pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0029050**
Facility Type	**Non-Municipal**	APS ID	**486915**
Major / Minor	**Minor**	Authorization ID	**1298535**

Applicant and Facility Information

Applicant Name	**Pine Forest Camp, Inc.**	Facility Name	**Pine Forest Camp, Inc.**
Applicant Address	1528 Walnut Street, Suite 1900	Facility Address	185 Pine Forest Road
	Philadelphia, PA 19102		Greeley, PA 18425-9703
Applicant Contact	Mitchell Black	Facility Contact	Brad Hampe
Applicant Phone	(267) 639-2488	Facility Phone	(570) 647-6703
Client ID	75188	Site ID	240335
Ch 94 Load Status	Not Overloaded	Municipality	Blooming Grove Township
Connection Status	No Limitations	County	Pike
Date Application Received	December 6, 2019	EPA Waived?	Yes
Date Application Accepted	December 20, 2019	If No, Reason	-

Purpose of Application: Renewal of NPDES permit for discharge of treated sewage.

Summary of Review

The applicant is requesting the renewal of an NPDES permit to discharge up to 0.025 MGD of treated sewage into Lake Greeley, (Taylortown Creek), a High Quality, Cold-Water Fishery, Migratory Fish (HQ-CWF, MF) receiving stream in State Water Plan Basin 1-D (Shohola – Bushkill Creeks). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. This stream segment is not designated as a naturally reproducing trout stream as per PA Fish & Boat Commission. This discharge is not expected to affect public water supplies.

Pine Forest Camp is a seasonal summer youth camp that typically operates during the months of June, July, and August, with small weekend groups during the months of September and October. It utilizes extended aeration through two lagoons in series. The lagoons receive influent starting at the end of May through September. A process flow diagram for the treatment system is located on page 6 of the fact sheet.

Limitations for pH, Total Suspended Solids (TSS), and Fecal Coliform are technology-based and carried over from the previous permit.

Limitations for Dissolved Oxygen (DO), $CBOD_5$, Ammonia-Nitrogen, and Total Phosphorous are water quality-based and carried over from the previous permit. WQM 7.0 modeling did not recommend stricter limitations.

The previous Total Residual Chlorine (TRC) limits were water quality-based limits of 0.72 mg/L average monthly and 2.37 mg/L IMAX. These limits were implemented because they were more stringent than the Best Available Technology (BAT) limits at the time. The BAT limits have since been revised to be more stringent. Per PA Code 92a.47(a)(8), which references 92a.48(b)(2), a monthly average TRC facility-specific BAT effluent limit of 0.5 mg/L and an IMAX limit of 1.6 mg/L is applied to the permit. The TRC Calculation Spreadsheet did not recommend more stringent water quality-based limitations. The permittee will be required to meet the new technology-based Average Monthly limit of 0.5 mg/L starting one year after the

Approve	Deny	Signatures	Date
X		/s/ Allison Seyfried / Environmental Engineering Specialist	January 12, 2022
X		/s/ Amy M. Bellanca, P.E. / Environmental Engineer Manager	1-13-22

Summary of Review

effective date of the permit. eDMR data from the previous year indicates that the facility is significantly under the new technology-based IMAX limit of 1.6 mg/L (eDMR data can be found on page 4 of the fact sheet). Therefore, the IMAX TRC limit will be applied at the permit effective date.

Sewage discharges now require monitoring and reporting for E. Coli. A monitoring frequency of 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD, 1/year for design flows of 0.002 – 0.05 MGD will be utilized.

DRBC Docket No. D-2013-010 CP-2 does not contain more stringent requirements beyond the NPDES permit. The monitoring and reporting for Total Nitrogen, Total Kjeldahl Nitrogen, Nitrate-Nitrite as N, and Total Dissolved Solids has been maintained in this permit. Monitoring/reporting of $CBOD_5$ of the raw sewage influent into the lagoon and the $CBOD_5$ Minimum % Removal (which must be a minimum monthly average of 85%) have been added to the permit.

Monitoring frequencies for all parameters with limitations have been updated to the recommended frequencies found in Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations (Document No. 362-0400-001). The "when discharging" wording in the limit tables were carried over from the previous permit.

There are no representative stream gages in the vicinity of the outfall. The previous permit used USGS StreamStats data to model the discharge. USGS StreamStats was used again for this permit renewal. The same results were produced. For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA, drainage areas were delineated using USGS's StreamStats Interactive Map, and elevations were obtained using the elevation profile feature of StreamStats.

Part C of the permit contains a new requirement; the permittee shall notify the Department's Northeast region Clean Water Monitoring and Compliance section by phone at least 24 hours to commencement of each discharge.

The existing permit expired on May 31, 2020. The renewal application was due on December 3, 2019; it was received on December 6, 2019.

A Water Management System Inspection query indicated that on July 6, 2021 a Compliance Evaluation was performed.

There are no open violations for this client that warrant withholding issuance of this permit.

Sludge use and disposal description and location(s): Per the renewal application, the facility's biosolids were land applied at 'Rorre' (PAG09-2201 – 1.2 dry tons) and 'Sile Bay' (PAG09-2231 – 0.4 dry tons). The application also states that Koberlein Environmental Services may dispose of septic at the Central Wayne Regional Authority and at the Wyoming Valley Sanitary Authority.

DRBC Docket 2013-010 CP-2.pdf

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)	0.025
Latitude	41º 24' 51.82"	Longitude	-75º 1' 17.57"
Quad Name	Rowland	Quad Code	0745
Wastewater Description:	Sewage Effluent		
Receiving Waters	Lake Greeley / Taylortown Creek (HQ-CWF)	Stream Code	5354
NHD Com ID	26170530	RMI	1.147
Drainage Area	6.71 mi^2 (lake a discharge point)	Yield (cfs/mi^2)	0.028
Q_{7-10} Flow (cfs)	0.186	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1,149	Slope (ft/ft)	-
Watershed No.	1-D	Chapter 93 Class.	HQ-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	-
Nearest Downstream Public Water Supply Intake	Easton Area Water System		
PWS Waters	Delaware River	Flow at Intake (cfs)	-
PWS RMI	110.4	Distance from Outfall (mi)	~ 95

Treatment Facility Summary

Treatment Facility Name: Pine Forest Camp STP

WQM Permit No.	Issuance Date
163S7	1963
5220401	9/15/2021

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Aerated Lagoon	Chlorination	0.011 (2018) When discharging

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.025	Unknown	Not Overloaded	-	Offsite Disposal & Land Application

Compliance History

DMR Data for Outfall 001 (from December 1, 2020 to November 30, 2021)

Parameter	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20
Flow (MGD) Average Monthly			0.0200	0.0150	0.01	0.011	0.008	0.007				
Flow (MGD) Daily Maximum			0.0250	0.0250	0.025	0.025	0.025	0.025				
pH (S.U.) Minimum			7.2	7.2	7.2	7.6	7.6	7.6				
pH (S.U.) Instantaneous Max			7.4	7.4	7.8	7.8	7.8	7.8				
DO (mg/L) Minimum			7.05	7.18	7.55	7.32	8.06	8.1				
TRC (mg/L) Average Monthly			0.28	0.29	0.55	< 0.01	FF	FF				
TRC (mg/L) Instantaneous Max			0.41	0.43	0.93	< 0.01	FF	FF				
CBOD5 (mg/L) Average Monthly			< 3.0	28.0	< 5.0	< 3.0	3.0	3.0				
CBOD5 % Removal (%) Percent Removal Instantaneous Min			GG	GG	98	97.6						
TSS (mg/L) Average Monthly			9.0	25.0	47.0	22	5.0	38.0				
Total Dissolved Solids (mg/L) Average Monthly			220			145						
Fecal Coliform (CFU/100 ml) Geometric Mean			< 4	< 4	< 4	54	96	< 4.0				
Fecal Coliform (CFU/100 ml) Instantaneous Max			< 4	< 4	4	54	96	4.0				
Nitrate-Nitrite (mg/L) Average Monthly			3.72	4.07	2.5	< 1.05	< 1.05	< 1.05				
Total Nitrogen (mg/L) Average Monthly			4.52	16.1	12.2	2.75	1.54	8.8				
Ammonia (mg/L) Average Monthly			1.5	9.9	8.3	< 1.0	< 1.0	< 1.0				
TKN (mg/L) Average Monthly			1.8	12	9.7	1.7	0.49	7.8				
Total Phosphorus (mg/L) Average Monthly			0.2	0.7	0.7	0.3	< 0.1	0.4				

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.025
Latitude 41º 24' 39.00" **Longitude** -75º 1' 15.00"
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
Total Suspended Solids	30.0	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	60.0	IMAX	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)
	1.6	IMAX		
E. Coli (No./100 ml)	Report	Average Annually	-	92a.61

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model
Dissolved Oxygen	7.0	Minimum	Previous Modeling
$CBOD_5$	10.0	Average Monthly	Previous Modeling, DRBC-originated
	20.0	IMAX	
$CBOD_5$ Removal %	85%	Minimum Monthly Average	DRBC Docket
$CBOD_5$ Raw Sewage Influent	Report	Average Monthly	DRBC Docket
Ammonia-Nitrogen May 1 - Oct 31	14.0	Average Monthly	Previous Modeling
	28.0	IMAX	
Ammonia-Nitrogen Nov 1 - Apr 30	Report	Average Monthly	
Total Phosphorus	1.0	Average Monthly	4/17/2007 DEP Biologist “Lake Trophic Survey”
	2.0	IMAX	
Nitrate-Nitrite as N	Report	Average Monthly	Maintained from Previous Permit
Total Nitrogen	Report	Average Monthly	
Total Kjeldahl Nitrogen	Report	Average Monthly	
Total Dissolved Solids	Report	Average Quarterly	DRBC Docket

Anti-Backsliding

No limitations were made less stringent.

The previous permit renewal derived a mass balance limit for Ammonia-Nitrogen for conservatism because the WQM 7.0 model was designed primarily for free-flowing streams and is of questionable accuracy in terms of lake scenarios. The chronic criterion for ammonia is taken as 2.4 mg/L and the upstream ammonia concentration is assumed to be negligible. See mass balance calculation below:

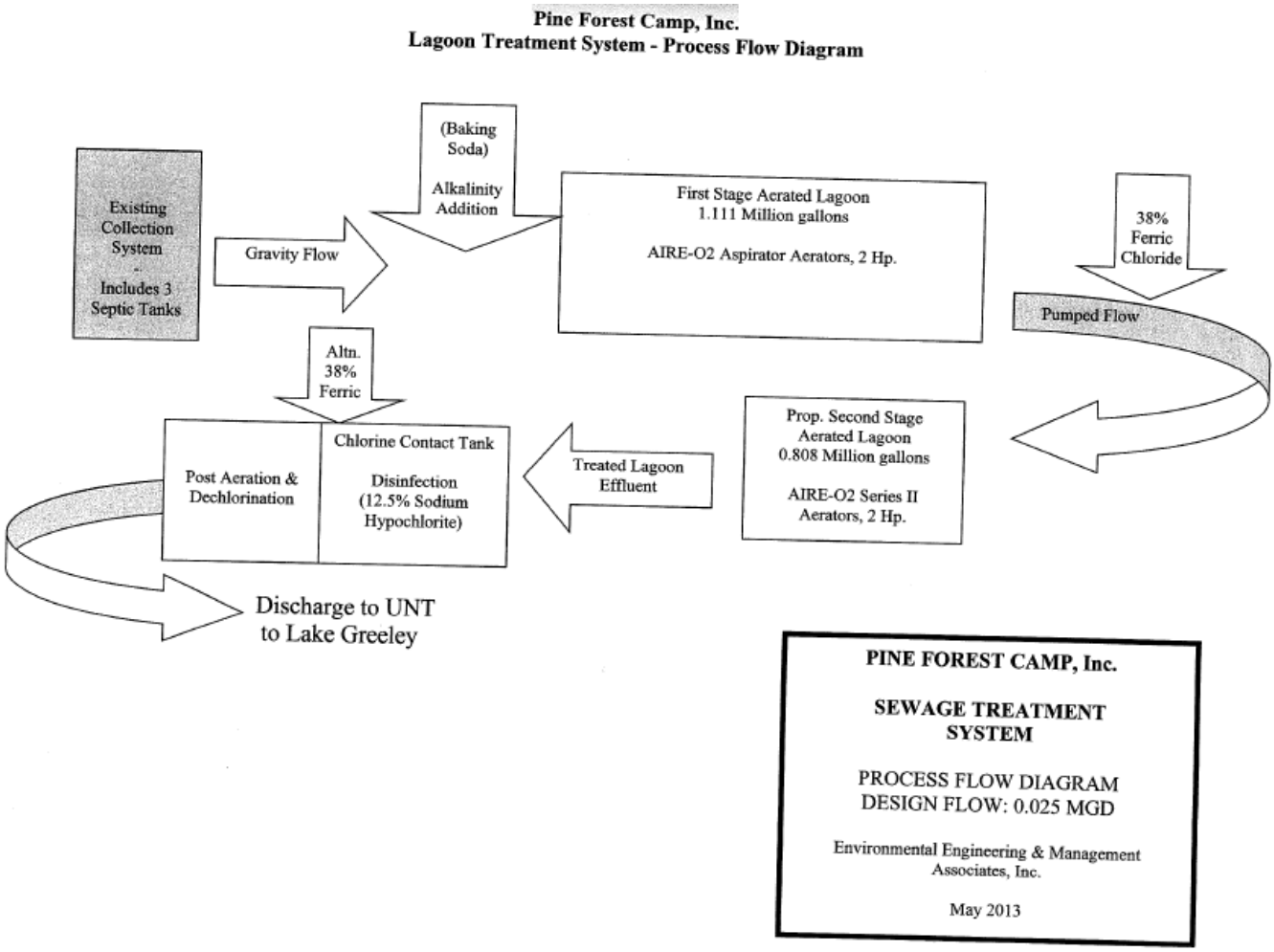
Downstream flow * Downstream Conc. = Discharge Flow * Discharge Conc. + Upstream Flow * Upstream Conc.

$Q_R * C_R = Q_d * C_d + Q_s * C_s$

Solve for C_d (discharge concentration):

C_d (chronic) = $[(Q_{7\text{-}10} + Q_{discharge}) * C_r - Q_{7\text{-}10} * C_s] / Q_{discharge}$

C_d (chronic) = [(0.19 cfs + 0.039 cfs) * 2.4 mg/L – 0.19 cfs * 0 mg/L] / 0.039 cfs ≅ 14.0 mg/L.



Modeling Using StreamStats:

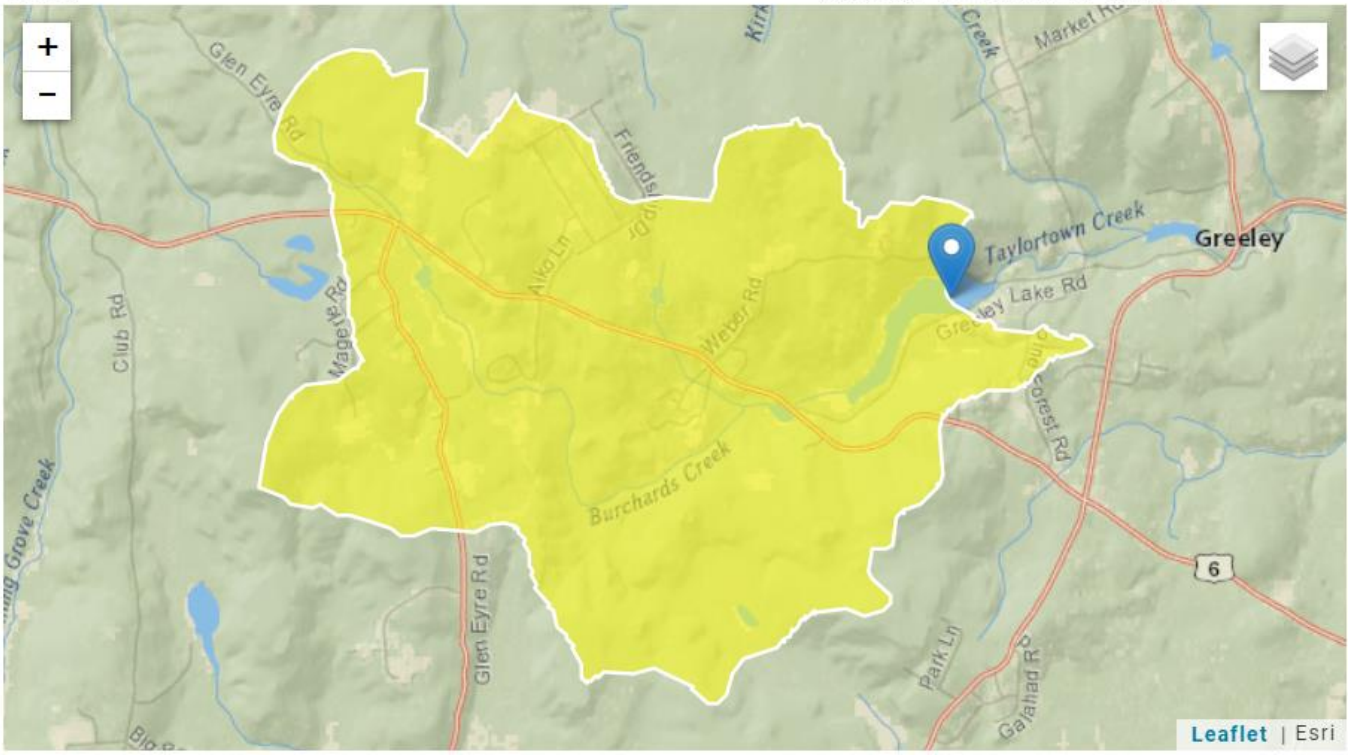
At Outfall 001 to Taylortown Creek:

RMI	Elevation (ft)	Drainage Area (mi^2)	Q_{7-10} Flow (cfs)
1.147	1,149	6.71	0.186

$$Low\ Flow\ Yield\ using\ StreamStats = \frac{0.186\ ft^3/sec}{6.71\ mi^2} = \mathbf{0.0277}\ \frac{\boldsymbol{ft^3/sec}}{\boldsymbol{mi^2}}$$

StreamStats Report

Region ID: PA
Workspace ID: PA20220111152827066000
Clicked Point (Latitude, Longitude): 41.41438, -75.02149
Time: 2022-01-11 10:28:47 -0500



Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	6.71	square miles

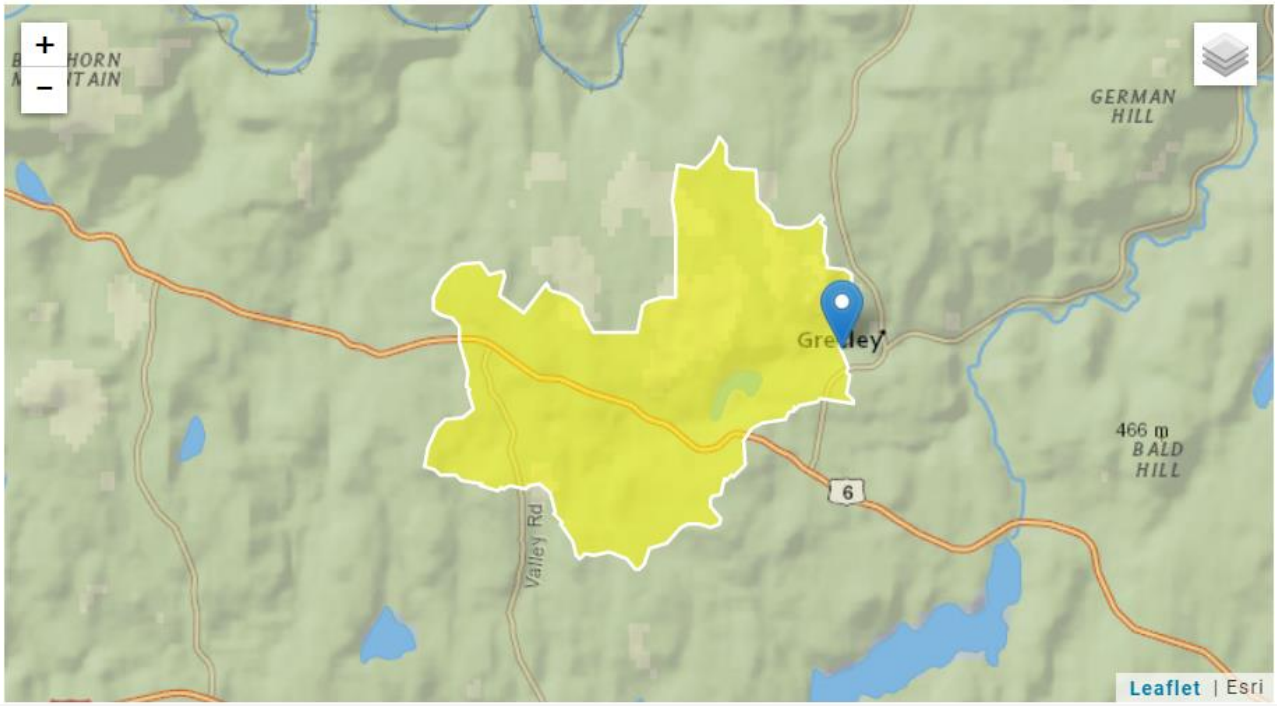
Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	0.547	ft^3/s	38	38
30 Day 2 Year Low Flow	0.795	ft^3/s	33	33
7 Day 10 Year Low Flow	0.186	ft^3/s	57	57

At confluence with Balliard Creek (5351):

RMI	Elevation (ft)	Drainage Area (mi²)
0.00	1,068.2	9.69

StreamStats Report

Region ID: PA
Workspace ID: PA20220111153446975000
Clicked Point (Latitude, Longitude): 41.41867, -75.00334
Time: 2022-01-11 10:35:07 -0500



Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	9.69	square miles

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
01D	5354	TAYLORTOWN 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)
1.147	PineForest Camp	PA0029050	0.025	CBOD5	25		
				NH3-N	13.9	27.8	
				Dissolved Oxygen			3

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.186	= Q stream (cfs)	0.5	= CV Daily
0.025	= 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 = 1.553	1.3.2.iii	WLA cfc = 1.507
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.579	5.1d	LTA_cfc = 0.876

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)