Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0036285**
Facility Type	**Non-Municipal**	APS ID	**328106**
Major / Minor	**Minor**	Authorization ID	**1471489**

Applicant and Facility Information

Applicant Name	**ATG Properties LLC**	Facility Name	**Brookhaven MHP**
Applicant Address	PO Box 677	Facility Address	132 Gosling Drive
	Morgantown, PA 19543-0677		York, PA 17402
Applicant Contact	James Perano	Facility Contact	Leanne Miller
Applicant Phone	(610) 286-0490	Facility Phone	(610) 286-0490
Client ID	143577	Site ID	271664
Ch 94 Load Status	Not Overloaded	Municipality	Hellam Township
Connection Status		County	York
Date Application Received	January 30, 2024	EPA Waived?	Yes
Date Application Accepted	February 8, 2024	If No, Reason	

Purpose of Application: Renewal of existing NPDES Permit

Summary of Review

ATG Properties LLC has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued to ATG Properties LLC on July 18, 2019. The permit expired on July 31, 2024 but the terms and conditions of the permit have been administratively extended since that time.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted and a notice of the draft permit be published in the *Pennsylvania Bulletin* for public comments for 30 days. A file review of documents associated with the discharge or permittee may be available at the PA DEP southcentral regional office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file reviews, contact the SCRO file review coordinator at 717.705.4700.

Sludge use and disposal description and location(s): Hauled offsite to either the Annville Township STP or the Springettsbury Township STP.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
x		*Aaron Baar* Aaron Baar / Project Manager	January 24, 2025
x		*Maria D. Bebenek* for Daniel W. Martin, P.E. / Environmental Engineer Manager	January 27, 2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.04
Latitude	40º 1' 29.52"	Longitude	-76º 39' 51.03"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Dee Run (WWF)	Stream Code	08040
NHD Com ID	57466229	RMI	1.20
Drainage Area	1.63 mi^2	Yield (cfs/mi^2)	0.2399
Q_{7-10} Flow (cfs)	0.391	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	479.1	Slope (ft/ft)	
Watershed No.	7-H	Chapter 93 Class.	WWF
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	Wrightsville Water Supply Co.		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	28.51	Distance from Outfall (mi)	12.0

Changes Since Last Permit Issuance: No changes since the last issuance of the Brookhaven STP NPDES permit.

Drainage Area
The discharge is to Dee Run at RMI 1.20. The drainage area upstream of the discharge is determined to be 1.63 sq.mi. according to USGS PA StreamStats available at https://streamstats.usgs.gov/ss/.

Stream Flow
According to StreamStats, the watershed has a Q_{7-10} of 0.391 cfs. This information was used to obtain a LFY, a chronic 30-day (Q_{30-10}) and acute (Q_{1-10}) exposure stream flows for the discharge point as follows (Guidance No. 391-2000-023).

Q_{7-10} = 0.391 cfs
Q_{30-10} = 1.36 * 0.391 cfs = 0.5318 cfs
Q_{1-10} = 0.64 * 0.391 cfs = 0.2502 cfs
LFY = 0.391 cfs/1.63 mi^2 = 0.2399 cfs/mi^2

Dee Run
25 Pa Code §93.9 classifies the receiving water, Dee Run, with a WWF Existing Use designation. No special protection waters are impacted by this discharge. The discharge is in a stream segment listed as attaining all uses (aquatic life, recreation and fish consumption) in the 2024 Integrated Report. 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.

Local Watershed Total Maximum Daily Loads (TMDLs)
According to PA's 2024 Integrated Water Quality Monitoring and Assessment Report, Dee Run in the vicinity of the point of discharge is listed as not impaired with a Category 2 classification, indicating that some but not all uses are

met. The assessment status of the remaining uses may be unknown because data are insufficient to assess the water, or it may be impaired.

Public Water Supply Intake

The nearest downstream public water supply intake is the Wrightsville Borough Municipal Authority intake located on the Susquehanna River approximately 12 miles from the discharge. Considering the distance and nature, the discharge is not expected to significantly affect the water supply.

Class A Wild Trout Streams

The receiving stream is not a Class A Wild Trout stream; therefore, no Class A Wild Trout Fishery is impacted by this discharge.

Treatment Facility Summary

Treatment Facility Name: Brookhaven MHP

WQM Permit No.	Issuance Date

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Hypochlorite	0.04

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.04		Not Overloaded		

ATG Properties, LLC owns and operates the Brookhaven MHP sanitary wastewater treatment facility located in Hellam Township, York County. The facility serves only the Brookhaven MHP, all wastes are residential in nature, and all sewer systems are 100% separated. Having an annual average design flow of 0.040 MGD and a hydraulic design capacity of 0.060 MGD, this facility consists of a bar screen, a comminutor, an EQ tank, four aeration tanks, two settling tanks, a chlorinator, a chlorine contact tank, a dichlorination tank and the outfall (i.e., Outfall 001). Sodium hypochlorite (disinfection), sodium bisulfite (dichlorination) and sodium carbonate (alkalinity amendment) are all utilized at the facility. Solids are stored onsite in a sludge holding tank before being hauled offsite for disposal.

Compliance History	
Summary of DMRs:	DMR results for the past year are presented below.
Summary of Inspections:	Since the last renewal of the facility's NPDES permit, the following inspections have been logged: November 14, 2019: A CEI was conducted by Austen Randecker. No violations were noted. Recommendations were made to repair/replace problem areas of the collection system, conducting an engineering evaluation of the support rails in the pumping station, repairing the clarifier trough/weir nearest the control building and fixing the non-operable pump in the pump station. June 10, 2020: An administrative inspection was conducted by phone by Austen Randecker. No violations were noted.

Other Comments: As of January 24, 2025, there are 7 open drinking water violations associated with this facility. The final permit may not be issued until these violations have been resolved.

Existing Effluent Limits

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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.34	XXX	1.11	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	15.0	XXX	30	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	5.0	XXX	10	2/month	8-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

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		
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

Compliance History

DMR Data for Outfall 001 (from December 1, 2023 to November 30, 2024)

Parameter	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23
Flow (MGD) Average Monthly	0.0116	0.0113	0.0134	0.0123	0.012	0.012	0.0123	0.0162	0.0152	0.0151	0.0188	0.018
Flow (MGD) Daily Maximum	0.0166	0.0144	0.0235	0.0198	0.0182	0.0153	0.0178	0.0578	0.0371	0.0238	0.0605	0.1022
pH (S.U.) Instantaneous Minimum	6.2	6.2	6.6	6.6	6.2	6.4	6.5	6.7	6.8	6.4	6.5	6.6
pH (S.U.) Instantaneous Maximum	7.5	7.5	8.1	7.6	7.8	7.6	7.6	7.5	7.4	7.6	7.6	7.5
DO (mg/L) Instantaneous Minimum	7.12	5.93	5.02	5.35	5.02	5.28	6.24	7.58	6.62	7.68	7.59	6.71
TRC (mg/L) Average Monthly	< 0.04	< 0.03	< 0.04	< 0.04	< 0.04	< 0.04	< 0.02	< 0.03	< 0.03	< 0.02	< 0.02	< 0.02
TRC (mg/L) Instantaneous Maximum	0.34	0.28	0.25	0.22	0.18	0.25	0.09	0.10	0.15	0.03	0.04	0.05
CBOD5 (mg/L) Average Monthly	< 2.2	< 2.1	< 2.0	< 2.8	< 2.0	< 2.0	< 5.2	15.7	< 7.4	< 3.2	< 3.8	7.6
CBOD5 (mg/L) Instantaneous Maximum	2.4	2.1	< 2.0	3.6	< 2.0	< 2.0	8.4	43.9	18.0	4.3	7.4	15.9

TSS (mg/L) Average Monthly	< 4.0	< 4.8	< 4.0	< 4.0	< 4.0	< 4.1	< 4.0	< 12.8	< 8.1	< 5.3	9.1	< 5.9
TSS (mg/L) Instantaneous Maximum	4.0	5.5	< 4.0	< 4.0	< 4.0	4.2	4.0	29.0	16.0	6.5	10.4	7.2
Fecal Coliform (No./100 ml) Geometric Mean	< 1	1	< 3	< 1	71	1	< 3	< 3	< 1	< 1	< 2	< 4
Fecal Coliform (No./100 ml) Instantaneous Maximum	1	2	8	1	5100	2	10	108	< 1	1	3	8
Nitrate-Nitrite (mg/L) Average Monthly	33.9	29.6	28.9	20.2	12.32	14.7	17.6	< 13.56	21.3	23.6	20.47	20.01
Nitrate-Nitrite (lbs) Total Monthly	75	84	79	49	32	45	51	< 62	100	74	64	75
Total Nitrogen (mg/L) Average Monthly	35.2	30.9	29.8	21.8	13.6	16.1	18.8	19.2	24.5	25.1	16.09	23
Total Nitrogen (lbs) Total Monthly	78	88	82	53	35	49	54	131	119	79	54	88
Total Nitrogen (lbs) Total Annual			< 1046									
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.37	< 0.1	< 0.1	< 0.1	< 2.35	< 1.22	< 0.1	< 0.8	< 1.11
Ammonia (mg/L) Instantaneous Maximum	< 0.1	< 0.1	< 0.1	0.63	< 0.1	< 0.1	< 0.1	6.56	2.79	< 0.1	2.2	2.21
Ammonia (lbs) Total Monthly	< 0.2	< 0.3	< 0.3	< 0.9	< 0.3	< 0.3	< 0.3	< 31	< 9	< 0.3	< 4	< 5
Ammonia (lbs) Total Annual			< 77									
TKN (mg/L) Average Monthly	1.28	1.3	0.89	1.58	1.3	1.36	1.19	5.86	3.1	1.5	2.47	3.03
TKN (lbs) Total Monthly	3	4	2	4	3	4	3	73	20	5	11	13
Total Phosphorus (mg/L) Average Monthly	6	6.09	6.4	6.23	6.71	6.36	5.64	3.45	4.6	3.79	3.39	3.1
Total Phosphorus (lbs) Total Monthly	13	17	17	15	17	20	16	21	23	12	11	12
Total Phosphorus (lbs) Total Annual			193									

Compliance History

Effluent Violations for Outfall 001, from: January 1, 2024 To: November 30, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	07/31/24	IMAX	5100	No./100 ml	1000	No./100 ml

Other Comments: The cause of the exceedance is listed as, “Insufficient/overdose chemical feed.”

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .04
Latitude 40º 1' 22.53" **Longitude** -76º 39' 14.93"
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: These standards apply, subject to water quality analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance no. 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges.

The model was utilized, and the model output indicated that existing WQBEL for CBOD5 and ammonia are still appropriate and protective of water quality.

A minimum of 5.0 mg/L for DO is an existing effluent limit and will remain unchanged in the draft permit as recommended by DEP's SOP. This requirement has also been assigned to other sewage facilities in the region. 5.0 mg/L is taken directly from 25 Pa. Code § 93.7(a) and it is also determined to be appropriate according to water quality modeling.

Total Residual Chlorine

Since chlorine is used for disinfection, Total Residual Chlorine (TRC) effluent levels must be regulated in accordance with 25 Pa Code §92a.48(b). DEP's TRC_CALC worksheet is utilized to determine if the existing BAT TBEL is still appropriate. The worksheet indicates that the existing limits of 0.34 mg/L (average monthly) and 1.11 mg/L (IMAX) are still protective of water quality.

Toxics

DEP's NPDES permit application for minor sewages (less than 0.1 MGD) does not require sampling for heavy metals including Total Copper, Total Lead, and Total Zinc.

Best Professional Judgment (BPJ) Limitations

Total Phosphorus & Total Nitrogen

DEP's SOP no. BPNPSM-PMT-033 recommends monitoring requirements for Total Phosphorus and Total Nitrogen for all sewage facilities. Therefore, routine monitoring for TKN, Nitrate-Nitrite, Total Nitrogen and Total Phosphorus are recommended to be continued in this permit renewal.

Additional Considerations

Flow Monitoring

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

E. Coli Monitoring

In conformity with the Department's *Establishing Effluent Limitations for Individual Sewage Permits* (SOP No. BCW-PMT-033) and as authorized by § 92a.61 of the PA Code, annual E. Coli monitoring has been proposed in this permit. The collection method will be via grab sample.

Chesapeake Bay TMDL

The Department formulated a strategy in April 2007, to comply with the EPA's and Chesapeake Bay Foundation's requirements to reduce point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP) to the Bay. In the Strategy, sewage dischargers have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers received 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. Phase 4 (0.2 -0.4mgd) and Phase 5 (below 0.2mdg) facilities were required to monitor and report TN and TP during permit renewal at a monitoring frequency following Table 6-3 of DEP's Technical Guidance for Development and Specification of effluent Limitations (No. 362-0400-001).

EPA published the Chesapeake Bay Total Maximum Daily Load (TMDL) in December of 2010. Despite extensive restoration efforts during the past 25 years, the TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries.

In order to address the TMDL, Pennsylvania developed, in addition to the Bay Strategy, a Chesapeake Watershed Implementation Plan (WIP) Phase 1 in January 2011, Phase 2 in March 2012 and Phase 3 in December 2019. In accordance with the Phase 3 WIP, re-issuing permits for significant dischargers follow the same phased approach formulated in the original Bay strategy, whilst Phase 4 and Phase 5 will be required to monitor and report TN and TP during permit renewal.

The Phase 3 WIP categorizes this facility as a phase 5 non-significant sewage facility that has a design flow less than 0.2 MGD but greater than 0.002 MGD. The WIP recommends monitoring and reporting for Total Nitrogen and Total Phosphorus throughout the permit term at a frequency no less than annual. As discussed previously, continued twice monthly testing of these pollutants is proposed in this permit.

Monitoring Frequency and Sample Type

Unless discussed otherwise above, the permit's monitoring frequency and sample type for all parameters will remain unchanged from the last permit renewal.

Antidegradation Requirements

All effluent limitations and monitoring requirements have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Anti-backsliding Requirement

All effluent limits proposed in this fact sheet are as stringent as effluent limits specified in the existing permit renewal. This approach is in accordance with 40 CFR §122.44(l(1).

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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.34	XXX	1.11	1/day	Grab
CBOD5	XXX	XXX	XXX	25.0	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30.0	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	15.0	XXX	30	2/month	8-Hr Composite

Outfall 001, Continued (from 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		
Ammonia May 1 - Oct 31	XXX	XXX	XXX	5.0	XXX	10	2/month	8-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

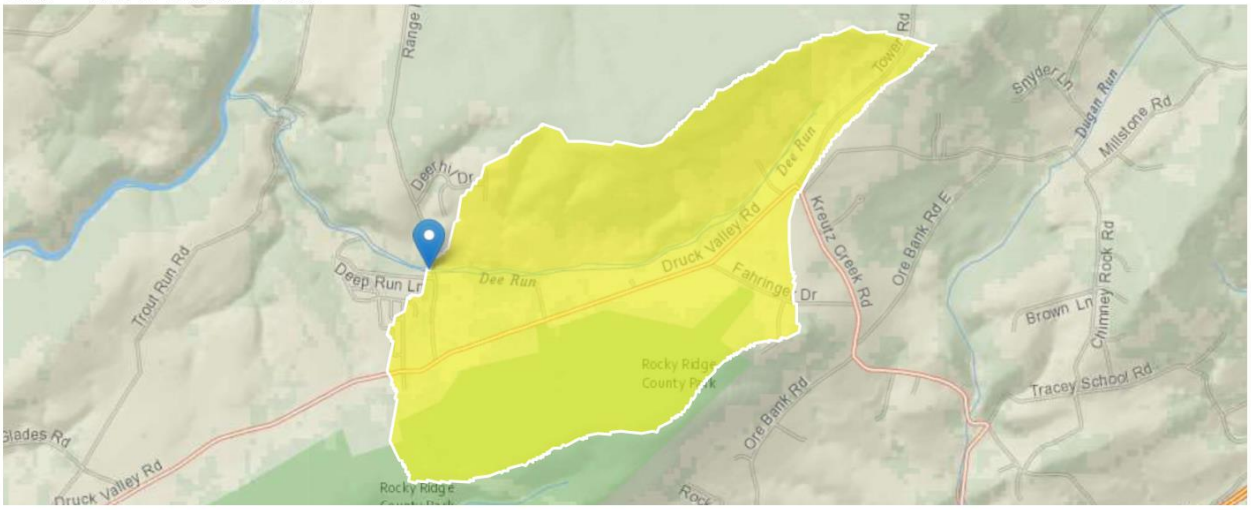
Compliance Sampling Location: Outfall 001

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:
☐	Other:


311890 - DISCHARGE POINT
Range Rd
Deermil Dr
Fawn Ct
Antler Dr
Deep Run Ln
Pine Dr
Cockatoo Dr
Gosling Dr
Clover Dr
Brooklyn Dr
Druck Valley Rd
Dee Run
Raben Ln
Ramel Ln

StreamStats Report

Region ID: PA
Workspace ID: PA20250124140420847000
Clicked Point (Latitude, Longitude): 40.02301, -76.65434
Time: 2025-01-24 09:04:44 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	7.4305	degrees
DRNAREA	Area that drains to a point on a stream	1.63	square miles
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	1.1258	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	7.4305	degrees	1.7	6.4
DRNAREA	Drainage Area	1.63	square miles	4.78	1150
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	1.1258	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

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 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.734	ft^3/s
30 Day 2 Year Low Flow	0.842	ft^3/s
7 Day 10 Year Low Flow	0.391	ft^3/s
30 Day 10 Year Low Flow	0.462	ft^3/s
90 Day 10 Year Low Flow	0.568	ft^3/s

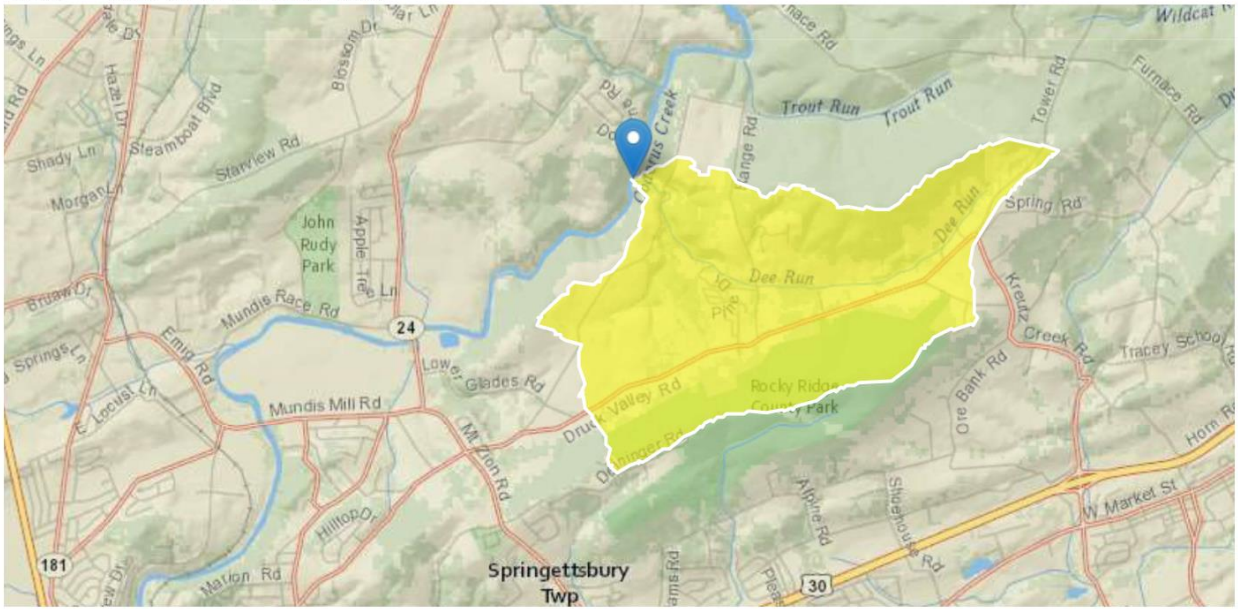
Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.25.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report

Region ID: PA
Workspace ID: PA20250124140556205000
Clicked Point (Latitude, Longitude): 40.03226, -76.66813
Time: 2025-01-24 09:06:20 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	6.5407	degrees
DRNAREA	Area that drains to a point on a stream	3.17	square miles
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	1.8946	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	6.5407	degrees	1.7	6.4
DRNAREA	Drainage Area	3.17	square miles	4.78	1150

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	1.8946	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

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 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	1.24	ft^3/s
30 Day 2 Year Low Flow	1.45	ft^3/s
7 Day 10 Year Low Flow	0.652	ft^3/s
30 Day 10 Year Low Flow	0.786	ft^3/s
90 Day 10 Year Low Flow	1.01	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.25.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07H	8040	DEE 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)
1.200	Brookhaven MHP	PA0036285	0.040	CBOD5	25		
				NH3-N	5	10	
				Dissolved Oxygen			5

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07H	8040	DEE 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
1.200	Brookhaven MHP	15.44	10	15.44	10	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.200	Brookhaven MHP	1.82	5	1.82	5	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.20	Brookhaven MHP	25	25	5	5	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07H	8040	DEE RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.200	0.040	20.683	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
6.974	0.461	15.141	0.141
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.14	0.853	0.68	0.738
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.800	24.900	Owens	6
Reach Travel Time (days)			
0.520			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.052	4.91	0.66	8.14
0.104	4.69	0.63	8.14
0.156	4.48	0.61	8.14
0.208	4.28	0.59	8.14
0.260	4.09	0.56	8.14
0.312	3.91	0.54	8.14
0.364	3.73	0.52	8.14
0.416	3.57	0.50	8.14
0.468	3.41	0.48	8.14
0.520	3.25	0.47	8.14

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07H	8040	DEE RUN

RMI	Stream Flow (cfs)	PWS With (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												
1.200	0.39	0.00	0.39	.0619	0.03123	.461	6.97	15.14	0.14	0.520	20.68	7.00
Q1-10 Flow												
1.200	0.25	0.00	0.25	.0619	0.03123	NA	NA	NA	0.11	0.640	20.99	7.00
Q30-10 Flow												
1.200	0.53	0.00	0.53	.0619	0.03123	NA	NA	NA	0.16	0.447	20.52	7.00

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
07H	8040	DEE RUN	**1.200**	479.10	1.63	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	0.219	0.00	0.39	0.000	0.000	0.0	0.00	0.00	0.00	0.00	20.00	7.00
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
Brookhaven MHP	PA0036285	0.0400	0.0400	0.0400	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	5.00	0.00	0.00	0.70

TRC_CALC

1A	B	C	D	E	F	G
2	**TRC EVALUATION**					
3	**Input appropriate values in B4:B8 and E4:E7**					
4	0.391	**= Q stream (cfs)**		0.5	**= CV Daily**	
5	0.04	**= Q discharge (MGD)**		0.5	**= CV Hourly**	
6	30	**= no. samples**		1	**= AFC_Partial Mix Factor**	
7	0.3	**= Chlorine Demand of Stream**		1	**= CFC_Partial Mix Factor**	
8	0	**= Chlorine Demand of Discharge**		15	**= AFC_Criteria Compliance Time (min)**	
9	0.34	**= BAT/BPJ Value**		720	**= CFC_Criteria Compliance Time (min)**	
	0	**= % Factor of Safety (FOS)**			**=Decay Coefficient (K)**	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 2.035		1.3.2.iii	WLA cfc = 1.976
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 0.758		5.1d	LTA_cfc = 1.149
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.340		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 1.112			

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)**