Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0081647**
Facility Type	**Municipal**	APS ID	**310016**
Major / Minor	**Minor**	Authorization ID	**1510327**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**White Run Region Municipal Authority**	Facility Name	**White Run STP**
Applicant Address	2001 Baltimore Pike	Facility Address	2001 Baltimore Pike
	Gettysburg, PA 17325-7015		Gettysburg, PA 17325-7015
Applicant Contact	Donald Hubbard	Facility Contact	Richard Reinburg
Applicant Phone	(717) 334-7476	Facility Phone	(717) 334-9137
Client ID	77706	Site ID	253436
Ch 94 Load Status	Not Overloaded	Municipality	Mount Joy Township
Connection Status	No Limitations	County	Adams
Date Application Received	December 20, 2024	EPA Waived?	Yes
Date Application Accepted	December 23, 2024	If No, Reason	

Purpose of Application: NPDES permit renewal.

Summary of Review

Keller Engineers, on behalf of the White Run Regional Municipal Authority (Authority/Permittee), applied to the Pennsylvania Department of Environmental Protection (DEP) for issuance of the NPDES permit. The permit was reissued on February 24, 2020, and became effective on March 1, 2020. The permit expires on August 31, 2025.

The WWTP currently has an average annual design flow of 0.330 MGD, a hydraulic capacity of 0.390 MGD, and an organic design capacity of 740 lbs BOD/day. The collection system has sewers from Mt. Joy Township (55%), Straban Township (21%), and Mt. Pleasant Township (24%).

WQM Part II No. 0100407 was issued 12/26/2000, and 0100407 A-1 amendment was issued 6/25/2024 to modification.

Sludge use and disposal description and location(s): N/A because sludge is hauled 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	July 25, 2025
X		Daniel W. Martin Daniel W. Martin, P.E. / Environmental Engineer Manager	August 26, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.33
Latitude	39º 47' 22.01"	Longitude	-77º 11' 56.56"
Quad Name	Gettysburg	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	White Run (WWF)	Stream Code	59099
NHD Com ID	53320632	RMI	0.52
Drainage Area	12.8 mi.^{2}	Yield (cfs/mi^2)	0.03
Q_{7-10} Flow (cfs)	0.38	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	409.18	Slope (ft/ft)	
Watershed No.	13-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Flow Regime Modification, Nutrients, Siltation		
Source(s) of Impairment	Dam OR Impoundment, Rural (Residential Areas),		
TMDL Status	Name		
Nearest Downstream Public Water Supply Intake	City of Frederick, MD		
PWS Waters	Monocacy River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 38 miles

Changes Since Last Permit Issuance:

Drainage Area
The discharge is to Little Juniata River at RMI 0.52 mile. A drainage area upstream of the discharge is estimated to be 12.8 mi.^{2}, according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Slow Flow
According to StreamStats, the point of first use has a Q_{7-10} of 0.38 cfs and a drainage area of 12.8 mi.^{2}, which results in a Q_{7-10} low flow yield of 0.030 cfs/mi.^{2}. This is a relatively low Q_{7-10}, but it is consistent with the known geologic features of the area. This information is used to obtain a chronic or 30-day (Q_{30-10}), and an acute or 1-day (Q_{1-10}) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

Q_{7-10} = 0.38 cfs
Low Flow Yield = 0.38 cfs / 12.8 mi.^{2} = 0.030 cfs/mi.^{2}
Q_{30-10} = 1.36 * 0.39 cfs = 0.53 cfs
Q_{1-10} = 0.64 * 0.39 cfs = 0.25 cfs

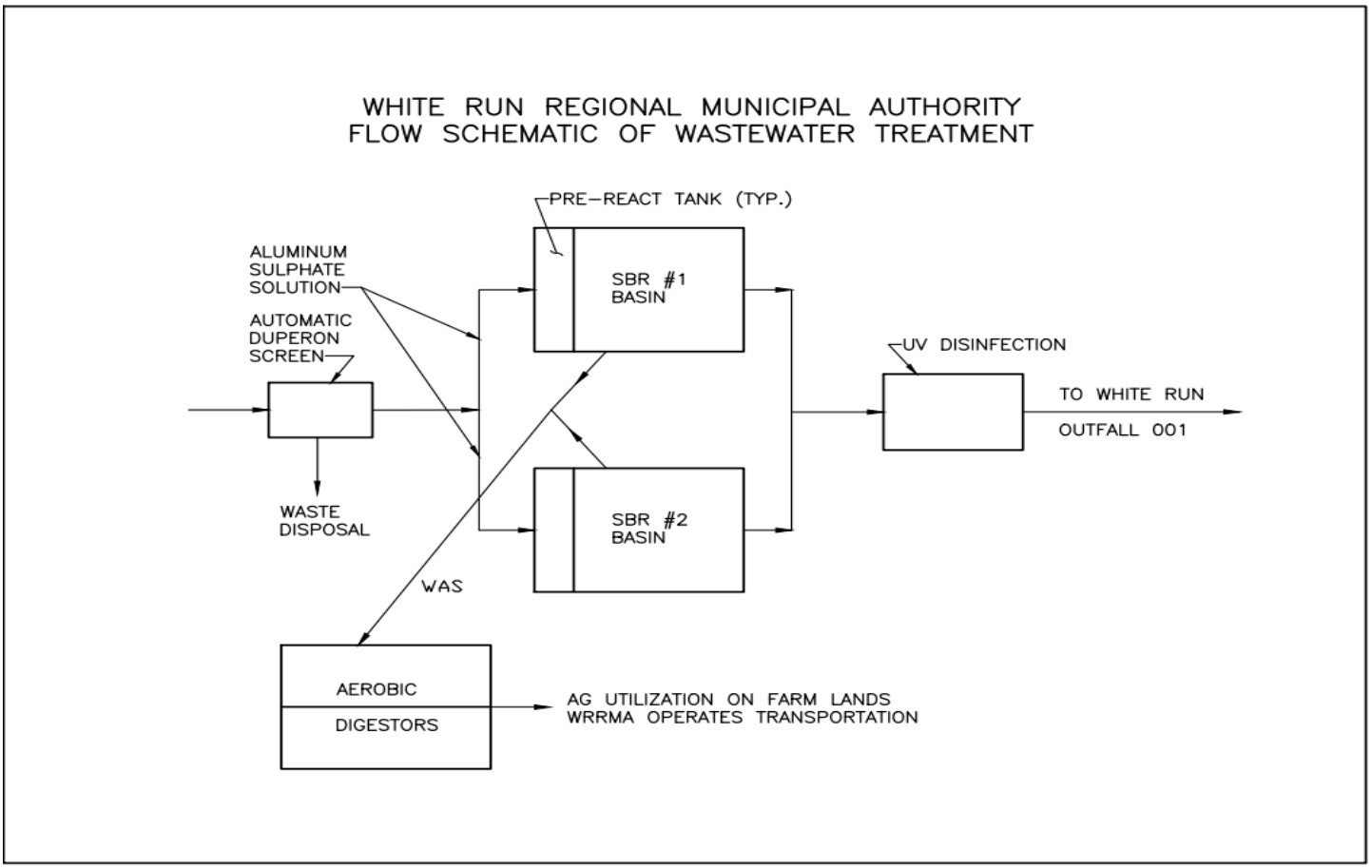
The resulting Q_{7-10} dilution ratio is: Q_{stream} / $Q_{discharge}$ = 0.38 cfs / [0.330 MGD * (1.547 cfs/MGD)] = 0.74:1

Public Water Supply
The nearest downstream public water supply intake is the City of Frederick, Maryland on the Monocacy River, approximately 38 miles downstream of this discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

Treatment Facility Summary				
Treatment Facility Name: White Run Regional STP				
WQM Permit No.	**Issuance Date**			
0100407	12/26/2000			
0100407 A-1	6/25/2024			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia And Phosphorus	Sequencing Batch Reactor	Ultraviolet	0.33
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.39	740	Not Overloaded	Aerobic Digestion	Land Application

Changes Since Last Permit Issuance:

Other Comments:



The WWTP train is as follows:

Mechanical Bar Screen (1) ⇒ Pre-React Chamber (2) ⇒ Sequencing Batch Reactor (2) ⇒ Ultraviolet Disinfection Unit (1) ⇒ Discharge

The system incorporates the addition of Aluminum Sulfate (for Coagulation and Phosphorus removal). Six aerated sludge digesters are on-site.

Residual solids are held in 2 aerobic digesters prior to liquid application on farm fields.

Biosolids:
The total sewage sludge/biosolids production within the facility for the previous year was 27.94 dry tons.

Industrial/Commercial Users:
The permit application indicated there are no commercial or industrial contributors to the treatment plant.

Compliance History	
Summary of DMRs:	DMRs reported last 12 months are summarized in the next pages.
Summary of Inspections:	1/16/2025: Mr. Hoy, DEP WQS, conducted a compliance elevation inspection. There were no violations noted during the inspection. There were recommendations 1. The NIST thermometers are replaced as soon as possible and the calibrated or replaced annually. 2. The Excel files of the influent supplemental report, the effluent supplemental report, the sewage sludge supplemental report, and the Annual Chesapeake Bay Spreadsheet (V2.2) are submitted to eDMR monthly. 3. Printing copies of the final DMR submitted to Greenport for on-site records retention. 4. Performing 3-point calibration for the pH meter. 7/25/2024: Mr. Hoy, DEP WQS, conducted a response to complaint of sewage odors inspection. There were no violations noted during the inspection.
Other Comments:	There are currently no open violations associated with the permittee or the facility.

Other Comments:

The table below summarizes the influent/effluent testing results submitted along with the application.

Influent Testing Results

Parameter	Min/Max Value	Average Value
BOD_5 (mg/L)	mg/L	mg/L
BOD_5 (lbs/day)	lbs/day	lbs/day
TSS (mg/L)	mg/L	mg/L
TSS (lbs/day)	lbs/day	lbs/day
TN (mg/L)	52 mg/L	52 mg/L
TN (lbs/day)	53.77 lbs/day	53.77 lbs/day
TP (mg/L)	5.5 mg/L	5.5 mg/L
TP (lbs/day)	5.69 lbs/day	5.69 lbs/day
NH_3-N (mg/L)	45 mg/L	45 mg/L
NH_3-N (lbs/day)	46.54 lbs/day	46.54 lbs/day
TDS (mg/L)	844 mg/L	844 mg/L
TDS (lbs/day)	872.8 lbs/day	872.8 lbs/day
TKN	52 mg/L	52 mg/L
NO_2-N + NO_3-N	0.8 mg/L	0.8 mg/L

Effluent Testing Results

Parameter	Min/Max Value	Average Value
pH (minimum)	6.6 S.U.	
pH (maximum)	7.6 S.U.	
D.O (minimum)	6.1/20.3 mg/L	7.56 mg/L
TRC	mg/L	mg/L
Fecal Coliform	1/613 No./100 mL	8.35 No./100 mL
$CBOD_5$	2.4/7.8 mg/L	2.6 mg/L
TSS	1/28 mg/L	4.8 mg/L
NH_3-N	0.1/0.79 mg/L	0.15 mg/L
TN	5.1/20.3 mg/L	10.9 mg/L
TP	0.5/2.5 mg/L	1.23 mg/L
Temp	No Data	No Data
TKN	0.5/2.7 mg/L	1.07 mg/L
NO_2-N + NO_3-N	4/16.4 mg/L	9.76 mg/L
TDS	794 mg/L	794 mg/L
Chloride	210 mg/L	210 mg/L
Bromide	<0.5 mg/L	<0.5 mg/L
Sulfate	100 mg/L	100 mg/L
Oil and Grease	5.0 mg/L	5.0 mg/L
Total Copper	0.006 mg/L	0.006 mg/L
Total Lead	< 0.001 mg/L	< 0.001 mg/L
Total Zinc	0.087 mg/L	0.087 mg/L

Compliance History

DMR Data for Outfall 001 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	0.274	0.194	0.158	0.180	0.147	0.180	0.147	0.160	0.155	0.188	0.164	0.164
Flow (MGD) Daily Maximum	0.431	0.292	0.208	0.296	0.212	0.313	0.184	0.219	0.197	0.529	0.21	0.202
pH (S.U.) Daily Minimum	6.5	6.5	6.3	6.3	6.8	6.4	6.8	6.7	6.8	6.7	6.8	6.7
pH (S.U.) Instantaneous Maximum	7.4	7.3	7.4	7.5	7.7	7.7	7.5	7.4	7.4	7.5	7.4	7.4
DO (mg/L) Daily Minimum	5.4	6.2	6.2	5.3	6.9	6.9	6.6	7.0	6.0	5.4	6.0	6.0
CBOD5 (lbs/day) Average Monthly	6.4	4.9	< 4.1	< 4.0	< 3.3	< 3.4	< 3.0	< 3.5	< 3.5	< 4.1	< 3.6	3.6
CBOD5 (lbs/day) Weekly Average	10	6	5	< 6	4	< 4	< 3	< 4	< 4	5	< 4	4
CBOD5 (mg/L) Average Monthly	< 2.9	< 2.5	< 3.0	< 2.4	< 2.6	< 2.40	< 2.4	< 2.40	< 2.4	< 2.50	< 2.4	< 2.4
CBOD5 (mg/L) Weekly Average	4.4	2.8	3.6	< 2.4	3.0	< 2.40	< 2.4	< 2.4	2.4	2.90	< 2.4	2.4
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	581	477	384	320	304	366	303	393	340	389	358	327
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	1053	585	405	378	323	569	369	447	392	464	440	374
BOD5 (mg/L) Raw Sewage Influent Average Monthly	257	255	270	201	233	258	245.75	292	231	240	238	217
TSS (lbs/day) Average Monthly	5.4	6.6	4.4	4.4	2.3	2.2	2.7	3.3	3	7.7	4.9	3.9
TSS (lbs/day) Raw Sewage Influent Average Monthly	400	485	336	336	213	201	224	337	224	225	230	171
TSS (lbs/day) Raw Sewage Influent Daily Maximum	475	583	380	380	437	351	279	414	254	314	348	263
TSS (lbs/day) Weekly Average	9	12	6	6	4	4	5	6	5	22	12	11

TSS (mg/L) Average Monthly	2.5	3.3	3.2	2.8	1.80	1.60	2.3	2.3	2.0	4.30	3.4	2.5
TSS (mg/L) Raw Sewage Influent Average Monthly	181	248	236	217	157	143	182.00	229	152	145	156	114
TSS (mg/L) Weekly Average	4.0	5.0	4.0	4.0	3.0	3.00	4.0	4.0	3.0	11.0	9	7
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2	< 4	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	4.0	2	2	5	< 1	2	1	2	3	5	80	1
UV Intensity (mW/cm²) Daily Minimum	100	100	100	100	100	100	100	100	100	100	100	100
UV Intensity (mW/cm²) Average Monthly	100	100	100	100	100	100	100	100	100	100	100	100
Nitrate-Nitrite (mg/L) Average Monthly	< 8.1	< 11.6	< 10.7	< 18.2	< 20.41	< 14.3	< 15.2	< 16.70	< 14.4	< 14.9	< 14.2	< 12.97
Nitrate-Nitrite (lbs) Total Monthly	551	703	< 460	< 847	< 823	< 628	< 562	< 762	< 636	730	< 658	< 594
Total Nitrogen (mg/L) Average Monthly	< 8.8	< 13.21	< 16.81	< 18.5	< 20.91	< 14.94	< 16.12	< 17.36	< 14.90	< 15.5	< 14.8	< 14.40
Total Nitrogen (lbs) Total Monthly	597	< 750	< 714	< 866	< 843	< 658	< 598	< 795	< 658	760	< 687	658
Total Nitrogen (lbs) Total Annual									< 8076			
Ammonia (lbs/day) Average Monthly	< 0.3	< 0.2	< 5.8	< 0.2	< 0.1	< 0.20	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.2
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 4.3	< 0.1	< 0.1	< 0.10	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Ammonia (lbs) Total Monthly	< 9.3	< 7.1	< 178.4	< 4.7	< 4.1	< 5	< 3.7	< 4.6	< 4.4	< 5.1	< 4.6	5
Ammonia (lbs) Total Annual									< 91			
TKN (mg/L) Average Monthly	< 0.7	< 0.84	< 6.1	< 0.5	< 0.5	< 0.68	0.97	< 0.71	< 0.50	< 0.6	< 0.6	< 1.4
TKN (lbs) Total Monthly	< 46	< 48	< 254	< 23	< 20	< 30	36	< 32	< 22	< 29	< 29	64
Total Phosphorus (lbs/day) Average Monthly	1.9	1.7	0.5	0.7	0.7	0.9	0.9	1.2	1.5	1.3	3.6	2.1
Total Phosphorus (mg/L) Average Monthly	0.9	0.9	0.4	0.4	0.5	0.60	0.8	0.80	1.0	0.8	2.4	1.5

Total Phosphorus (lbs) Total Monthly	60	50	16.3	19.5	21.3	27	28	36.9	44	40.2	112	64
Total Phosphorus (lbs) Total Annual									643			

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	Daily Maximum	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	Report	XXX	XXX	1/day	Recorded
$CBOD_5$	68.0	110.0 Wkly Avg	XXX	25.0	40.0	50.0	1/week	8-Hr Composite
TSS	82.0	123.0 Wkly Avg	XXX	30.0	45.0	60.0	1/week	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
Ammonia May 1 - Oct 31	6.9	XXX	XXX	2.5	XXX	5.0	1/week	8-Hr Composite
Ammonia Nov 1 - Apr 30	20.0	XXX	XXX	7.5	XXX	15.0	1/week	8-Hr Composite
Total Phosphorus	5.5	XXX	XXX	2.0	XXX	4.0	1/week	8-Hr Composite

Existing Effluent Limitations and Monitoring Requirements

Outfall 001, Chesapeake Bay

Parameter [1]	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)			Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia---N	Report	Report	XXX	Report	XXX	1/week	8-Hr Composite
Kjeldahl---N	Report	XXX	XXX	Report	XXX	1/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	1/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	1/week	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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	Report	XXX	XXX	1/day	Recorded
CBOD5	68	110	XXX	25	40	50	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS	82	123	XXX	30	45	60	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
Ammonia Nov 1 - Apr 30	20	XXX	XXX	7.5	XXX	15	1/week	8-Hr Composite
Ammonia May 1 - Oct 31	6.9	XXX	XXX	2.5	XXX	5	1/week	8-Hr Composite
Total Phosphorus	5.5	XXX	XXX	2.0	XXX	4	1/week	8-Hr Composite

Compliance Sampling Location:

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (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
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite

Compliance Sampling Location:

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.33
Latitude 39º 47' 22.01" **Longitude** -77º 11' 56.56"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

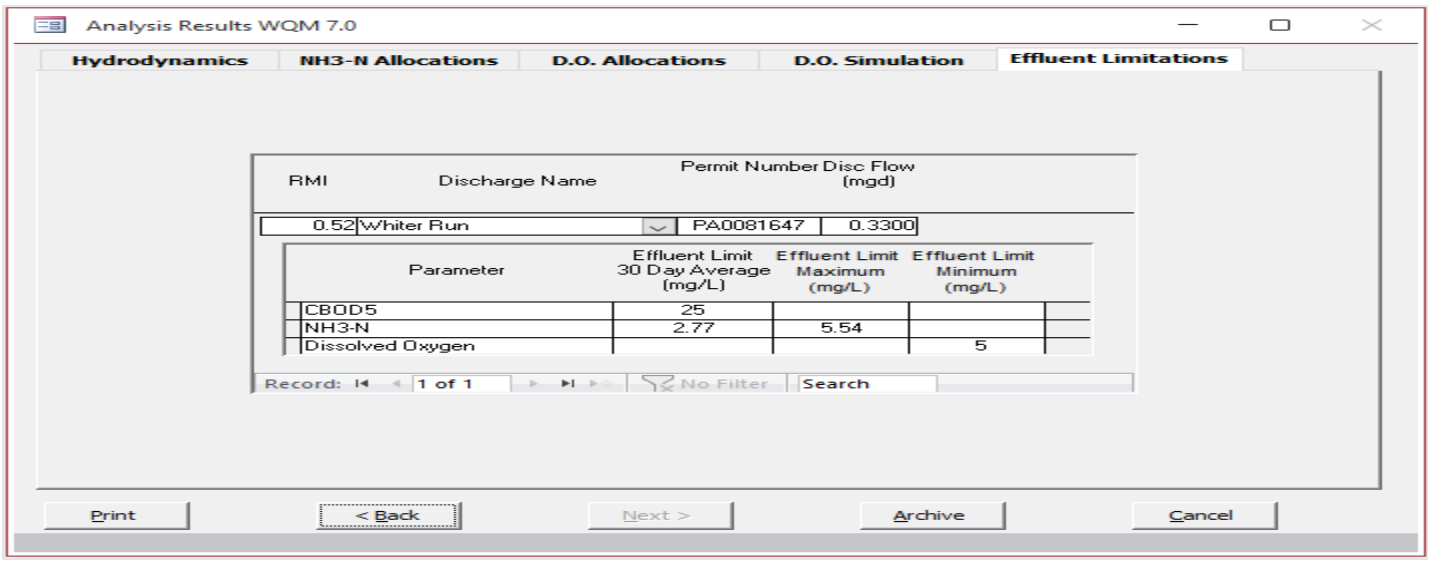
Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	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_3N calculations are based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached WQM 7.0 computer model of the stream:

- Discharge pH = 7.0 (Default)
- Discharge Temperature = 25°C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 25ºC (Default for WWF)
- Background NH_3-N = 0 (Default)



The model input data and results are attached. The printout of the WQM 7.0 output indicates that at a discharge of 0.330 MGD, limits (rounded according to the NPDES Technical Guidance 362-0400-001) of 2.77 mg/L NH_3-N as a monthly average and 5.54 mg/L NH_3-N instantaneous maximum are necessary to protect the aquatic life from toxicity effects.

The more stringent summer in existing limits of 2.5 mg/L monthly average & 5.0 mg/L IMAX will remain in the proposed permit due to anti-backsliding requirements. The winter effluent limit will be set at three-times the summer limits. Recent DMRs and inspection reports indicate that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Summer average monthly mass limit: 2.5 mg/L x 0.330 MGD x 8.34 = 6.88 (6.8) lbs/day
Winter average monthly mass limit: 7.5 mg/L x 0.330 MGD x 8.34 = 20.0 lbs/day

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model indicates that a monthly average limit of 25 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. Recent DMRs and inspection reports show that the facility has been consistently achieving concentrations well below this existing limit. Mass limits are calculated as follows:

Average monthly mass limit: 25 mg/L x 0.330 MGD x 8.34 = 68.8 (68.0) lbs/day
Average weekly mass limit: 40 mg/L x 0.330 MGD x 8.34 = 110.0 lbs/day

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 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/quarter 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(1).

Total Suspended Solids (TSS):
The existing limits of 30 mg/L average monthly and 60 mg/L instantaneous maximum will remain in the permit based on the minimum level of effluent quality attainable by secondary treatment based on 25 Pa. Code § 92a.47. Recent DMRs and inspection reports show that the facility has been consistently achieving concentrations well below these limits. Mass limits are calculated as follows:

Average monthly mass limit: 30 mg/L x 0.330 MGD x 8.34 = 82.5 (82.0) lbs/day
Average weekly mass limit: 45 mg/L x 0.330 MGD x 8.34 = 123.8 (123.0) lbs/day

UV:
The UV system daily monitor and report the UV light intensity (mW/cm^2) after update to replace chlorine disinfection to UV disinfection system will be in the amendment permit.

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

Toxics:
Review of the permit application revealed no toxic parameters of concern. The application states that there are no industrial wastewater contributions.

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

Phosphorus:
Technology-based phosphorus limits of 2.0 mg/L average monthly and 4.0 mg/L instantaneous maximum were applied by the original 1998 protection report. The limits will remain in the proposed permit. Recent DMR data and inspection reports indicate consistent achievement. Mass limits are calculated as follows:

Average monthly mass limit: 2.0 mg/L x 0.330 MGD x 8.34 = 5.5 lbs/day

Total Dissolved Solids (TDS) / Sulfate / Chloride / Bromide / 1,4-Dioxane:
Total Dissolved Solids (TDS) and its major constituents including sulfate, chloride, and bromide have emerged as pollutants of concern in several major watersheds in the Commonwealth. The conservative nature of these solids allows them to accumulate in surface waters and they may remain a concern even if the immediate downstream public water supply is not directly impacted. Under the authority of § 92a.61, statewide guidance distributed by the Department's Central Office on January 23, 2014 stated the following:

For point source discharges and upon issuance or reissuance of an individual NPDES permit:

- *Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.*
- *Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.*
- *Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 MGD or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/L.*

The table below compares the above thresholds for monitoring requirements with the concentrations documented in the current application:

Table 5. Department Monitoring Thresholds and Expected Discharge Concentrations for TDS and Related Parameters

Parameter	Threshold for Discharges >0.1 MGD	Threshold for Discharges ≤0.1 MGD	Max. Concentration in Application
TDS	1,000 mg/L or 20,000 lbs/day	5,000 mg/L	794 mg/L
Sulfate	NA	NA	100 mg/L
Chloride	NA	NA	210 mg/L
Bromide	1 mg/L	10 mg/L	<0.50 mg/L
1,4-Dioxane	10 µg/L	100 µg/L	(Not Expected to be Present)

Based on the sampling results in the application, no monitoring will be required for the above parameters of concern.

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 I, II, and III) 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 IV (0.2 -0.4 MGD) will be required to monitor and report TN and TP during permit renewal monthly. However, any facility in Phases IV that undergoes expansion is subjected to cap load right away. This plant is classified as a phase IV, the existing TN and TP "Monitor & Report" requirements will remain in the proposed permit.

Antidegradation (93.4):
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality waters are impacted by this discharge. No Exceptional Value waters are impacted by this discharge.

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

303(d) Listed Streams:

eMapPA lists White Run as impaired (non-attaining) at the discharge point for nutrients and siltation due to small residential runoff and for flow alterations due to an upstream impoundment, which was created on March 29, 1999. Approximately 0.52 river miles downstream, Rock Creek is listed as impaired (non-attaining) for nutrients due to agriculture and a municipal point source, which was created on May 19, 2009. A TMDL has not yet been written for these impairments.

<u>WQM 7.0 Data</u>:

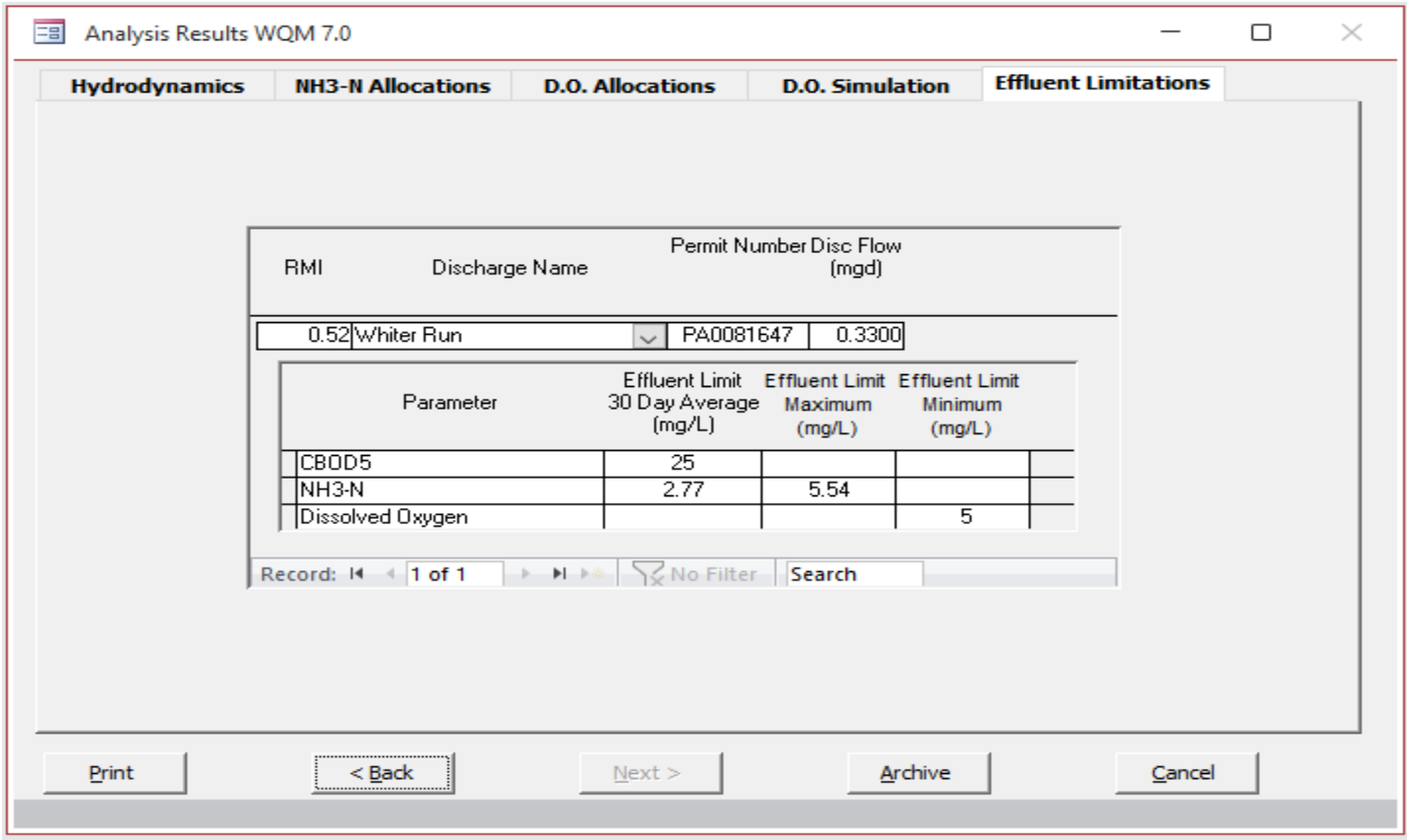
*	Discharge pH	=	7.0	(Default)
*	Discharge Temperature	=	25°C	(Default)
*	Stream pH	=	7.0	(Default)
*	Stream Temperature	=	25°C	(Default for WWF)
*	Background NH_3-N	=	0	(Default)

Node 1: Outfall 001 on White Run (59099)

Elevation:	409.18 ft (USGS National Map Viewer)
Drainage Area:	12.8 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	0.52 (PA DEP eMapPA)
Q_{7-10} Low Flow Yield:	0.030 $cfs/mi.^2$
Discharge Flow:	0.330 MGD (NPDES permit)

Node 2: Just before confluence with Rock Creek

Elevation:	402.13 ft (USGS National Map Viewer)
Drainage Area:	13.0 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	0.01 (PA DEP eMapPA)
Q_{7-10} Low Flow Yield:	0.030 $cfs/mi.^2$
Discharge Flow:	0.000 MGD



rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
13D	59099	WHITE 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)
0.520	White Run	PA0081647	0.330	CBOD5	25		
				NH3-N	2.77	5.54	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
13D	59099	WHITE 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
0.520	White Run	11.07	16.4	11.07	16.4	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
0.520	White Run	1.37	2.77	1.37	2.77	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
0.52	White Run	25	25	2.77	2.77	5	5	0	0

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rptDOSim

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
13D	59099	WHITE RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.520	0.330	25.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
16.148	0.519	31.121	0.107
Reach CBOD5 (mg/L)	**Reach Kr (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
15.13	1.389	1.58	1.029
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.392	18.370	Owens	5
Reach Travel Time (days)			
0.292			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.029	14.37	1.53	6.18
0.058	13.66	1.49	6.10
0.088	12.98	1.44	6.10
0.117	12.33	1.40	6.15
0.146	11.72	1.36	6.22
0.175	11.14	1.32	6.30
0.204	10.58	1.28	6.38
0.234	10.06	1.24	6.47
0.263	9.56	1.20	6.55
0.292	9.08	1.17	6.63

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rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
W/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	Stream Code	Stream Name
13D	59099	WHITE RUN

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												
0.520	0.38	0.00	0.38	.5105	0.00262	.519	16.15	31.12	0.11	0.292	25.00	7.00
Q1-10 Flow												
0.520	0.25	0.00	0.25	.5105	0.00262	NA	NA	NA	0.10	0.321	25.00	7.00
Q30-10 Flow												
0.520	0.52	0.00	0.52	.5105	0.00262	NA	NA	NA	0.12	0.269	25.00	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
13D	59099	WHITE RUN	0.520	409.18	12.60	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.030	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
White Run	PA0081647	0.3000	0.3000	0.3000	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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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
13D	59099	WHITE RUN	0.010	402.13	13.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.030	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	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
White Run	PA0081647	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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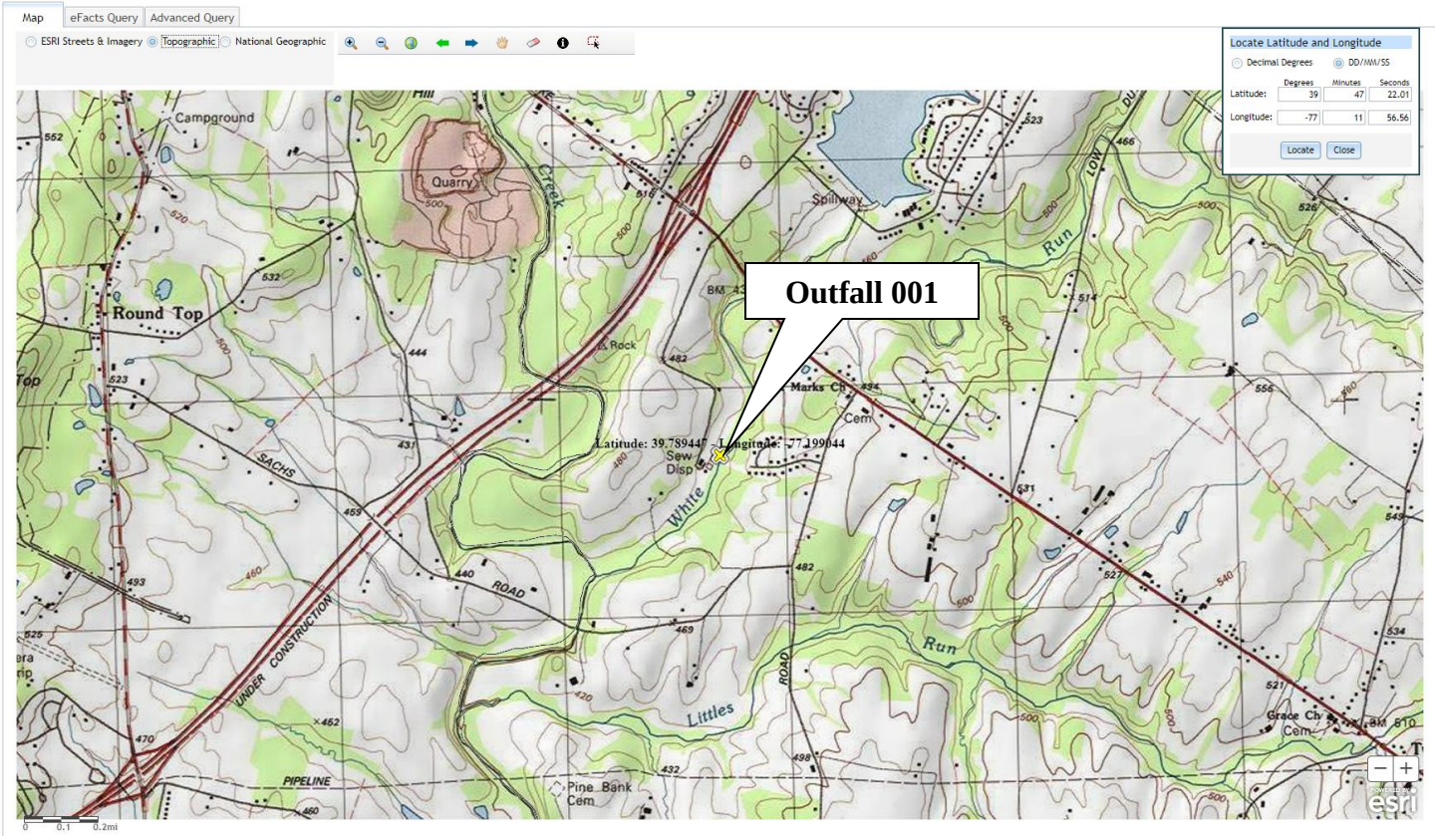
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Spillway
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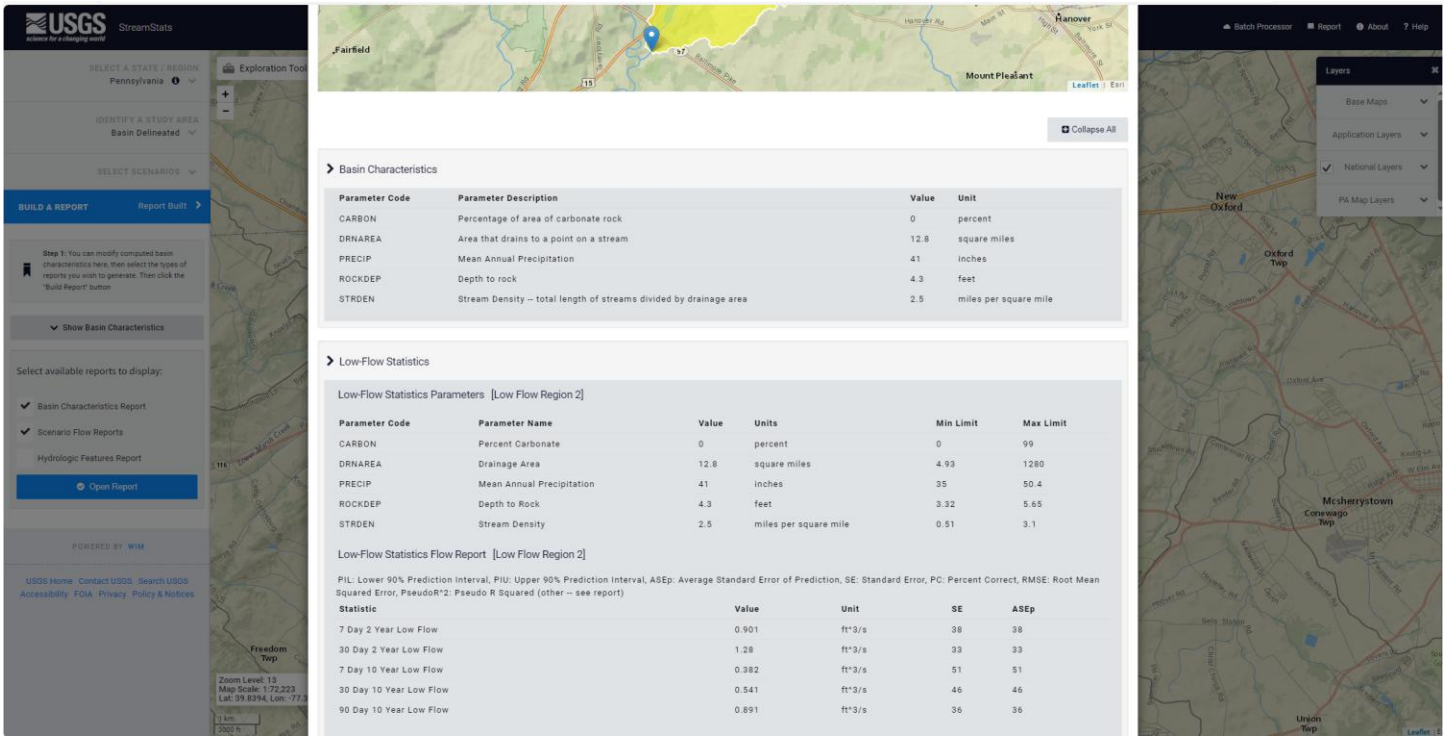
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Pennsylvania
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Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
Fairfield
Hanover
Mount Pleasant
Collapse All
Basin Characteristics
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 | 12.8 | square miles
PRECIP | Mean Annual Precipitation | 41 | inches
ROCKDEP | Depth to rock | 4.3 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 2.5 | 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 | 12.8 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 41 | inches | 35 | 50.4
ROCKDEP | Depth to Rock | 4.3 | feet | 3.32 | 5.65
STRDEN | Stream Density | 2.5 | 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 | 0.901 | ft^3/s | 38 | 38
30 Day 2 Year Low Flow | 1.28 | ft^3/s | 33 | 33
7 Day 10 Year Low Flow | 0.382 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 0.541 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 0.891 | ft^3/s | 36 | 36
Batch Processor
Report
About
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Layers
Base Maps
Application Layers
National Layers
PA Map Layers
New Oxford
Oxford Twp
Mcsherrystown
Conewago Twp
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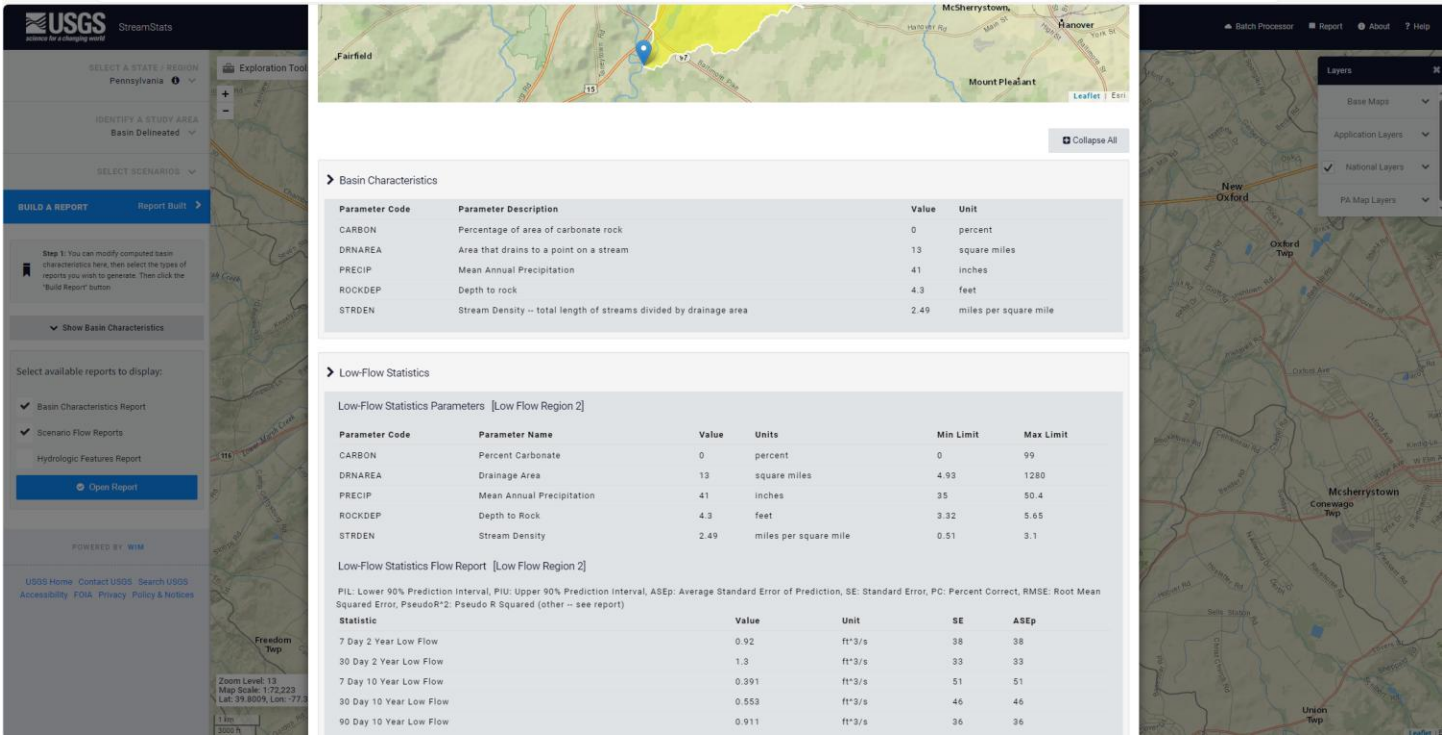
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Pennsylvania
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Show Basin Characteristics
Select available reports to display:
Basin Characteristics Report
Scenario Flow Reports
Hydrologic Features Report
Open Report
Fairfield
McSherrystown
Hanover
Mount Pleasant
Leaflet | Esri
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 | 13 | square miles
PRECIP | Mean Annual Precipitation | 41 | inches
ROCKDEP | Depth to rock | 4.3 | feet
STRDEN | Stream Density -- total length of streams divided by drainage area | 2.49 | 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 | 0 | percent | 0 | 99
DRNAREA | Drainage Area | 13 | square miles | 4.93 | 1280
PRECIP | Mean Annual Precipitation | 41 | inches | 35 | 50.4
ROCKDEP | Depth to Rock | 4.3 | feet | 3.32 | 5.65
STRDEN | Stream Density | 2.49 | 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 | 0.92 | ft^3/s | 38 | 38
30 Day 2 Year Low Flow | 1.3 | ft^3/s | 33 | 33
7 Day 10 Year Low Flow | 0.391 | ft^3/s | 51 | 51
30 Day 10 Year Low Flow | 0.553 | ft^3/s | 46 | 46
90 Day 10 Year Low Flow | 0.911 | ft^3/s | 36 | 36
Batch Processor
Report
About
Help
Layers
Base Maps
Application Layers
National Layers
PA Map Layers
New Oxford
Oxford Twp
Mcsherrystown
Conewago Twp
Union Twp

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: