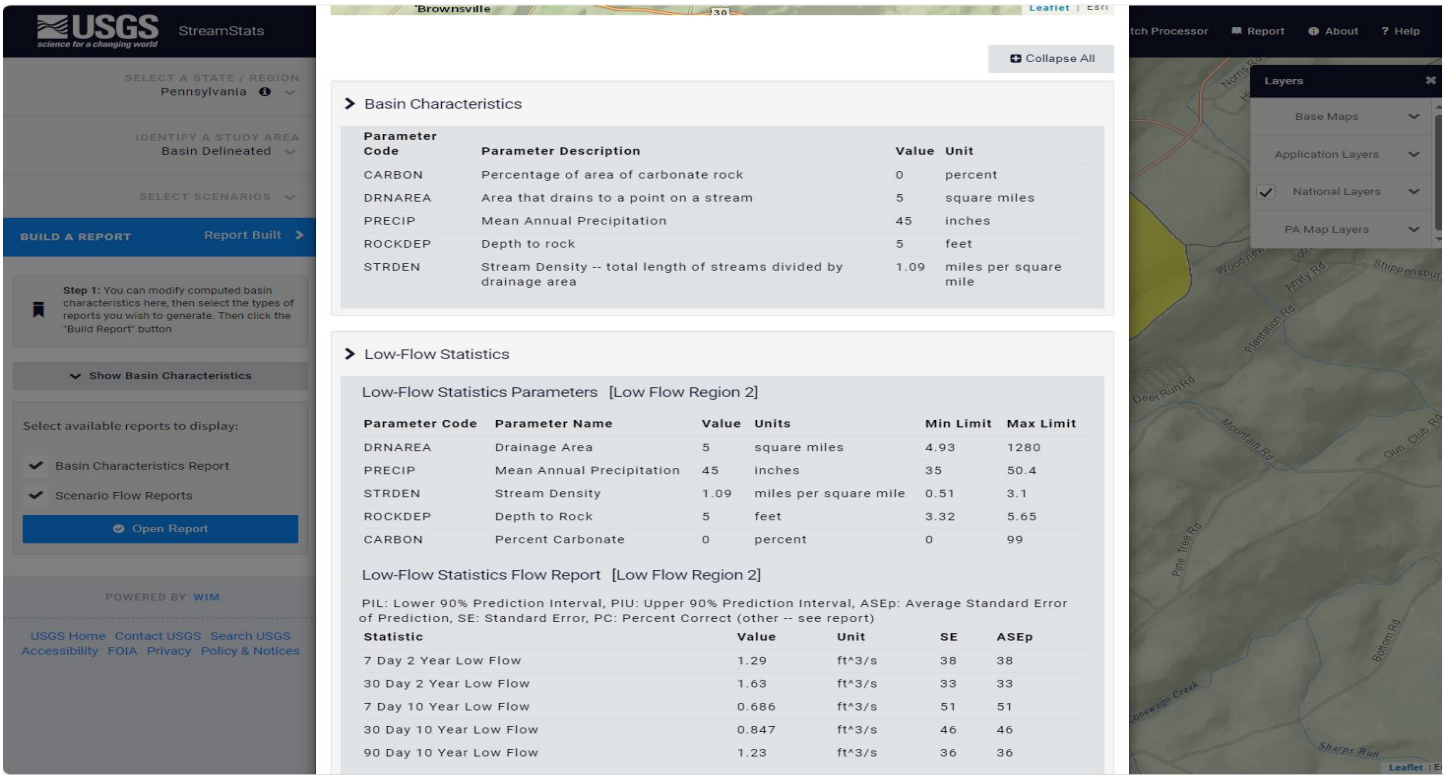
Node 1: Outfall 001 (60253)

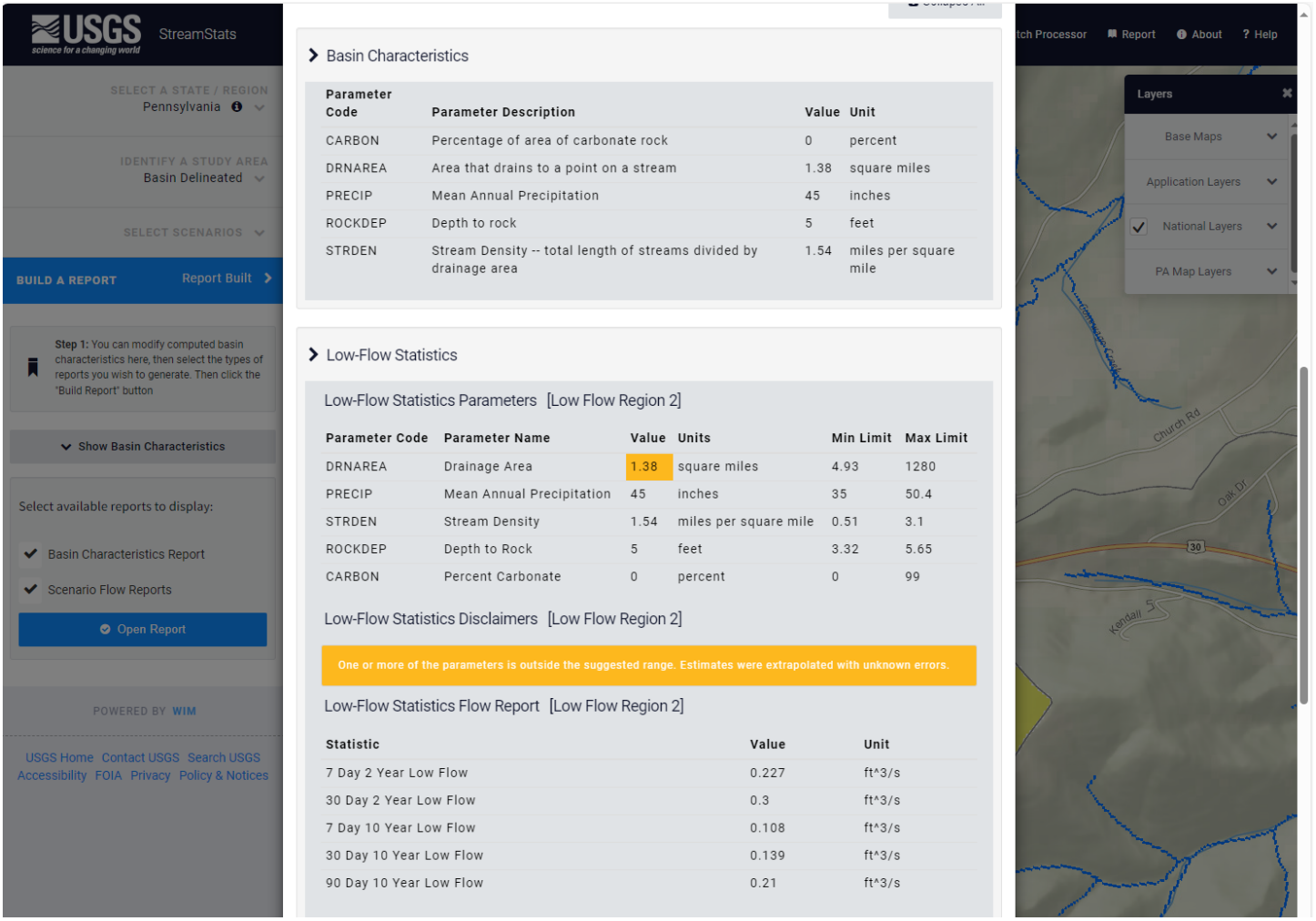
Elevation:	1180 ft (USGS National Map Viewer)
Drainage Area:	1.38 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	0.57 mile (PA DEP eMapPA)
Low Flow Yield:	0.14 $cfs/mi.^2$
Discharge Flow:	0.05 MGD (NPDES PA0029572 Application)

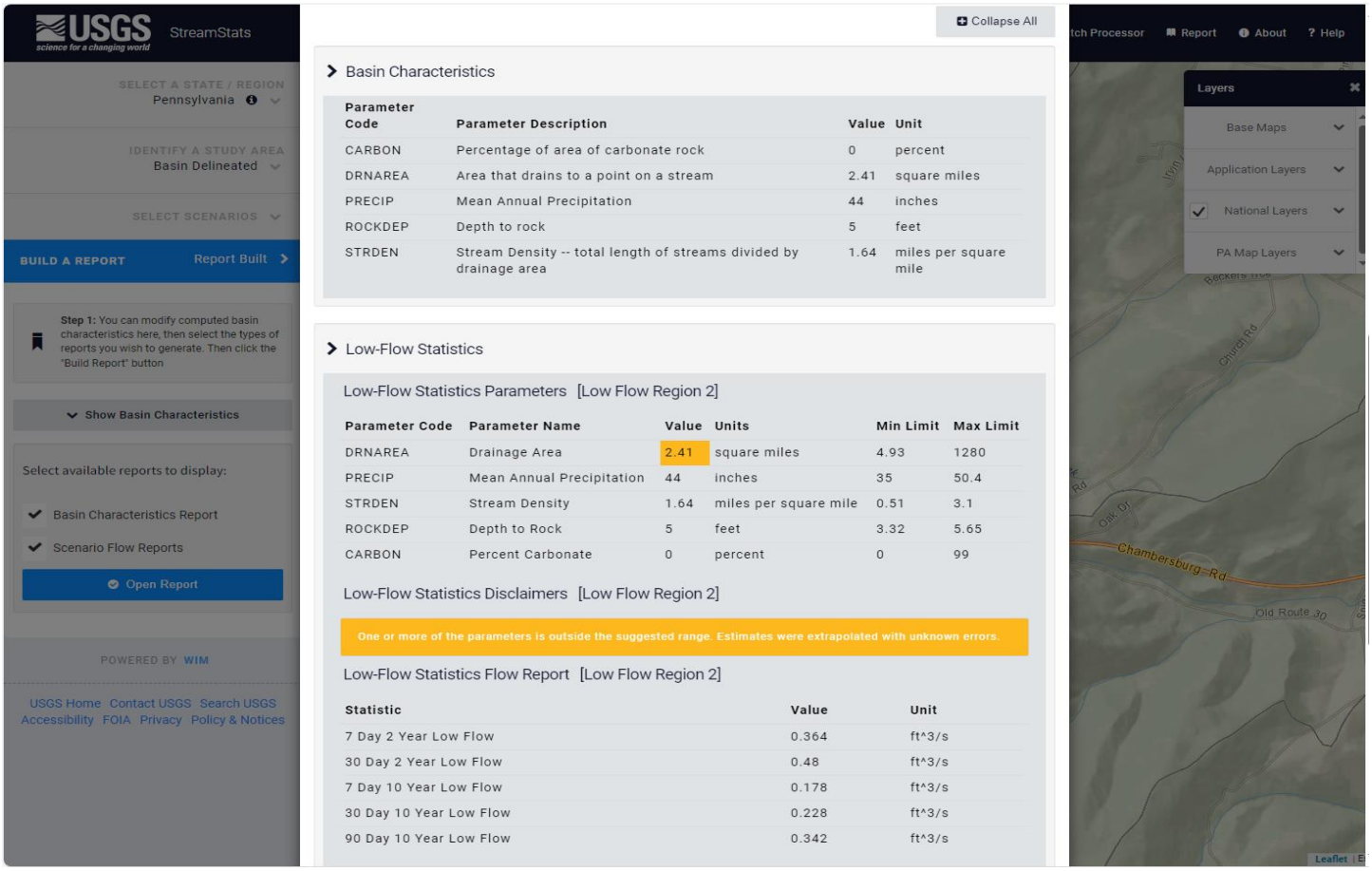
Node 2: On Clear Run just before Trib. 60254

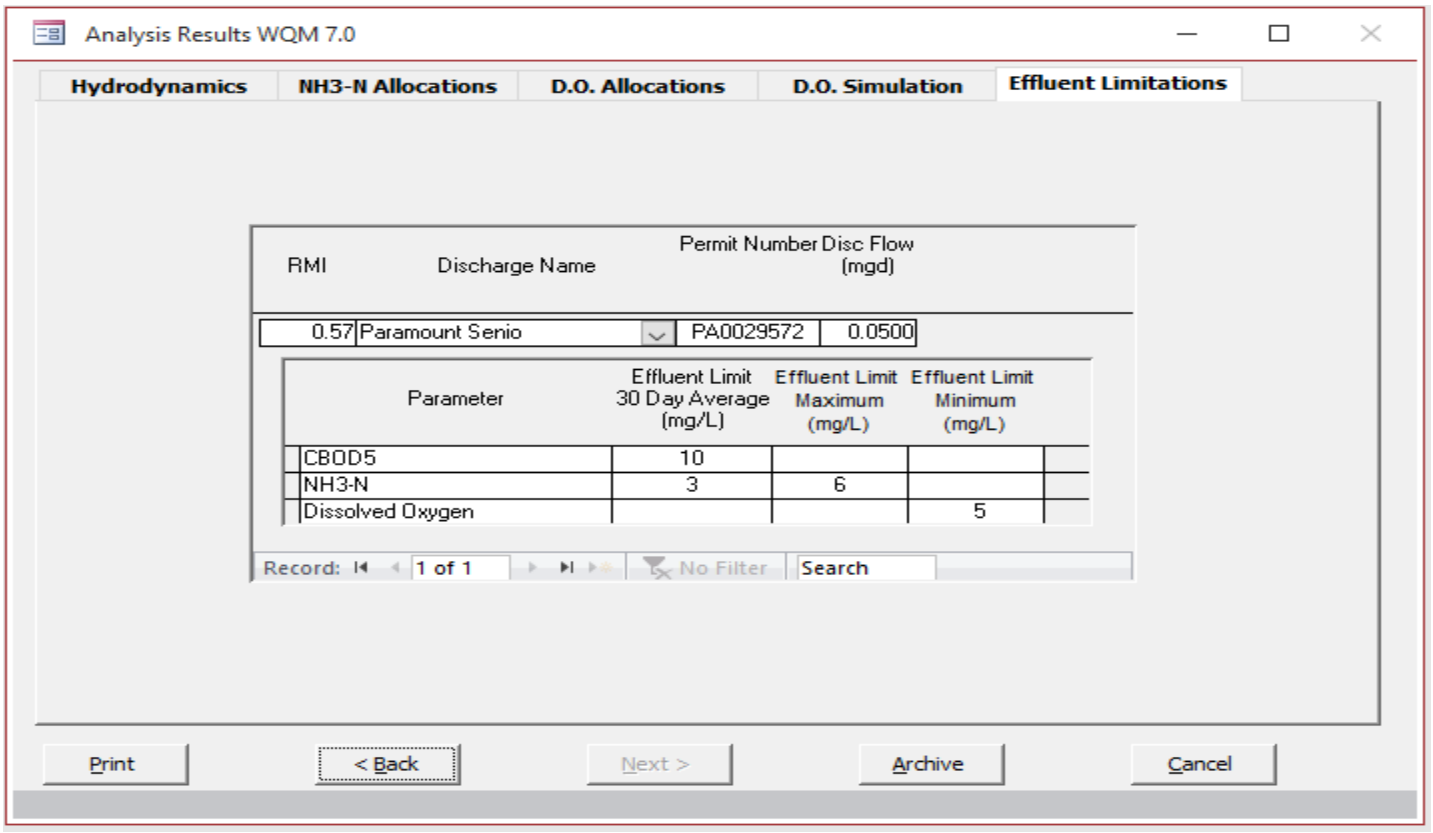
Elevation:	1150 ft (USGS National Map Viewer)
Drainage Area:	2.41 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	0.34 mile (PA DEP eMapPA)
Low Flow Yield:	0.14 $cfs/mi.^2$
Discharge Flow:	0.000 MGD




USGS
science for a changing world
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
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
square miles
PRECIP
Mean Annual Precipitation
45
inches
ROCKDEP
Depth to rock
5
feet
STRDEN
Stream Density -- total length of streams divided by drainage area
1.09
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
5
square miles
4.93
1280
PRECIP
Mean Annual Precipitation
45
inches
35
50.4
STRDEN
Stream Density
1.09
miles per square mile
0.51
3.1
ROCKDEP
Depth to Rock
5
feet
3.32
5.65
CARBON
Percent Carbonate
0
percent
0
99
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 (other -- see report)
Statistic
Value
Unit
SE
ASEp
7 Day 2 Year Low Flow
1.29
ft^3/s
38
38
30 Day 2 Year Low Flow
1.63
ft^3/s
33
33
7 Day 10 Year Low Flow
0.686
ft^3/s
51
51
30 Day 10 Year Low Flow
0.847
ft^3/s
46
46
90 Day 10 Year Low Flow
1.23
ft^3/s
36
36
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Leaflet


USGS
science for a changing world
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
USGS Home Contact USGS Search USGS
Accessibility FOIA Privacy Policy & Notices
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
1.38
square miles
PRECIP
Mean Annual Precipitation
45
inches
ROCKDEP
Depth to rock
5
feet
STRDEN
Stream Density -- total length of streams divided by drainage area
1.54
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
1.38
square miles
4.93
1280
PRECIP
Mean Annual Precipitation
45
inches
35
50.4
STRDEN
Stream Density
1.54
miles per square mile
0.51
3.1
ROCKDEP
Depth to Rock
5
feet
3.32
5.65
CARBON
Percent Carbonate
0
percent
0
99
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
0.227
ft^3/s
30 Day 2 Year Low Flow
0.3
ft^3/s
7 Day 10 Year Low Flow
0.108
ft^3/s
30 Day 10 Year Low Flow
0.139
ft^3/s
90 Day 10 Year Low Flow
0.21
ft^3/s
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Church Rd
Oak Dr
30
Kendall


USGS
science for a changing world
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
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
2.41
square miles
PRECIP
Mean Annual Precipitation
44
inches
ROCKDEP
Depth to rock
5
feet
STRDEN
Stream Density -- total length of streams divided by drainage area
1.64
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
2.41
square miles
4.93
1280
PRECIP
Mean Annual Precipitation
44
inches
35
50.4
STRDEN
Stream Density
1.64
miles per square mile
0.51
3.1
ROCKDEP
Depth to Rock
5
feet
3.32
5.65
CARBON
Percent Carbonate
0
percent
0
99
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
0.364
ft^3/s
30 Day 2 Year Low Flow
0.48
ft^3/s
7 Day 10 Year Low Flow
0.178
ft^3/s
30 Day 10 Year Low Flow
0.228
ft^3/s
90 Day 10 Year Low Flow
0.342
ft^3/s
Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
Church Rd
Chambersburg Rd
Old Route 30
Leaflet


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)
0.57
Paramount Senio
PA0029572
0.0500
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
10
NH3-N
3
6
Dissolved Oxygen
5
Record: 1 of 1
No Filter
Search
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< Back
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Archive
Cancel

rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
13C	60253	CLEAR RUN

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)
0.570	Paramount Sr.	PA0029572	0.050	CBOD5	10		
				NH3-N	3	6	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
13C	60253	CLEAR RUN

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
0.570	Paramount Sr.	14.29	6	14.29	6	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
0.570	Paramount Sr.	1.75	3	1.75	3	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
0.57	Paramount Sr.	10	10	3	3	5	5	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
13C	60253	CLEAR RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.570	0.050	21.429	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
6.047	0.416	14.527	0.107
Reach CBOD5 (mg/L)	Reach Kc (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
5.29	0.965	0.86	0.781
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.316	25.484	Owens	5
Reach Travel Time (days)			
0.131			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.013	4.23	0.85	7.66
0.026	4.17	0.84	7.91
0.039	4.12	0.83	8.03
0.052	4.06	0.82	8.03
0.065	4.01	0.81	8.03
0.078	3.95	0.81	8.03
0.092	3.90	0.80	8.03
0.105	3.85	0.79	8.03
0.118	3.80	0.78	8.03
0.131	3.75	0.77	8.03

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rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
W.L.A. 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: 13C | Stream Code: 60253 | Stream Name: CLEAR RUN

RMI	Stream Flow (cfs)	PWS Wth (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
0.570	0.19	0.00	0.19	.0773	0.02470	.416	6.05	14.53	0.11	0.101	25.43	7.00
Q1-10 Flow												
0.570	0.12	0.00	0.12	.0773	0.02470	NA	NA	NA	0.09	0.154	25.92	7.00
Q30-10 Flow												
0.570	0.26	0.00	0.26	.0773	0.02470	NA	NA	NA	0.12	0.115	25.14	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
13C	60253	CLEAR RUN	0.570	1160.00	1.38	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	W/D Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.140	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
Paramount Sr.	PA0029572	0.0500	0.0500	0.0500	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	10.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	3.00	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
13C	60253	CLEAR RUN	0.340	1150.00	2.41	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	W/D Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.140	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
Paramount Sr.	PA0029572	0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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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	0.14	XXX	0.46	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
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/quarter	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	Grab
Total Nitrogen	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
Total Phosphorus	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	Grab

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, 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: