Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0034860**
Facility Type	**Non-Municipal**	APS ID	**1111198**
Major / Minor	**Minor**	Authorization ID	**1487467**

Applicant and Facility Information

Applicant Name	**Nebula Realty Trust**	Facility Name	**Penn Valley MHP**
Applicant Address	123 Gilpin Drive	Facility Address	908 Perry Road
	West Chester, PA 19382		Lititz, PA 17543
Applicant Contact	P.C.S. Chadaga	Facility Contact	P.C.S. Chadaga
Applicant Phone	(484) 887-8247	Facility Phone	(484) 887-8247
Client ID	377741	Site ID	239661
Ch 94 Load Status	Not Overloaded	Municipality	Penn Township
Connection Status	No Limitations	County	Lancaster
Date Application Received	May 13, 2024	EPA Waived?	No
Date Application Accepted	June 5, 2024	If No, Reason	Chiques Creek Alternate TMDL
Purpose of Application	NPDES Renewal.		

Summary of Review

Nebula Realty Trust has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The existing permit was issued January 9, 2020, and became effective on February 1, 2020, authorizing discharge of treated sewage from the Penn Valley MHP Treatment Plant into UNT to Chiques Creek. The existing permit expiration date was January 31, 2025, and the permit has been administratively extended since that time. The existing NPDES permit was transferred from P.C.S. Chadaga to Nebula Realty Trust on May 7, 2024.

Per the previous fact sheet, the receiving stream was observed to be dry upstream and the effluent eventually soaked into the streambed before reaching the first downstream farm, approximately 2,000' away. The effluent was maintaining a school of minnows at the discharge pipe. Aquatic life was checked by lifting rocks, but nothing except planarians was observed. The stream was observed to be dry on October 13, 2001 and during August 2002. The stream was still dry at the bridge of S.R. 4040, and another 100' downstream the stream became a wetland type swamp with no discrete channel. Eventually a channel was formed, but the streambed is heavily impacted by the cows pasturing in the area, leading to silt deposition over the substrate. Because of the silted conditions, it was difficult to determine whether there was aquatic life. A further 500' downstream, there was still no aquatic life, and a small UNT entered the stream at the intersection of L.R. 36002 and S.R. 4040. It was found that the UNT contained a sparse community of snails, planarians, a couple of web forming caddis larvae, and beetle larvae. Downstream of the UNT, the main stem continued as before. After discussions with the aquatic biologist, it was determined that the point of first use was approximately 3,000' downstream, where the UNT entered the stream.

A Water Quality Management (WQM) permit was issued on January 9, 2020 for improvements to the treatment plant. These improvements included the replacement of the equalization (EQ) tank pumps, replacement of the aeration system with a new extended aeration system, modifications to the sand filter pump station, replacement of the chlorine disinfection system with a UV disinfection system, construction of a new UV duplex pump station, modifications to the existing sludge holding tank, construction of new blower motor shed, and the installation of a new 2" flow meter.

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	February 19, 2025
		Daniel W. Martin, P.E. / Environmental Engineer Manager	

Summary of Review

Changes in this renewal: E. Coli monitoring has been added to the permit.

Sludge use and disposal description and location(s): Sludge holding tank with offsite disposal.

Supplemental information for this facility is provided at the end of this fact sheet.

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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.011
Latitude	40º 10' 47.9"	Longitude	76º 21' 0.7"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Chiques Creek (WWF)	Stream Code	7999
NHD Com ID	57462403	RMI	2.8
Drainage Area	1.36 mi^2	Yield (cfs/mi^2)	0.119
Q_{7-10} Flow (cfs)	0.16	Q_{7-10} Basis	USGS Gage #01576500
Elevation (ft)	429	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Eutrophication, Habitat Alterations, Siltation, Siltation, Pathogens		
Source(s) of Impairment	Agriculture, Habitat Modification – Other Than Hydromodification, Agriculture, Urban Runoff/Storm Sewers, Source Unknown		
TMDL Status		Name	Chiques Creek Alternate TMDL
Nearest Downstream Public Water Supply Intake	Columbia Water Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	27.5	Distance from Outfall (mi)	25

Changes Since Last Permit Issuance: A drainage area of 1.36 mi^2 and a Q_{7-10} flow of 0.25 cubic feet per second (cfs) were determined by establishing a correlation to the yield of USGS Gage Station #01576500 on the Conestoga River. The Q_{7-10} and drainage area at the gage are 38.6 cfs and 324 mi^2, respectively. These values are taken from the USGS document "Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania". The Q_{7-10} runoff rate at the gage station was calculated as follows:

Yield = (38.6 cfs)/ 324 mi^2 = 0.119 cfs/mi^2

The drainage area at the discharge point, taken from USGS PA StreamStats = 1.36 mi^2

The Q_{7-10} at the discharge point = 1.36 mi^2 x 0.119 cfs/mi^2 = 0.16 cfs

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Extended Aeration	UV	0.011
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.021	22.9	Not Overloaded	Sludge Holding	Other WWTP

Changes Since Last Permit Issuance: The new treatment process consists of the following: Influent Trash Basket, EQ Tank, Two (2) Aeration Tanks, Clarifier, Sand Filter Bed PS, Two (2) Sand Filter Beds, UV PS, UV Disinfection System, Sludge Holding Tank, Outfall 001 to UNT to Chiques Creek

Other Comments: None

Compliance History	
Summary of DMRs:	A summary of past DMR effluent data is presented on the next page of this fact sheet.
Summary of Inspections:	6/23/2020: An administrative inspection was conducted. The facility was operating normally and there were no outstanding needs at the time of inspection. 10/21/2020: A routine inspection was conducted. The clarifier effluent trough appeared clear. There was little to no solids or vegetation present on the surface of the sand filter bed. The UV pump station flow appeared clear. No other issues were noted. 4/5/2022: A routine inspection was conducted. Sample results from the inspection were within permitted limits. The effluent from the clarifier appeared clear. There was no apparent sludge accumulation on the sand filters.

Other Comments: There are currently no open violations associated with the Applicant.

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	Instantaneous 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
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	33	XXX	66	2/month	8-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	11	XXX	22	2/month	8-Hr Composite
Kjeldahl--N	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	XXX	XXX	2.0	XXX	4.0	2/month	8-Hr Composite
Total Phosphorus (Total Load, lbs)	XXX	67 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

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	0.00962	0.00818	0.0087	0.009	0.01068	0.00918	0.00883	0.00915	0.012329	0.01066	0.00929	0.01429
Flow (MGD) Daily Maximum	0.01606	0.01196	0.01304	0.01345	0.02539	0.01434	0.01332	0.01523	0.04408	0.02827	0.01495	0.04268
pH (S.U.) Instantaneous Minimum	7.63	7.84	7.83	7.09	7.42	7.19	7.82	7.14	7.09	7.4	7.33	7.54
pH (S.U.) Instantaneous Maximum	8.31	8.19	8.35	8.24	8.44	8.02	8.29	8.07	7.85	7.84	7.94	8.07
DO (mg/L) Instantaneous Minimum	8.62	7.84	6.47	6.05	6.74	6.42	7.75	5.95	6.54	9.08	7.42	9.14
TRC (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG				
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	GG	GG	GG	GG				
CBOD5 (mg/L) Average Monthly	< 3.0	< 2.0	< 4.0	< 2.0	4.0	< 3.0	3.0	< 2.0	< 2.0	< 2.0	< 3.0	5.0
TSS (mg/L) Average Monthly	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	7.0	< 5.0	< 4.0	< 4.0	7.0
Fecal Coliform (No./100 ml) Geometric Mean	< 15	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	26	5	7
Fecal Coliform (No./100 ml) Instantaneous Maximum	216	1	1	< 1	< 1	< 1	< 1	< 1	1	116	12	28
UV Transmittance (%) Instantaneous Minimum				73	70	70	69	63	65	66	60	68
Nitrate-Nitrite (mg/L) Average Monthly	40.7	32.8	34.7	30.1	37	38.2	32.1	32.7	32.8	35.2	37.5	19.1
Total Nitrogen (mg/L) Average Monthly	42.5	< 33.5	35.8	< 30.4	< 37.8	39.1	< 33.1	34.1	33.9	36.2	< 39.8	21
Ammonia (mg/L) Average Monthly	1.17	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1.16	< 0.33

TKN (mg/L) Average Monthly	1.84	< 0.74	1.08	< 0.7	< 0.82	0.95	< 0.96	1.45	1.13	1.03	< 2.37	1.94
Total Phosphorus (lbs/day) Average Monthly	0.02	0.06	< 0.08	0.09	0.1	0.1	1.0	0.05	0.04	0.03	0.04	0.03
Total Phosphorus (mg/L) Average Monthly	0.2	0.6	< 0.8	0.9	1.0	1.1	0.5	0.6	0.3	0.3	0.3	0.3
Total Phosphorus (lbs) Total Annual				26								

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .011
Latitude 40º 10' 47.9" **Longitude** 76º 21' 0.7"
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)

Water Quality-Based Limitations

$CBOD_5$, NH_3-N

Pursuant to 40 CFR § 122.44(d)(1)(i), more stringent requirements should be considered when pollutants are discharged at the levels which have the reasonable potential to cause or contribute to excursions above water quality standards.

WQM 7.0 ver. 1.1b is a water quality model designed to assist DEP in determining appropriate water quality based effluent limits (WQBELs) for carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia (NH_3-N) and dissolved oxygen (D.O.). DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges. The model was utilized for this permit renewal. The model output indicated a $CBOD_5$ average monthly limit of 25 mg/l, an NH_3-N average monthly limit of 25 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. The flow data used to run the model was acquired from USGS PA StreamStats and is included as an attachment. The $CBOD_5$ limit of 25 mg/l is the same as the existing permit limit, which will remain in the renewal. The existing NH_3-N limit of 11 mg/l is more stringent, and will remain in the permit.

There are no industrial/commercial users contributing industrial wastewater to the system and Nebula Realty Trust does not currently have an EPA-approved pretreatment program. Accordingly, evaluating reasonable potential of toxic pollutants is not necessary as effluent levels of toxic pollutants are expected to be insignificant.

Additional Considerations

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed 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). This strategy can be located in the *Pennsylvania Chesapeake Watershed Implementation Plan* (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. A new update to the WIP was published as the Phase 3 WIP in August 2019. As

part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on December 17, 2019, and is the basis for the development of any Chesapeake Bay related permit parameters. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads 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. For Phase 4 and 5 facilities, Cap Loads are not currently being implemented for renewed or amended permits for facilities that do not increase design flow.

This facility is considered a Phase 5 non-significant facility with a design flow less than 0.2 MGD but greater than 0.002 MGD. According to the Phase 3 WIP, TN and TP monitoring is recommended for this facility, which is consistent with the existing permit. TN monitoring and a TP limit are already included in the existing permit and will remain in the permit.

Chiques Creek Alternate Restoration Plan

This facility discharges to Chiques Creek. Chiques Creek was included on Pennsylvania's 1996 303(d) List of Impaired Waters due to nutrient impairments. A TMDL for the Chiques Creek Watershed was approved by the United States Environmental Protection Agency (EPA) on April 9, 2001. Due to several deficiencies within the TMDL, it was withdrawn with approval from EPA on October 28, 2015. DEP, Susquehanna River Basin Commission (SRBC) and watershed stakeholders have been in the process of developing a large scale monitoring and restoration plan. The goal of this Alternate Restoration Plan (ARP) is to address impacts to the Chiques Creek Watershed due to suspended solids/siltation and nutrient pollution. During the ongoing ARP development, this discharge permit will be renewed to conform with existing guidance. This permit will include a Total Phosphorus (TP) limit of 2.0 mg/l. The TP limit of 2.0 mg/l is derived from 25 Pa. Code § 96.5(c). This section states that "when it is determined that the discharge of phosphorus, alone or in combination with the discharge of other pollutants, contributes or threatens to impair existing or designated uses in a free flowing surface water, phosphorus discharges from point source discharges shall be limited to an average monthly concentration of 2 mg/l." This is consistent with existing limits for other dischargers to the Chiques Creek Watershed. This limit is included in the existing permit, and will remain in the renewal. A continued evaluation of dischargers to Chiques Creek will be performed as described in the NPDES Part C Conditions.

Chiques Creek TMDL

During the previous permit renewal, an evaluation was performed regarding phosphorus limitations. A TMDL was approved for Chiques Creek in 2001, which allocated 67 lbs/year TP to this facility based on 2 mg/l and 0.011 mgd. This allocation was included in the existing permit, and will remain in the renewal.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. This is consistent with the existing permit limits.

E. Coli

PA Code § 92a.61 requires IMAX reporting of E. Coli. Per DEP's SOP No. BCW-PMT-033, sewage dischargers with a design flow of 0.002 – 0.05 mgd will include E. Coli monitoring with a frequency of 1/year. This parameter has been added to the renewal permit.

UV Monitoring

As part of Penn Valley's upgrade, the existing chlorine disinfection system was replaced with UV disinfection. DEP's SOP No. BPNPSM-PMT-033 recommends at a minimum, routine monitoring of UV transmittance, dosage, or intensity when the facility is utilizing a UV disinfection system. The monitoring should occur at the same frequency as would be used for TRC. This recommendation was implemented as a part of the proper operation and maintenance requirement specified in Part B of the NPDES permit, requesting permittees to demonstrate the effectiveness of UV disinfection system. This approach has been assigned to other facilities equipped with similar technology. Accordingly, a parameter for UV Transmittance will be included in the permit.

Sampling Frequency & Sample Type

The monitoring requirements were established based on BPJ and/or Table 6-3 of DEP's Technical Guidance No. 362-0400-001.

Anti-Degradation

The effluent limits for this discharge 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. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303(d) Listed Streams

The discharge is located on a stream segment that is designated as impaired. There is an aquatic life impairment for eutrophication due to agriculture, habitat modification – other than hydromodification due to habitat alterations, siltation due to agriculture, and siltation due to urban runoff/storm sewers. There is a recreational impairment due to pathogens from an unknown source.

Class A Wild Trout Fisheries

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

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions are addressed by DEP in this fact sheet.

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
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
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
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	33.0	XXX	66	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	11.0	XXX	22	2/month	8-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite

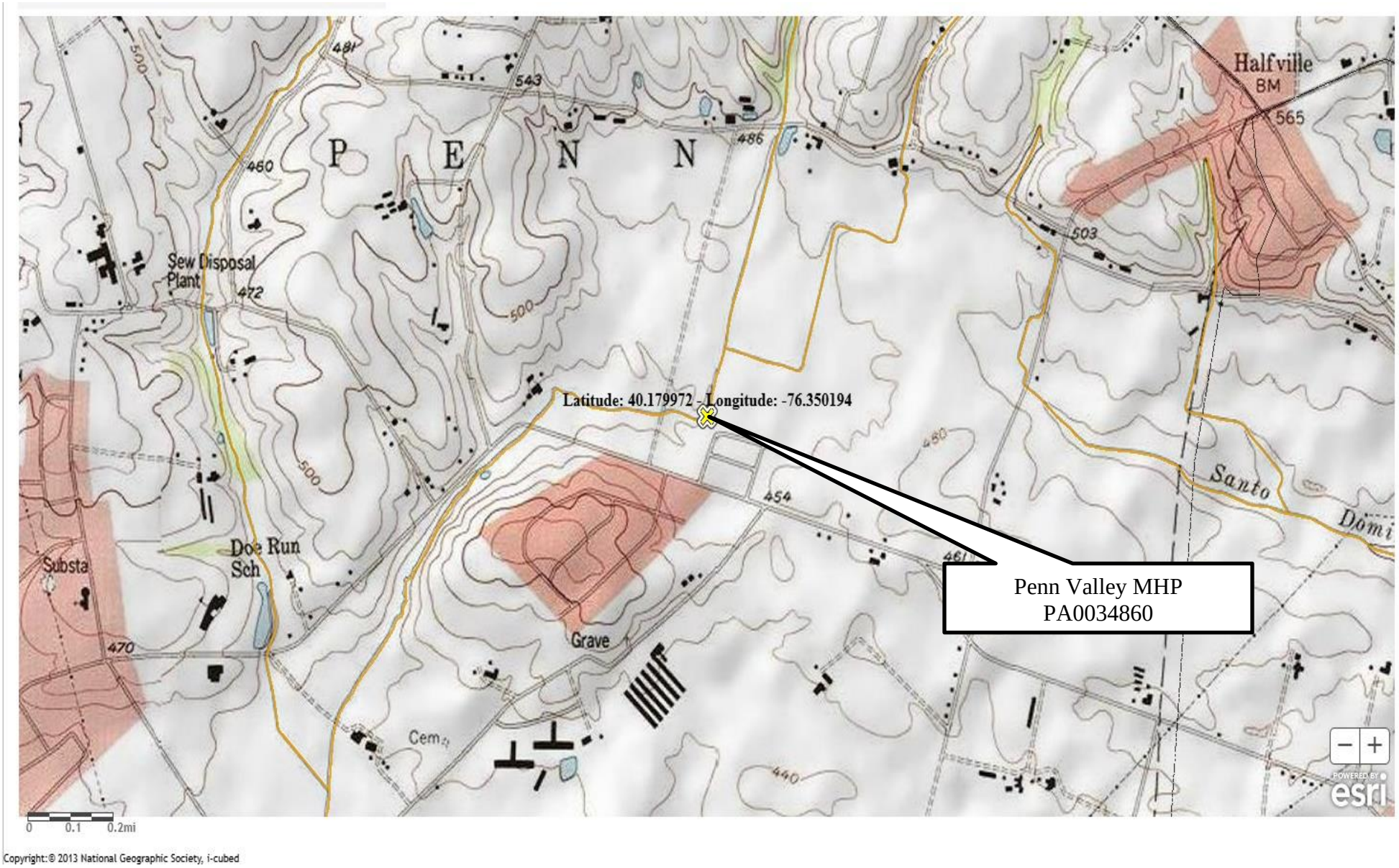
Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

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		
Total Phosphorus	Report	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite
Total Phosphorus (Total Load, lbs)	XXX	67 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: Outfall 001

Other Comments: None

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:


Latitude: 40.179972 , Longitude: -76.350194
Penn Valley MHP
PA0034860
Halfville
BM
565
P E N N
Sew Disposal Plant
Doe Run Sch
Substa
Grave
Cem
Santo
0 0.1 0.2mi
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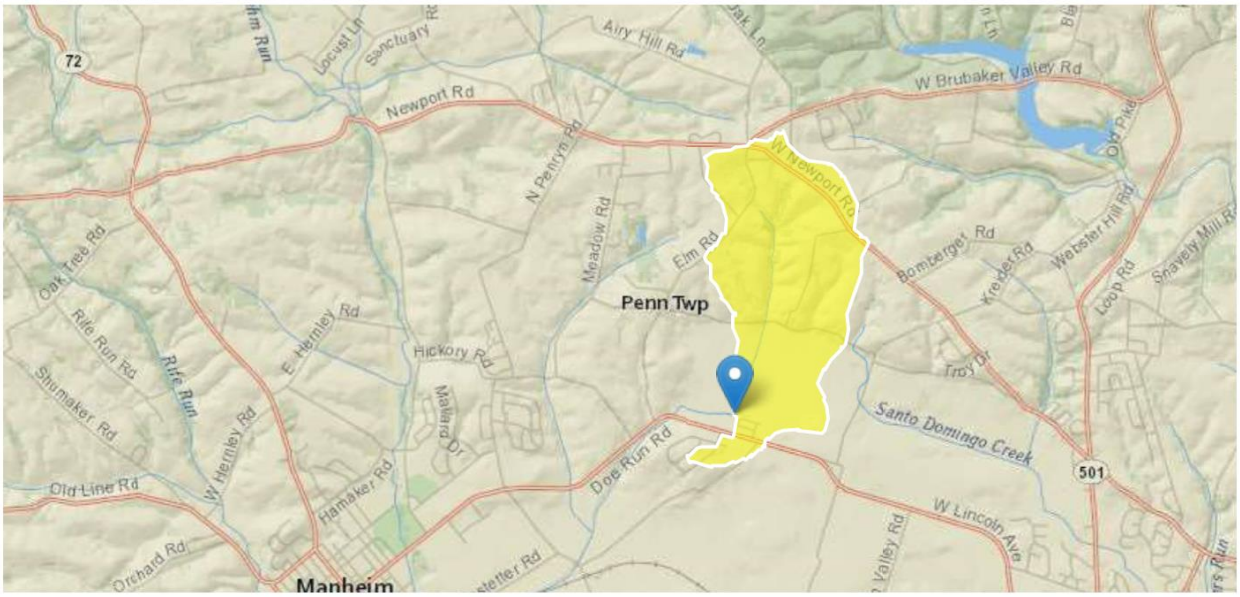
Penn Valley MHP PA0034860 Outfall 001

Region ID: PA
Workspace ID: PA20250219165103171000
Clicked Point (Latitude, Longitude): 40.17982, -76.35043
Time: 2025-02-19 11:51:29 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	3.0969	degrees
DRNAREA	Area that drains to a point on a stream	1.36	square miles
ROCKDEP	Depth to rock	4.4	feet
URBAN	Percentage of basin with urban development	2.0882	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	3.0969	degrees	1.7	6.4
DRNAREA	Drainage Area	1.36	square miles	4.78	1150
ROCKDEP	Depth to Rock	4.4	feet	4.13	5.21

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
URBAN	Percent Urban	2.0882	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	0.119	ft^3/s
30 Day 2 Year Low Flow	0.18	ft^3/s
7 Day 10 Year Low Flow	0.041	ft^3/s
30 Day 10 Year Low Flow	0.0657	ft^3/s
90 Day 10 Year Low Flow	0.136	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: 4.27.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Penn Valley MHP PA0034860 RMI = 1.4

Region ID: PA
Workspace ID: PA20250219165356878000
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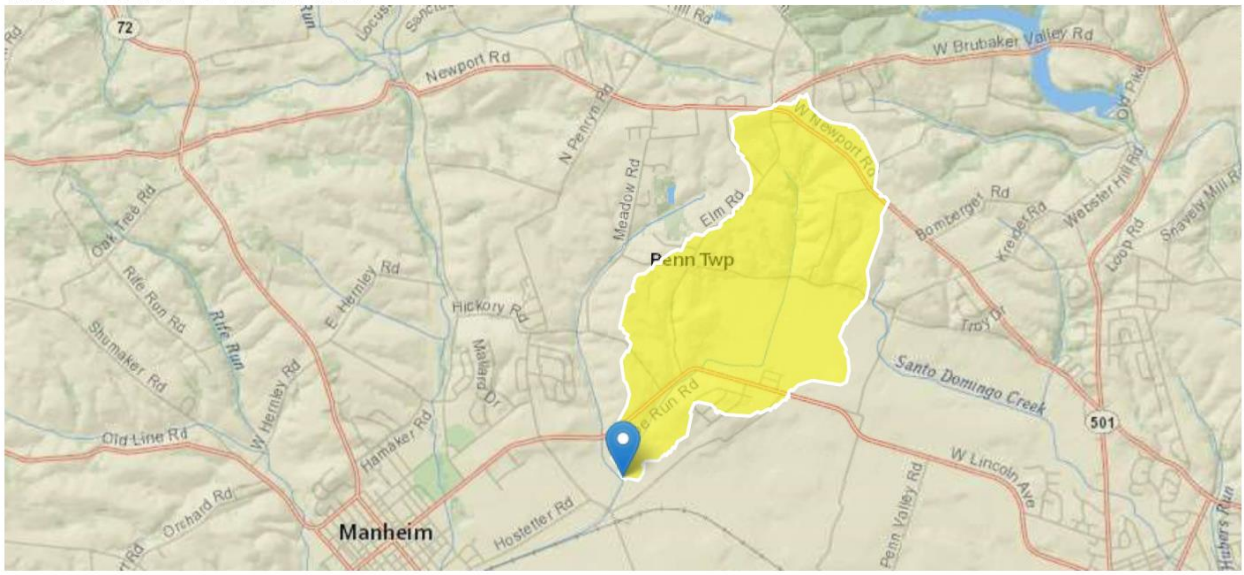
Time: 2025-02-19 11:54:24 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	3.247	degrees
DRNAREA	Area that drains to a point on a stream	2.38	square miles
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	1.4906	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	3.247	degrees	1.7	6.4
DRNAREA	Drainage Area	2.38	square miles	4.78	1150
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	1.4906	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	0.38	ft^3/s
30 Day 2 Year Low Flow	0.522	ft^3/s
7 Day 10 Year Low Flow	0.153	ft^3/s
30 Day 10 Year Low Flow	0.219	ft^3/s
90 Day 10 Year Low Flow	0.4	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: 4.27.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

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
07G	7999	Trib 07999 to Chickies Creek	**2.800**	429.00	1.36	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	0.100	0.00	0.16	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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
Penn Valley MHP	PA0034860	0.0110	0.0110	0.0110	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

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
07G	7999	Trib 07999 to Chickies Creek	**1.400**	408.00	2.38	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	0.100	0.00	0.28	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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
		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	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07G	7999	Trib 07999 to Chickies Creek

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												
2.800	0.16	0.00	0.16	.017	0.00284	.392	6.36	16.22	0.07	1.204	20.48	7.00
Q1-10 Flow												
2.800	0.10	0.00	0.10	.017	0.00284	NA	NA	NA	0.06	1.501	20.71	7.00
Q30-10 Flow												
2.800	0.22	0.00	0.22	.017	0.00284	NA	NA	NA	0.08	1.028	20.36	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07G	7999	Trib 07999 to Chickies Creek

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.800	Penn Valley MHP	15.8	50	15.8	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.800	Penn Valley MHP	1.84	25	1.84	25	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)		
2.80	Penn Valley MHP	25	25	25	25	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07G	7999	Trib 07999 to Chickies Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.800	0.011	20.481	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
6.358	0.392	16.225	0.071
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.21	0.532	2.40	0.726
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.931	21.117	Owens	5
Reach Travel Time (days)			
1.204			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.120	3.94	2.20	8.17
0.241	3.69	2.02	8.17
0.361	3.46	1.85	8.17
0.482	3.24	1.69	8.17
0.602	3.03	1.55	8.17
0.723	2.84	1.42	8.17
0.843	2.66	1.30	8.17
0.963	2.49	1.19	8.17
1.084	2.33	1.09	8.17
1.204	2.19	1.00	8.17

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07G	7999	Trib 07999 to Chickies Creek

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)
2.800	Penn Valley MHP	PA0034860	0.011	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5