pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0031291**
Facility Type	**Non-Municipal**	APS ID	**1026356**
Major / Minor	**Minor**	Authorization ID	**1332418**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**YMCA Of Greater Pittsburgh**	Facility Name	**Deer Valley YMCA Camp**
Applicant Address	680 Anderson Drive, Suite 400	Facility Address	254 Deer Valley Drive
	Pittsburgh, PA 15220		Fort Hill, PA 15540-2131
Applicant Contact	Christopher Willitts	Facility Contact	Timothy Hostetler
Applicant Phone	412-227-5316	Facility Phone	814-662-4031
Client ID	4793	Site ID	241474
Ch 94 Load Status	Not Overloaded	Municipality	Elk Lick Township
Connection Status	No Limitations	County	Somerset
Date Application Received	October 30, 2020	EPA Waived?	Yes
Date Application Accepted	November 3, 2020	If No, Reason	

Purpose of Application: Application for renewal of an existing NPDES Permit for treated sewage.

Summary of Review

The permittee has applied for a renewal of NPDES Permit No. PA0031291. NPDES Permit No. PA00319291 was previously issued by the PA Department of Environmental Protection (DEP) on May 25, 2016. That permit expired on May 31, 2021. The permit was submitted in a timely manner, and therefore was granted an administrative extension.

Sewage from this facility is treated with two aerated lagoons in parallel followed by chlorination and dechlorination prior to discharge to Cove Run.

On May 2, 2018, an amendment was issued to the associated WQM Permit No. 9248-S which approved a change in treatment type from septic tank, dosing tank, sand filter, and chlorination to two aerated lagoons in parallel followed by chlorination and dechlorination. The lagoons began operating in June 2019.

The applicant is currently enrolled in and will continue to use eDMR.

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*

Approve	Deny	Signatures	Date
X		Stephanie Conrad / Environmental Engineering Specialist	August 15, 2021
X		Christopher Kriley, P.E. / Environmental Program Manager	August 17, 2021

Summary of Review
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)	.015
Latitude	39º 47' 45.40"	Longitude	-79º 12' 13.00"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Cove Run (CWF)	Stream Code	38828
NHD Com ID	69922107	RMI	0.33
Drainage Area	2.07	Yield (cfs/mi^2)	0.016
Q_{7-10} Flow (cfs)	0.0332	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-F	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake	Ohiopyle Borough Municipal Waterworks		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Treatment Facility Summary

Treatment Facility Name: Deer Valley YMCA Camp

WQM Permit No.	Issuance Date
9248-S	March 30, 1959

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Aerated Lagoon With Solids Removal	Hypochlorite	0.015

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.030	38	Not Overloaded	Sludge Lagoon	Other WWTP

Changes Since Last Permit Issuance:

Other Comments:

Compliance History	
Summary of DMRs:	**Between July 2016 and July 2021, the facility has complied with submittal of Discharge Maintenance Reports. During the review period, two violations (ID 833926 and772060) were issued for violation of effluent limits and one violation (ID 790943) for failure to pay the annual fee. Each violation resulted in a Notice of Violation (Enf ID 369709, 348579, and 356032, respectively). All three Notice of Violations have since been closed. Numerous effluent violations occurred during 2018. In that year, an amendment to the associated WQM Permit No. 9248-S which changed the treatment facility type to two aerated lagoons in series. Since 2018, the effluent violations have primarily been for CBOD5, TSS, and TRC. Additional exceedances for pH and DO also occurred.**
Summary of Inspections:	**Between July 2016 and July 2021, the facility received two compliance evaluations, one administrative/file review, and three routine/partial inspections. The 2016 (ID 253441) and 2018 (2805603) compliance evaluations both resulted in violations ad did the 2017 file review (ID 2612685).**

Other Comments:

Compliance History

DMR Data for Outfall 001 (from June 1, 2020 to May 31, 2021)

Parameter	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20
Flow (MGD) Average Monthly	0.009	0.005	0.008	0.0028	0.003	0.005	0.003	0.003	0.003	0.0019	0.002	0.0007
pH (S.U.) Minimum	7.03	7.05	7.01	7.0	7.05	7.14	7.33	7.0	7.17	7.05	6.78	6.94
pH (S.U.) Maximum	8.04	8.91	8.61	8.11	7.58	7.67	7.45	7.62	7.8	7.73	7.53	7.67
DO (mg/L) Minimum	5.17	8.3	9.11	8.91	7.78	9.08	8.34	7.58	8.41	8.8	7.86	6.85
TRC (mg/L) Average Monthly	0.16	0.18	0.37	0.11	0.32	0.33	0.28	0.74	0.41	0.73	0.49	0.1
TRC (mg/L) Instantaneous Maximum	0.55	0.7	1.39	0.23	0.84	0.55	0.46	1.48	1.47	1.56	1.6	0.67
CBOD5 (mg/L) Average Monthly	10.85	7.27	< 9.9	6.67	4.51	7.54	< 3.18	< 3	< 5	3.13	< 5	< 7.7
CBOD5 (mg/L) Instantaneous Maximum	14.5	7.63	13.7	7.63	6.02	8.54	3.36	< 3	< 6	3.25	< 6	12.3
TSS (mg/L) Average Monthly	24	13	5	< 5	7	10	8	< 6	< 6	< 5	< 5	< 5
TSS (mg/L) Instantaneous Maximum	25	17	5	< 5	7	11	8	6	6	< 5	< 5	< 5
Fecal Coliform (CFU/100 ml) Geometric Mean	2	< 1	1	1	< 1	3	< 1	< 1	< 1	< 1	< 1	< 1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2	1	1	2	< 1	3	< 1	< 1	< 1	< 1	1	< 1
Total Nitrogen (mg/L) Daily Maximum						E						
Ammonia (mg/L) Average Monthly	< 0.1							0.996	< 0.99	0.904	1.306	< 0.8
Ammonia (mg/L) Instantaneous Maximum	< 0.8							1.19	1.17	1.09	1.80	< 0.8

Total Phosphorus (mg/L) Daily Maximum						E						

Compliance History

Effluent Violations for Outfall 001, from: July 1, 2020 To: May 31, 2021

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	10/31/20	Avg Mo	0.74	mg/L	0.5	mg/L
TRC	08/31/20	Avg Mo	0.73	mg/L	0.5	mg/L
CBOD5	05/31/21	Avg Mo	10.85	mg/L	10	mg/L
TSS	05/31/21	Avg Mo	24	mg/L	10	mg/L
TSS	04/30/21	Avg Mo	13	mg/L	10	mg/L
TSS	05/31/21	IMAX	25	mg/L	20	mg/L

Summary of Inspections:

Other Comments:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .015
Latitude 39º 47' 45.40" **Longitude** -79º 12' 13.00"
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:

Previous effluent limitations were based on 1994 pollution report which can be found on microfiche for NPDES Permit No. PA0031291 issued June 21, 1994. Based on new information about the receiving waters and point of first use, this facility was re-modeled in WQM 7.0. The previous effluent limitations for this facility were developed based on applicable regulations, policies, procedures and guidelines

Water Quality-Based Limitations

The effluent was modeled using WQM 7.0 to evaluate the CBOD5, Ammonia Nitrogen and Dissolved Oxygen parameters. Modeling confirmed that previous effluent limitations are appropriate for CBOD5, however, water quality-based limits are necessary for Ammonia-Nitrogen.

Total Residual Chlorine was modeled using the TRC Spreadsheet, which verified that the BAT limits are appropriate for this facility.

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen May-October	4.0	Average Monthly	WQM 7.0
Ammonia-Nitrogen November- April	12.0	Average Monthly	WQM 7.0

The Ammonia-Nitrogen limits for this facility are becoming more restrictive. Based on eDMR data from 2020, this facility should be able to meet the more stringent limits.

Best Professional Judgment (BPJ) Limitations

A Dissolved Oxygen minimum limitation of 4.0 mg/L will be implemented based on the standard in 25 PA Code Chapter 93 and best professional judgment.

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

Sewage discharges 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 and < 0.05 MGD.

For pH, Dissolved Oxygen (DO) and TRC, a monitoring frequency 1/day has been imposed. In general, less frequent monitoring may be established only when the permittee demonstrates that there will be no discharge on days where monitoring is not required.

The receiving stream is not impaired for nutrients, therefore, annual sampling for nitrogen and phosphorus will be imposed per 25 PA Code §92a.6.

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. Please note that Monitoring Requirements were changed for Flow to 1/week Metered to be consistent with the guidance.

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" (362-0400-001), 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)	0.015	XXX	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	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	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 Nov 1 - Apr 30	XXX	XXX	XXX	15.0	XXX	30.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	5.5	XXX	11.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall #001

Other Comments:

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
19F	38828	COVE RUN	0.330	2620.00	2.07	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	0.016	0.00	0.00	0.000	0.000	10.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Cove Run	PA0031291	0.0150	0.0000	0.0000	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	10.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	9.01	0.00	0.00
NH3-N	15.00	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
19F	38828	COVE RUN	0.010	2600.00	2.24	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	0.016	0.00	0.00	0.000	0.000	10.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	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	10.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	9.01	0.00	0.00
NH3-N	15.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19F	38828	COVE 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												
0.330	0.03	0.00	0.03	.0232	0.01184	.319	4.59	14.37	0.04	0.509	20.00	7.00
Q1-10 Flow												
0.330	0.02	0.00	0.02	.0232	0.01184	NA	NA	NA	0.03	0.582	20.00	7.00
Q30-10 Flow												
0.330	0.05	0.00	0.05	.0232	0.01184	NA	NA	NA	0.04	0.457	20.00	7.00

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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 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19F	38828	COVE RUN

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.330	Cove Run	9.67	18.51	9.67	18.51	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
0.330	Cove Run	1.92	5.64	1.92	5.64	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)		
0.33	Cove Run	10	10	5.64	5.64	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19F	38828	COVE RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.330	0.015	20.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.591	0.319	14.370	0.038
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
5.30	1.055	2.32	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.946	20.173	Owens	6
Reach Travel Time (days)			
0.509			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.051	5.02	2.24	7.88
0.102	4.76	2.16	8.23
0.153	4.51	2.09	8.24
0.204	4.27	2.01	8.24
0.255	4.05	1.94	8.24
0.306	3.84	1.88	8.24
0.356	3.64	1.81	8.24
0.407	3.45	1.75	8.24
0.458	3.27	1.69	8.24
0.509	3.10	1.63	8.24

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19F	38828	COVE RUN

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
0.330	Cove Run	PA0031291	0.015	CBOD5	10		
				NH3-N	5.64	11.28	
				Dissolved Oxygen			4

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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
19F	38828	COVE RUN	0.330	2620.00	2.07	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	0.032	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
Cove Run	PA0031291	0.0150	0.0000	0.0000	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	10.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	0.00	0.00
NH3-N	15.00	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
19F	38828	COVE RUN	0.010	2600.00	2.24	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	0.032	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	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	10.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	0.00	0.00
NH3-N	15.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19F	38828	COVE 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												
0.330	0.07	0.00	0.07	.0232	0.01184	.344	5.23	15.23	0.05	0.393	7.59	7.00
Q1-10 Flow												
0.330	0.04	0.00	0.04	.0232	0.01184	NA	NA	NA	0.04	0.468	8.54	7.00
Q30-10 Flow												
0.330	0.09	0.00	0.09	.0232	0.01184	NA	NA	NA	0.06	0.344	7.05	7.00

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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 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19F	38828	COVE RUN

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.330	Cove Run	20.59	30	20.59	30	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
0.330	Cove Run	4.08	15	4.08	15	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)		
0.33	Cove Run	10	10	15	15	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19F	38828	COVE RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.330	0.015	7.594	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
5.232	0.344	15.228	0.050
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.08	0.695	3.89	0.269
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
10.302	15.627	Owens	6
Reach Travel Time (days)			
0.393			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.039	4.00	3.85	10.73
0.079	3.92	3.81	10.73
0.118	3.84	3.77	10.73
0.157	3.76	3.73	10.73
0.197	3.69	3.69	10.73
0.236	3.62	3.65	10.73
0.275	3.55	3.61	10.73
0.314	3.48	3.58	10.73
0.354	3.41	3.54	10.73
0.393	3.34	3.50	10.73

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19F	38828	COVE RUN

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
0.330	Cove Run	PA0031291	0.015	CBOD5	10		
				NH3-N	15	30	
				Dissolved Oxygen			4

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Copy of TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.126	= Q stream (cfs)	0.5	= CV Daily
0.015	= 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 =	1.751	1.3.2.iii	WLA cfc =	1.700
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.653	5.1d	LTA_cfc =	0.988

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) =	1.635	

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)

StreamStats Report

Region ID: PA
Workspace ID: PA20210817123325467000
Clicked Point (Latitude, Longitude): 39.79598, -79.20351
Time: 2021-08-17 08:33:44 -0400

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	2.07	square miles
ELEV	Mean Basin Elevation	2916	feet

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.07	square miles	2.26	1400

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
ELEV	Mean Basin Elevation	2916	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]

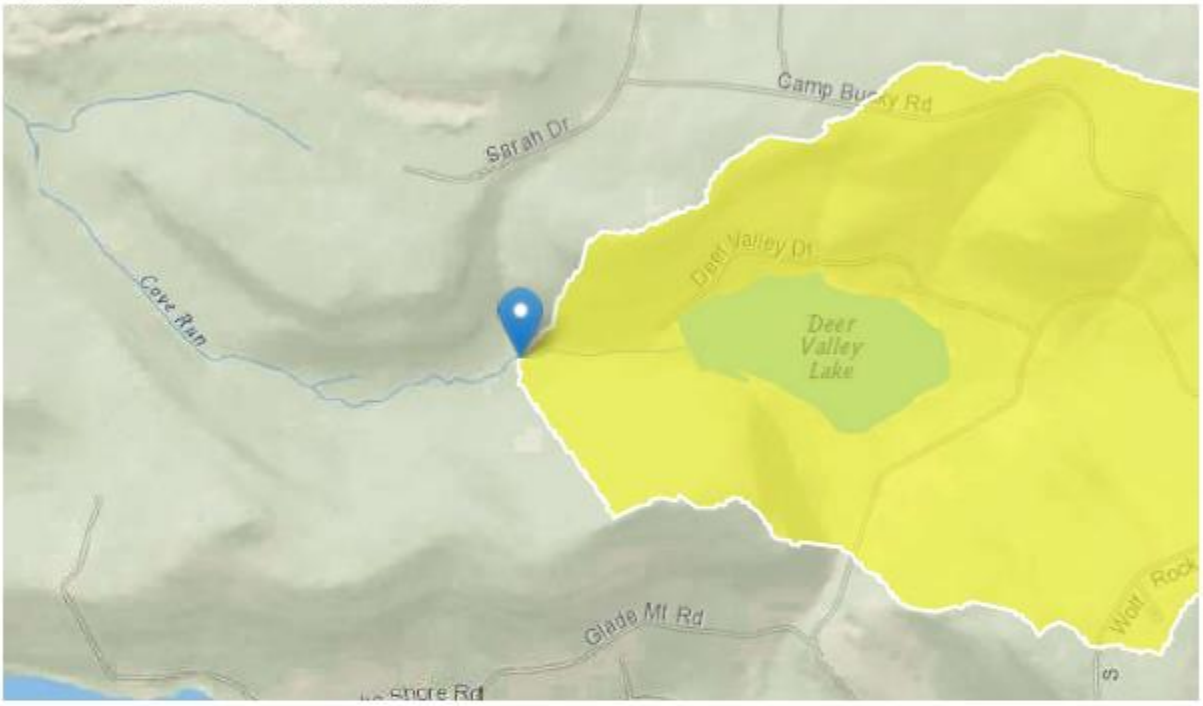
Statistic	Value	Unit
7 Day 2 Year Low Flow	0.135	ft^3/s
30 Day 2 Year Low Flow	0.265	ft^3/s
7 Day 10 Year Low Flow	0.0332	ft^3/s
30 Day 10 Year Low Flow	0.0731	ft^3/s
90 Day 10 Year Low Flow	0.176	ft^3/s

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/)

StreamStats Report

Region ID: PA
Workspace ID: PA20210817123804490000
Clicked Point (Latitude, Longitude): 39.79569, -79.20954
Time: 2021-08-17 08:38:23 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	2.24	square miles
ELEV	Mean Basin Elevation	3600	feet

General Disclaimers

Parameter values have been edited, computed flows may not apply.

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.24	square miles	2.26	1400
ELEV	Mean Basin Elevation	3600	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	0.176	ft^3/s
30 Day 2 Year Low Flow	0.349	ft^3/s
7 Day 10 Year Low Flow	0.0412	ft^3/s
30 Day 10 Year Low Flow	0.092	ft^3/s
90 Day 10 Year Low Flow	0.232	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/)