Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0217816**
Facility Type	**Non-Municipal**	APS ID	**1058968**
Major / Minor	**Minor**	Authorization ID	**1388709**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Lambi Communities SG LLC**	Facility Name	**Sunnydale Gardens MHP STP**
Applicant Address	155 Jones Street Ext.	Facility Address	Lambie Road
	Scottdale, PA 15683		Scottdale, PA 15683
Applicant Contact	Terrance G. Lambie, Jr.	Facility Contact	Same as Applicant
Applicant Phone	(724) 984-7418	Facility Phone	Same as Applicant
Client ID	349173	Site ID	482955
Ch 94 Load Status	Not Overloaded	Municipality	East Huntingdon Township
Connection Status	No Limitations	County	Westmoreland
Date Application Received	February 28, 2022	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Application for the Renewal of a NPDES permit for the discharge of treated Sewage.

Summary of Review

The Applicant has applied for a renewal of NPDES Permit No. PA0217816, which was previously issued by the Department on August 16, 2017. That permit expired on August 31, 2022.

WQM Permit No. 6598404 was issued on June 2, 1998, authorizing the construction of an STP to treat an annual average design flow of 0.026 MGD.

The STP is an extended aeration facility consisting of aeration tank, final clarifier, chlorination, and dechlorination.

The receiving stream, UNT to Jacobs Creek (dry stream), is currently classified as a WWF, located in State Watershed No. 19-D.

The Applicant has complied with Act 14 Notifications and no comments were received.

Changes since the last permit include:

- A WQBEL Dissolved Oxygen limit of 5.0 mg/L (Inst. Min.)
- Revised seasonal Ammonia-Nitrogen WQBELs of 2.06 & 3.80 mg/L (Avg. Monthly)
- Addition of *E.Coli* monitoring (IMAX)

Sludge use and disposal description and location(s): Application data indicates that a total of 0.649 dry tons of sewage sludge/biosolids have been produced/wasted in 2021. They also indicated that the facility did not receive additional sludge

Approve	Deny	Signatures	Date
X		William C. Mitchell, E.I.T. / Project Manager	March 7, 2025
X		Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	March 10, 2025

Summary of Review

from other sources and that none of sewage sludge/biosolids produced by this facility is not being managed under a beneficial use permit. Sewage Sludge is hauled to a regional WWTP for processing/disposal.

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)	.026
Latitude	40º 7' 1.00"	Longitude	-79º 33' 58.00"
Quad Name	Connellsville	Quad Code	1809
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Jacobs Creek (WWF)	Stream Code	37938
NHD Com ID	69914863	RMI	0.75
Drainage Area	0.57	Yield (cfs/mi^2)	0.00705
Q_{7-10} Flow (cfs)	0.00402	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1078	Slope (ft/ft)	0.01433
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	NONE	Exceptions to Criteria	NONE
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, ORGANIC ENRICHMENT, PH		
Source(s) of Impairment	ACID MINE DRAINAGE, ON-SITE TREATMENT SYSTEMS (SEPTIC SYSTEMS AND SIMILAR DECENTRALIZED SYSTEMS)		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake		Municipal Authority of Westmoreland County - McKeesport	
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	510
PWS RMI	1.3	Distance from Outfall (mi)	

Changes Since Last Permit Issuance: Drainage Area, Q7/10 Flow, Elevation, Yield, and Slope were updated for modeling purposes.

Other Comments: N/A

Treatment Facility Summary

Treatment Facility Name: Sunnydale Gardens MHP STP

WQM Permit No.	Issuance Date
6598404	06/02/1998

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Extended Aeration	Chlorine With Dechlorination	0.026

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.026		Not Overloaded	Sludge Holding Tank	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: N/A

Compliance History

Operations Compliance Check Summary Report

Facility: SUNNYDALE GARDENS MHP STP

NPDES Permit No.: PA0217816

Compliance Review Period: 2/1/20-2/27/25

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
10/11/2023	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted
06/02/2023	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted
01/03/2023	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted
02/15/2022	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted
02/14/2022	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted
12/20/2021	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted

Violation Summary:

VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
10/11/2023	92A.44	NPDES - Violation of effluent limits in Part A of permit	10/11/2023
06/02/2023	92A.62	NPDES - Failure to pay annual fee	06/15/2023
01/03/2023	302.202	Operator Certification - Failure to submit annual system fee	12/20/2023

02/15/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit	01/26/2024
02/15/2022	92A.61(F)2	NPDES - Failure to maintain records for at least 3 years	01/26/2024
12/20/2021	302.202	Operator Certification - Failure to submit annual system fee	01/13/2022

Open Violations by Client ID:
No open violations for Client ID 349173

Enforcement Summary:

ENF TYPE	ENF TYPE DESC	EXECUTED DATE	VIOLATIONS	AMOUNT RECEIVED	ENF FINALSTATUS	ENF CLOSED DATE
CACP	Consent Assessment of Civil Penalty	06/06/2023	92A.44	$11,000.00	Comply/Closed	10/11/2023
NOV	Notice of Violation	06/02/2023	92A.62		Comply/Closed	06/15/2023
NOV	Notice of Violation	01/03/2023	302.202		Comply/Closed	12/20/2023
NOV	Notice of Violation	12/20/2021	302.202		Comply/Closed	01/13/2022

Effluent Violation Summary:

MON_PD	PARAMETER	REPORTED VALUE	PERMIT LIMIT	UNIT	STAT_BASE_CODE
Oct-21	Ammonia-Nitrogen	10.4	3.0	mg/L	Average Monthly
Oct-21	Ammonia-Nitrogen	17.5	6.0	mg/L	Instantaneous Maximum
Sep-21	Ammonia-Nitrogen	16.4	3.0	mg/L	Average Monthly
Sep-21	Ammonia-Nitrogen	32.6	6.0	mg/L	Instantaneous Maximum
Sep-21	Total Suspended Solids	63.0	30.0	mg/L	Average Monthly
Sep-21	Total Suspended Solids	86.0	60.0	mg/L	Instantaneous Maximum
Jul-21	Ammonia-Nitrogen	13.6	6.0	mg/L	Instantaneous Maximum
Jul-21	Ammonia-Nitrogen	6.6	3.0	mg/L	Average Monthly

Mar-21	Ammonia-Nitrogen	18.8	18.0	mg/L	Instantaneous Maximum
Sep-20	Fecal Coliform	439	200	No./100 ml	Geometric Mean

Compliance Status: Facility is generally in compliance with no open violations or pending enforcements. The 2023 CACP accounted for exceedances through the October 2021 monitoring period.

Completed by: Amanda Illar **Completed date:** 2/27/25

Compliance History

DMR Data for Outfall 001 (from February 1, 2024 to January 31, 2025)

Parameter	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24
Flow (MGD) Average Monthly	0.015	0.014	0.0147	0.013	0.015	0.013	0.014	0.0141	0.015	0.015	0.014	0.015
Flow (MGD) Daily Maximum	0.017	0.017	0.0173	0.0144	0.017	0.014	0.017	0.00173	0.017	0.017	0.017	0.017
pH (S.U.) Instantaneous Minimum	6.9	6.9	6.8	6.8	6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.9
pH (S.U.) Instantaneous Maximum	7.3	7.3	7.3	7.3	7.8	7.4	7.3	7.3	7.3	7.3	7.3	7.3
DO (mg/L) Instantaneous Minimum	4.5	5.4	5.2	5.1	5.3	5.1	5.1	5.0	5.1	5.2	5.4	5.4
TRC (mg/L) Average Monthly	0.15	0.16	0.16	0.16	0.16	0.16	0.17	0.15	0.17	0.16	0.18	0.15
TRC (mg/L) Instantaneous Maximum	0.25	0.26	0.29	0.27	0.28	0.28	0.27	0.28	0.28	0.30	0.28	0.26
CBOD5 (mg/L) Average Monthly	3.5	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.4
CBOD5 (mg/L) Instantaneous Maximum	4.0	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	7.8
TSS (mg/L) Average Monthly	11.6	20.2	5.6	6.4	1.6	3.0	24.2	6.4	3.2	6.4	12.2	21.8
TSS (mg/L) Instantaneous Maximum	14.8	24.0	7.6	6.4	1.6	4.4	45.3	11.2	3.2	11.2	13.6	28.8
Fecal Coliform (No./100 ml) Geometric Mean	3.5	4.6	1.8	1.0	1.0	1.0	1.0	2	1.0	3.5	1.0	21
Fecal Coliform (No./100 ml) Instantaneous Maximum	4.0	5.2	3.1	1.0	1.0	1.0	1.0	4	1.0	12.2	1.0	110

Total Nitrogen (mg/L) Daily Maximum		14.01										
Ammonia (mg/L) Average Monthly	0.1	0.1	0.1	0.58	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ammonia (mg/L) Instantaneous Maximum	0.1	0.1	0.1	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Phosphorus (mg/L) Daily Maximum		3.9										

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.026
Latitude 40º 7' 1.00" **Longitude** -79º 33' 58.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Comments: The discharge was evaluated using WQM 7.0 Version 1.1 (Attachments 2 & 3) to evaluate $CBOD_5$, Ammonia-Nitrogen, and Dissolved Oxygen. The modeling results show the above technology based effluent limitations are appropriate for $CBOD_5$, TSS, pH, and Fecal Coliform.

To determine applicability of standards associated with dry streams, application managers will generally consider the following:

1. If the stream flow (Q7-10) to wastewater flow (design flow) ratio is less than 3:1, proceed to paragraph 2, otherwise skip to the next section.

2. For new or expanding discharges, apply the more stringent treatment requirements in DEP's Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers (391-2000-014).

3. For existing discharges, if the more stringent treatment requirements cannot be achieved, do not apply the standards in DEP guidance (391-2000-014) unless the receiving stream is impaired, and the point source discharge contributes to the impairment. If this is the case, apply the more stringent treatment requirements and provide a schedule to meet final limitations not exceeding three years in the draft permit. Do not approve design flow increases without applying the more stringent treatment requirements where the discharge meets the criteria in the guidance for a dry stream.

DMR data confirms the existing facility cannot meet the more stringent treatment requirements discussed in DEP guidance (391-2000-014) and the receiving stream is not impaired. Do not approve design flow increases without applying the more stringent treatment requirements where the discharge meets the criteria in the guidance for a dry stream (Section I.C, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits).

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen (May 1 to Oct 31)	2.06	Average Monthly	WQM 7.0 Version 1.1

Ammonia-Nitrogen (Nov 1 to Apr 30)	3.8	Average Monthly	WQM 7.0 Version 1.1
Dissolved Oxygen	5.0	Ins Min	WQM 7.0 Version 1.1
Total Residual Chlorine	0.02	Average Monthly	TRC_CALC

DMR data indicates that the facility can comply with the revised Ammonia-Nitrogen & Dissolved Oxygen limits, but it cannot comply with the revised TRC limit. They will be given 12 months to comply with the more restrictive TRC limit.

Best Professional Judgment (BPJ) Limitations

Comments: N/A

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 (l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

The facility is not seeking to revise the previously permitted effluent limits.

Additional Considerations

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Document No. 386-0400-001).

Sewage dischargers will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with a monitoring frequency of 1/year for design flows 0.002 – 0.05 MGD per 25 Pa. Code § 92a.061, and Section I.A, Note 12, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits.

Nutrient monitoring is required to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). The discharge is to waters not impaired for nutrients. A 1/year monitoring requirement for Total N & Total P has been added to the permit per 25 Pa. Code § 92a.061, and Section I.A, Note 7 & 8, SOP No. BCW-PMT-033, Establishing Effluent Limitations for Individual Sewage Permits.

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 12th Month from Permit Effective 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		
TRC	XXX	XXX	XXX	0.36	XXX	0.85	1/day	Grab

Compliance Sampling Location: Outfall 001

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: 13th Month 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		
TRC	XXX	XXX	XXX	0.02	XXX	0.07	1/day	Grab

Compliance Sampling Location: Outfall 001

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	1/week	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
CBOD5	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	Grab
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
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	3.8	XXX	7.6	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	2.06	XXX	4.12	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

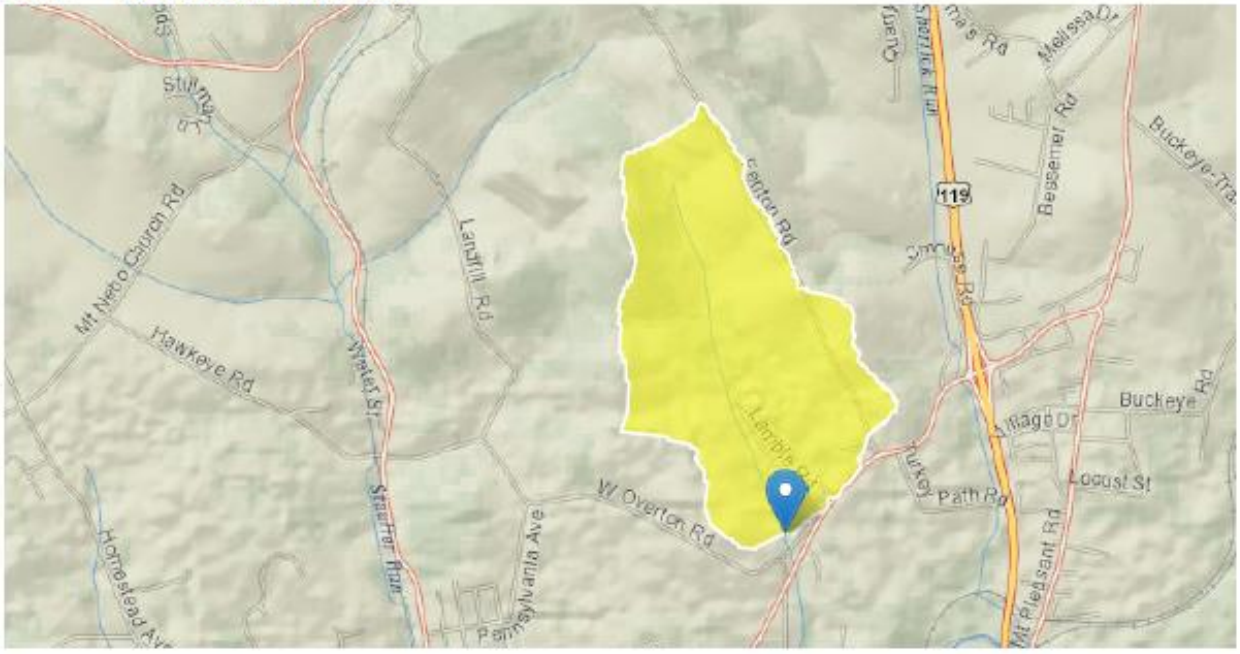
Compliance Sampling Location: Outfall 001

Other Comments: N/A

Attachment 1 – USGS StreamStats Report

PA0217816_StreamStats Report

Region ID: PA
Workspace ID: PA20250305164105221000
Clicked Point (Latitude, Longitude): 40.11701, -79.56629
Time: 2025-03-05 11:41:35 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.57	square miles
ELEV	Mean Basin Elevation	1156	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.57	square miles	2.26	1400
ELEV	Mean Basin Elevation	1156	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

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 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0143	ft^3/s
30 Day 2 Year Low Flow	0.0283	ft^3/s
7 Day 10 Year Low Flow	0.00402	ft^3/s
30 Day 10 Year Low Flow	0.00895	ft^3/s
90 Day 10 Year Low Flow	0.0187	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: 4.28.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Attachment 2 – WQM 7.0 Version 1.1 – Summer Period

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
19D	37938	Trib 37938 of Jacobs Creek	0.750	1078.00	0.57	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	0.007	0.00	0.00	0.000	0.000	10.0	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
Sunnydale MHP	PA0217816	0.0000	0.0000	0.0260	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.38	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
19D	37938	Trib 37938 of Jacobs Creek	0.010	1022.00	0.99	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	0.007	0.00	0.00	0.000	0.000	10.0	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
		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
19D	37938	Trib 37938 of Jacobs 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												
0.750	0.00	0.00	0.00	.0402	0.01433	.306	3.19	10.43	0.05	0.999	20.45	7.00
Q1-10 Flow												
0.750	0.00	0.00	0.00	.0402	0.01433	NA	NA	NA	0.04	1.018	20.30	7.00
Q30-10 Flow												
0.750	0.01	0.00	0.01	.0402	0.01433	NA	NA	NA	0.05	0.981	20.60	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
19D	37938	Trib 37938 of Jacobs 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
0.750	Sunnydale MHP	16.35	17.39	16.35	17.39	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
0.750	Sunnydale MHP	1.82	2.06	1.82	2.06	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)		
0.75	Sunnydale MHP	25	25	2.06	2.06	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19D	37938	Trib 37938 of Jacobs Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.750	0.026	20.454	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.193	0.306	10.433	0.045
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
22.91	1.472	1.88	0.725
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.307	24.644	Owens	5
Reach Travel Time (days)			
0.999			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.100	19.72	1.74	6.81
0.200	16.97	1.62	7.19
0.300	14.60	1.51	7.45
0.400	12.56	1.40	7.66
0.500	10.81	1.31	7.85
0.599	9.30	1.21	8.01
0.699	8.01	1.13	8.15
0.799	6.89	1.05	8.17
0.899	5.93	0.98	8.17
0.999	5.10	0.91	8.17

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19D	37938	Trib 37938 of Jacobs 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)
0.750	Sunnydale MHP	PA0217816	0.000	CBOD5	25		
				NH3-N	2.06	4.12	
				Dissolved Oxygen			5

Attachment 3 – WQM 7.0 Version 1.1 – Winter Period

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
	19D	37938	Trib 37938 of Jacobs Creek	**0.750**	1078.00	0.57	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	0.014	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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
Sunnydale MHP	PA0217816	0.0000	0.0000	0.0260	0.000	15.00	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	12.80	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
19D	37938	Trib 37938 of Jacobs Creek	**0.010**	1022.00	0.99	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	0.014	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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
		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
19D	37938	Trib 37938 of Jacobs 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												
0.750	0.01	0.00	0.01	.0402	0.01433	.311	3.27	10.53	0.05	0.952	13.33	7.00
Q1-10 Flow												
0.750	0.01	0.00	0.01	.0402	0.01433	NA	NA	NA	0.05	0.985	13.87	7.00
Q30-10 Flow												
0.750	0.01	0.00	0.01	.0402	0.01433	NA	NA	NA	0.05	0.921	12.86	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
19D	37938	Trib 37938 of Jacobs 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
0.750	Sunnydale MHP	24.1	27.19	24.1	27.19	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
0.750	Sunnydale MHP	2.99	3.8	2.99	3.8	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)		
0.75	Sunnydale MHP	25	25	3.8	3.8	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19D	37938	Trib 37938 of Jacobs Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.750	0.026	13.335	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
3.269	0.311	10.526	0.048
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
21.17	1.459	3.17	0.419
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
5.466	20.928	Owens	5
Reach Travel Time (days)			
0.952			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.095	19.11	3.04	8.22
0.190	17.26	2.93	8.73
0.285	15.58	2.81	8.93
0.381	14.07	2.70	9.07
0.476	12.70	2.60	9.19
0.571	11.46	2.49	9.30
0.666	10.35	2.40	9.40
0.761	9.35	2.30	9.42
0.856	8.44	2.21	9.42
0.952	7.62	2.13	9.42

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19D	37938	Trib 37938 of Jacobs 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)
0.750	Sunnydale MHP	PA0217816	0.000	CBOD5	25		
				NH3-N	3.8	7.6	
				Dissolved Oxygen			4

Attachment 4 – TRC_CALC

PA0217816_TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.00402	= Q stream (cfs)	0.5	= CV Daily
0.026	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	0.051	1.3.2.iii	WLA cfc =	0.042
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.019	5.1d	LTA_cfc =	0.024

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.023	AFC
		INST MAX LIMIT (mg/l) =	0.076	

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)**