Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0035483**
Facility Type	**Non-Municipal**	APS ID	**1125707**
Major / Minor	**Minor**	Authorization ID	**1506466**

Applicant and Facility Information

Applicant Name	**Camp Albryoca**	Facility Name	**Camp Albryoca**
Applicant Address	2801 Greenville Road Meyersdale, PA 15552-8409	Facility Address	2801 Greenville Road Meyersdale, PA 15552-8409
Applicant Contact	Kevin Yoder	Facility Contact	Same as Applicant
Applicant Phone	(814) 634-7192	Facility Phone	Same as Applicant
Client ID	148396	Site ID	241272
Ch 94 Load Status	Not Overloaded	Municipality	Greenville Township
Connection Status	No Limitations	County	Somerset
Date Application Received	November 13, 2024	EPA Waived?	Yes
Date Application Accepted	November 14, 2024	If No, Reason	

Purpose of Application: Application for Renewal of an NPDES Permit for treated sewage

Summary of Review

Camp Albryoca has applied for a renewal of NPDES Permit No. PA0035483. PA0035483 was previously issued by the Pennsylvania Department of Environmental Protection (DEP) on October 1, 2019 and expired October 31, 2024. The permit has been administratively extended.

Sewage is treated by septic tank, sand filter, and chlorine disinfection. The facility discharges to Little Piney Creek (Stream Code 39286), which is classified as a cold-water fishery (CWF) in State Watershed 19-F.

Biosolid treatment was not identified in the application.

The permittee is enrolled in eDMR but does not use it. They need to begin doing so.

The applicant has complied with Act 14 Notifications with letters dated November 4, 2024, and sent to Greenville Township and Somerset County.

The following changes are being made this permit cycle:

- A dissolved oxygen limit is being added to the permit based on best professional judgement.
- New, more restrictive TRC and summer and winter ammonia-nitrogen limits are being imposed based on updated modeling.
- *E. coli* monitoring is being added in accordance with the SOPs.
- A requirement to install a flow meter has been added to the permits.

Approve	Deny	Signatures	Date
X		Stephanie Conrad / Environmental Engineering Specialist	October 29, 2025
X		Mahbuba Iasmin Mahbuba Iasmin, Ph.D. P.E. / Environmental Engineering Manager	December 19, 2025

Summary of Review

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.***

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)	.005
Latitude	39º 44' 38"	Longitude	-78º 59' 24"
Quad Name	FROSTBURG	Quad Code	2114
Wastewater Description:	Sewage Effluent		

Receiving Waters	Little Piney Creek (CWF)	Stream Code	39286
NHD Com ID	69922527	RMI	3.94
Drainage Area	0.69	Yield (cfs/mi^2)	0.011579
Q_{7-10} Flow (cfs)	0.00799	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	2472	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	**None**	Name	**N/A**

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

Nearest Downstream Public Water Supply Intake	Indian Creek Valley Water Authority		
PWS Waters	Youghiogheny River	Flow at Intake (MGD)	0.259
PWS RMI	62.83	Distance from Outfall (mi)	56.67

Changes Since Last Permit Issuance: The outfall location reported in the application was not consistent with the facility discharging to Little Piney Creek, but rather to an unnamed tributary. On October 16, 2025 Lisa Milsop with DEP confirmed the outfall location in the field. The gps location cited above and in the permit are the location confirmed on October 16th.

Other Comments:

Treatment Facility Summary

Treatment Facility Name: Camp Albryoca STP

WQM Permit No.	Issuance Date	Purpose
5671402	March 17, 1971	Permit issued to Allegheny Brothren Youth Association Camp (Albryoca) by the Department of Environmental Resources approving construction of a 0.005 MGD sewage treatment plant including: • One (1) 5,000-gallon septic tank • Two (2) dosing tanks • Two (2) 1444 ft^2 intermittent sand filter • One (1) 225-gallon chlorine contact tank

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Septic Tank Sand Filter	Hypochlorite	0.005

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.005	12	Not Overloaded	-	-

Changes Since Last Permit Issuance:

Other Comments:

Compliance History

Operations Compliance Check Summary Report

Facility: Camp Albryoca

NPDES Permit No.: PA0035483

Compliance Review Period: 9/15/2020/9/15/2025

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC	INSPECTOR ID	INSPECTOR	INSPECTION COMMENT	CREATION DATE	UPDATE DATE	# OF VIOLATIONS
12/28/2023	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted	00703877	KING, WILLIAM		01/24/2024	11/25/2024	1
04/18/2022	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted	00377635	MILSOP, LISA		04/20/2022	04/21/2022	7

Violation Summary:

VIOL ID	VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	VIOL CODE ID	VIOL PROGRAM	RESOLVED DATE	INSP ID	INSP CATEGORY	INSPECTED DATE	INSP TYPE	INSPECTOR	VIOLATION COMMENT
952078	04/18/2022	92A.41(A)(12B	NPDES - Failure to submit monitoring report(s) or properly complete monitoring reports	17285	WPCNP	04/20/2022	3350228	PF	04/18/2022	Compliance Evaluation	MILSOP, LISA	Discharge Monitoring Reports have not been submitted to the Department as required by the NPDES Permit.
952079	04/18/2022	252.4(A)	NPDES - Failure to utilize an accredited environmental laboratory for testing or analysis of environmental samples	17653	WPCNP	04/20/2022	3350228	PF	04/18/2022	Compliance Evaluation	MILSOP, LISA	The on-site laboratory is not registered.
952080	04/18/2022	92A.41(A)(12B	NPDES - Failure to submit monitoring report(s) or properly complete monitoring reports	17285	WPCNP	04/20/2022	3350228	PF	04/18/2022	Compliance Evaluation	MILSOP, LISA	DMRs are not being submitted to the Department as required by the NPDES permit.
952081	04/18/2022	92A.41(A)(12B	NPDES - Failure to submit monitoring report(s) or properly complete monitoring reports	17285	WPCNP	04/20/2022	3350228	PF	04/18/2022	Compliance Evaluation	MILSOP, LISA	DMR Supplementals are not being submitted to the Department.
952082	04/18/2022	92A.61(G)	NPDES - Failure to use a format or process required by DEP for self-monitoring results	17255	WPCNP	04/20/2022	3350228	PF	04/18/2022	Compliance Evaluation	MILSOP, LISA	DMRs and DMR Supplementals are not being submitted to the Department.
952083	04/18/2022	302.1202	Operator Certification - Owner failed to comply with the Act or Chapter 302 regulations	17336	WPCWP	04/20/2022	3350228	PF	04/18/2022	Compliance Evaluation	MILSOP, LISA	Terry Baker, the operator listed by the facility stated that he has not been the operator for this facility for a few years.
952084	04/18/2022	302.1202	Operator Certification - Owner failed to comply with the Act or Chapter 302 regulations	17336	WPCWP	04/20/2022	3350228	PF	04/18/2022	Compliance Evaluation	MILSOP, LISA	Facility specified operator indicated that he has not been the operator for this facility for a few years.
8172365	12/28/2023	302.202	Operator Certification - Failure to submit annual system fee	17333	WPCWP	11/19/2024	3678468	PF	12/28/2023	Administrative/ File Review	KING, WILLIAM	Received 2023 Chapter 302 Fees

Open Violations by Client ID:

No open violations for Client ID

Enforcement Summary: all enforcements are closed

ENF TYPE DESC	CREATION DATE	EXECUTED DATE	INITIATED DATE	VIOL CODE ID	PROGRAM NAME	VIOLATIONS	# OF VIOLATIONS	PENALTY AMOUNT	AMOUNT RECEIVED	TOTAL AMOUNT DUE	ENF FINAL STATUS	ENF CLOSED DATE	ENF COMMENT
Administrative Order	09/07/2022	09/07/2022		17336	WPCWP	252.4(A); 302.1202; 92A.41(A)(12B	4				Comply/Closed	02/14/2023	Camp Albryoca has complied with all obligations of the AO as of 2/14/2023. Enforcement Record updated to Comply/Closed.
Notice of Violation	01/24/2024	12/28/2023		17333	WPCWP	302.202	1				Comply/Closed	11/19/2024	
Administrative Order	09/07/2022	09/07/2022		17285	WPCNP	252.4(A); 302.1202; 92A.41(A)(12B	4				Comply/Closed	02/14/2023	Camp Albryoca has complied with all obligations of the AO as of 2/14/2023. Enforcement Record updated to Comply/Closed.
Administrative Order	09/07/2022	09/07/2022		17653	WPCNP	252.4(A); 302.1202; 92A.41(A)(12B	4				Comply/Closed	02/14/2023	Camp Albryoca has complied with all obligations of the AO as of 2/14/2023. Enforcement Record updated to Comply/Closed.

Effluent Violation Summary:

No effluent exceedances reported during review period 9 instances of late DMRs

Unauthorized Discharges:

No unauthorized discharges reported in eDMR during review period

Compliance Status: Facility is in general compliance

Completed by: Howard Dunn **Completed date:** 9/15/202525

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .005
Latitude 39º 44' 38" **Longitude** -78º 59' 24"
Wastewater Description: Sewage Effluent

Technology-Based Limitations (TBELs)

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Flow (MGD)	Report	Average Monthly	-	92a.27, 92a.61
$CBOD_5$	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)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Ammonia-Nitrogen	25	Average Monthly	-	BPJ
Dissolved Oxygen	4.0	Min	-	BPJ
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Total Nitrogen	Report	Average Monthly	-	92a.61
Total Phosphorus	Report	Average Monthly	-	92a.61
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)

Best Professional Judgment (BPJ) Limitations

In accordance with Section 1.A. Note 6 of the Department's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9] and 25 Pa. Code §93, a dissolved oxygen minimum of 4.0 mg/L will be imposed based on BPJ in order to ensure adequate operation and maintenance. The previous permit did not impose a limit or monitoring for dissolved oxygen. Therefore, sufficient data is not available at this time to demonstrate that the facility is able to meet the BPJ DO limit. A four-year eleven-month compliance period is being included for DO in this permit.

Water Quality-Based Limitations (WQBELs)

Pursuant to EPA's approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the *Pennsylvania Bulletin* on July 11, 2020, new water quality criteria for ammonia-nitrogen apply to waters of the commonwealth. Therefore, WQBELs for Outfall 001 are being re-evaluated even though there have been no changes to the treatment plant.

WQM 7.0 Water Quality Modeling

DEP's WQM 7.0 version 1.1 model is a Microsoft Access Program used for sewage discharger to determine whether TBELs are sufficient to meet in-stream water quality criteria for ammonia-nitrogen, carbonaceous biochemical oxygen demand ($CBOD_5$), and dissolved oxygen (DO). To accomplish this, the model simultaneously simulates mixing and degradation of ammonia-nitrogen and mixing and consumption of DO through $CBOD_5$ and ammonia-nitrogen degradation. WQM 7.0 determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions.

WQM 7.0 determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions.

The model is a two-step process. The discharge is first modeled for the summer period (May through October) because warm temperatures are more likely to result in critical loading conditions. Reduced DO levels likely also play a role in ammonia toxicity and solubility of DO decreases at increased water temperature. If summer modeling determines that WQBELs are appropriate for the summer period, then modeling is completed for the winter period (November through April). This is in accordance with DEP's *Implementation Guidance of Section 93.7 Ammonia Criteria* [Do. No. 391-2000-013] (Ammonia Guidance).

River Mile Index (RMI) was measured in eMAP PA as the distance from Outfall 001 to the mouth of Little Piney Creek. Discharge point and end of reach elevations were determined using the Elevation Profile Tool in USGS Stream Stats. Discharge point and end of reach drainage areas as well as Q7-10 were also generated by USGS Stream Stats. USGS Stream Stats files are included in Attachment A. In the absence of site-specific data, discharge temperature, stream temperature, and stream pH are assumed to be 20, 20, and 7 in accordance with the Ammonia Guidance.

Stream width to depth was assumed to be 10 in accordance with DEP's *Technical Reference Guide (TRG) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1* [Doc. No. 391-2000-007]. The effluent $CBOD_5$, ammonia-nitrogen, and dissolved oxygen concentrations were set equal to the previous permit limits. The DO Goal was set equal to the minimum instream DO criteria defined for CWF in 25 PA Code Section 93.7 in accordance with DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 revised March 24, 2021, Version 1.9].

WQM 7.0 summer inputs are documented in the table below:

Discharge Characteristics		**Basin/Stream Characteristics**	
Parameter	**Value**	**Parameter**	**Value**
River Mile Index (RMI)	3.94	Drainage Area	0.69
Discharge Flow (MGD)	0.005	Q_{7-10} (cfs)	0.00799
Discharge Temp (^oC)	20	Low-flow yield (cfs/mi^2)	0.011579
Discharge Ammonia-Nitrogen (mg/L)	13	Elevation (ft)	2472
Discharge $CBOD_5$ (mg/L)	25	Stream Width/Depth	10
Discharge Dissolved Oxygen (mg/L)	4	Stream Temp (^oC)	20
DO Goal	5.0	Stream pH (s.u.)	7
In-stream DO (mg/L)	9.01		

The Ammonia Guidance documents that when modeling for Winter, the in-stream temperature should be 5 ^oC and the yield is doubled. The instream dissolved oxygen concentration was also changed to 12.51 mg/L and the discharge temperature changed to 15 ^oC.

The discharge was modeled using WQM 7.0 to evaluate water quality-based limits for ammonia-nitrogen, $CBOD_5$, and DO. Modeling confirmed that a TBEL and a BPJ limit were adequate to protect in-stream water quality for CBOD5 and DO respectively. New, more restrictive ammonia-nitrogen limits are necessary for both summer and winter ammonia-nitrogen.

In accordance with DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 revised March 24, 2021, Version 1.9], winter ammonia-nitrogen limits are assessed by comparing winter WQM 7.0 output value with one calculated by multiplying the summer limit by a multiplier of three. The more restrictive limit is then imposed. For this facility, the calculated winter limit will be imposed. WQM 7.0 output files are included in Attachment B.

Parameter	**Limit (mg/l)**	**SBC**	**Basis**
Ammonia-Nitrogen Summer (mg/L)	4.54	Average Monthly	WQBEL

Ammonia-Nitrogen Winter (mg/L)	13.62	Average Monthly	WQBEL
$CBOD_5$ (mg/L)	25	Average Monthly	TBEL
Dissolved Oxygen	4.0	Average Monthly	BPJ

The Department's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc No.362-0400-001] stipulates that for sewage related pollutants instantaneous maximum limits be calculated by multiplying the average monthly limit by a conversion factor of 2.0.

New, more restrictive ammonia-nitrogen limits are necessary for both summer and winter. The permittee is not currently reporting any flow and there is no readily accessible discharge sampling data for this facility. It is therefore unknown if the facility is able to meet the new, more restrictive limit. A four-year eleven month compliance period is being included for summer and winter ammonia-nitrogen in this permit.

Total Residual Chlorine

DEP's Total Residual Chlorine (TRC) Spreadsheet is a Microsoft Excel ® Program used to evaluate WQBELs tor TRC using a mass balance. In accordance with the Department's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No.BCW-PMT-033 Version 1.9], default values of 0.3 mg/L and 0 mg/L for in-stream and discharge chlorine demand were used. Additionally, a discharge flow of 0.005 mgd and a Q7-10 flow of 0.00799 were used. TRC modeling determined that a new, more restrictive TRC limit is necessary to meet in-stream water quality criteria. The permittee is not currently reporting any flow and there is no readily accessible discharge sampling data for this facility. It is therefore unknown if the facility is able to meet the new, more restrictive limit. A four-year eleven month compliance period is therefore being included for TRC in this permit.

Parameter	Limit (mg/l)	SBC	Basis
Total Residual Chlorine (mg/L)	0.160	Average Monthly	WQBEL

Permit Effluent Limitations

In accordance with Section III of DEP's SOP for *Establishing Effluent limitations for Individual Sewage Permits*, the limits to be imposed, which are provided below, represent the most stringent limitations between the TBELs, WQBELs, BAT, and BPJs.

Parameter	Limit (mg/l)	SBC	Basis
Total Suspended Solids	30	Average Monthly	TBEL
Fecal Coliform (Recreation Season)	200 CFU/mL	Geo Mean	TBEL
Fecal Coliform (Non-Recreation Season)	2,000 CFU/mL	Geo Mean	TBEL
pH	6.0	Instantaneous Minimum	TBEL
pH	9.0	Instantaneous Maximum	TBEL
Ammonia-Nitrogen Summer (mg/L)	4.54	Average Monthly	WQBEL
Ammonia-Nitrogen Winter (mg/L)	13.62	Average Monthly	WQBEL
$CBOD_5$ (mg/L)	25	Average Monthly	TBEL
Dissolved Oxygen	4.0	Average Monthly	BPJ
Total Residual Chlorine (mg/L)	0.160	Average Monthly	WQBEL

Additional Considerations

In accordance with Section I.A. of DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9], pursuant to EPA's approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the Pennsylvania Bulletin on July 11, 2020 and under the authority of 25 Pa. Code § 93.7(a) and § 92.a.61, sewage dischargers will include monitoring for *E. coli*. For new and reissued permit, a monitoring frequency of 1/year will be imposed for design flows ≥ 0.002 MGD and < 0.05 MGD.

In accordance with Section I.A of the DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9], and under the authority of 25 Pa. Code § 92a.61(b), nutrient monitoring for total nitrogen and total phosphorus will be imposed for sewage facilities with a design flow greater than 2,000 GPD. The intent of this monitoring is to establish the nutrient load of the wastewater and evaluate the impact that load may have on the quality of the receiving stream. The SOP states that if the receiving stream is not impaired for nutrients, then discretion may be used in setting the monitoring frequency. Little Piney Creek is not impaired for nutrients; therefore, a monitoring frequency of 1/year will again be imposed. The permittee is not currently reporting any flow and there is no readily accessible discharge sampling data for this facility.

Conventional limits are rounded in accordance with the guidelines in Chapter 5 Section C.2. of DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001].

Monitoring frequency for the proposed effluent limits are based on Table 6-3, Self -Monitoring Requirements for Sewage Dischargers, from DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001].

The facility has been reporting no flow for a long time. During this permit cycle, the permittee will be required to install a flow meter at the facility to allow the Department to get a better understanding of how much and how often the facility is discharging to the stream. Part C.V. of the permit has been added to reflect this requirement.

Camp Albryoca treats sewage using a septic tank and sand filter. The standard solids management language for a minor STP is written to reflect treatment using extended aeration. The previous permit included standard solids management language from a small flow treatment facility (SFTF) permit in Part C.I.E. to accurately reflect solids handling requirements for a septic tank. Part C.I.E. was updated to reflect current SFTF permit solids management handling.

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: One Year Following Permit Issuance 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	Metered

Compliance Sampling Location: Outfall 001

Other Comments: None

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: Beginning of Sixtieth (60th) Month Following Permit Issuance 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	0.16	XXX	0.523	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	13.62	XXX	27.24	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	4.54	XXX	9.08	2/month	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

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 One Year Following Permit Issuance

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

Compliance Sampling Location: Outfall 001

Other Comments: None

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 End of Fifty-Ninth (59th) Month Following Permit Issuance.

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	0.5	XXX	1.6	1/day	Grab
DO	XXX	XXX	Report Inst Min	XXX	XXX	XXX	1/day	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	25	XXX	50	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	13.0	XXX	26.0	2/month	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

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		
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	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
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall 001

Other Comments: None

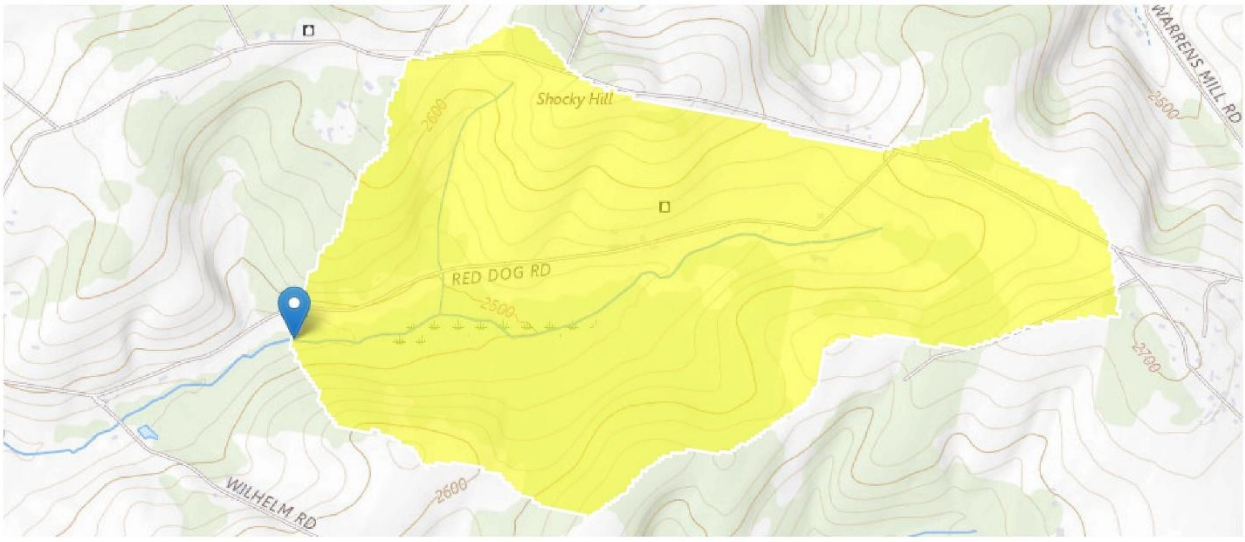
ATTACHMENT A

USGS Stream Stats Output Files

Discharge Point (RMI 3.94)

StreamStats Report

Region ID: PA
Workspace ID: PA20251020130550997000
Clicked Point (Latitude, Longitude): 39.74368, -78.99011
Time: 2025-10-20 09:06:11 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.69	square miles
ELEV	Mean Basin Elevation	2578	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	0.69	square miles	2.26	1400
ELEV	Mean Basin Elevation	2578	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	0.0348	ft^3/s

Statistic	Value	Unit
30 Day 2 Year Low Flow	0.0715	ft^3/s
7 Day 10 Year Low Flow	0.00799	ft^3/s
30 Day 10 Year Low Flow	0.0189	ft^3/s
90 Day 10 Year Low Flow	0.0468	ft^3/s

Low-Flow Statistics Citations

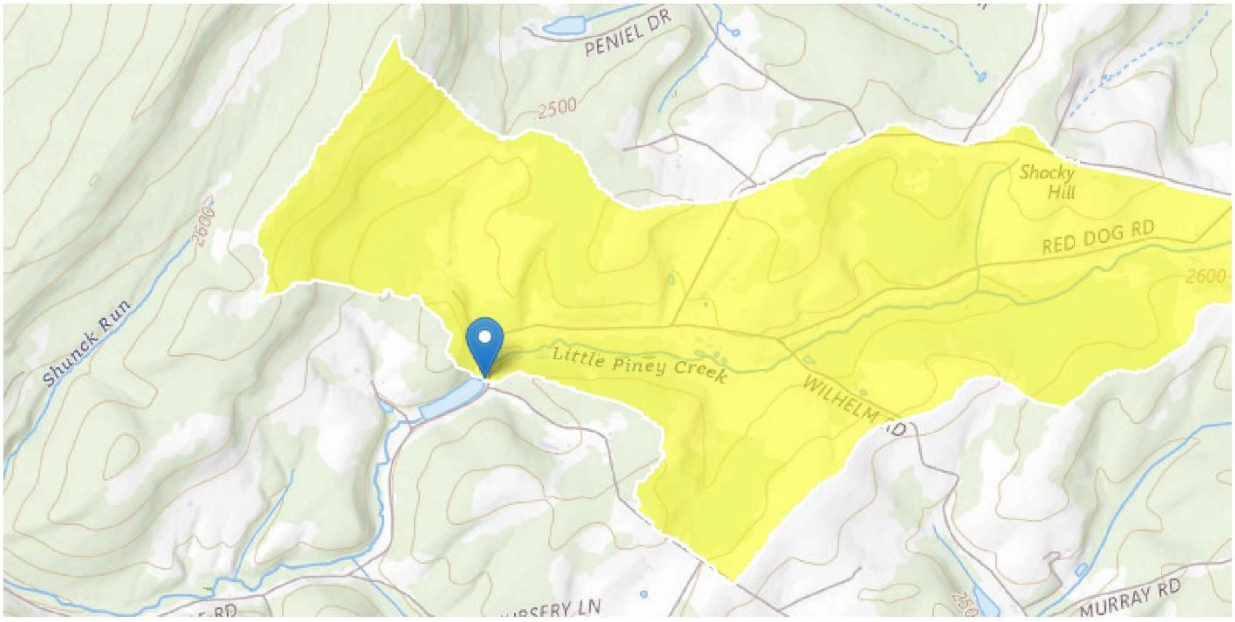
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.29.3
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

End of Reach (RMI 2.54)

StreamStats Report

Region ID: PA
Workspace ID: PA20251020132431159000
Clicked Point (Latitude, Longitude): 39.74057, -79.01288
Time: 2025-10-20 09:24:51 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	2.22	square miles
ELEV	Mean Basin Elevation	2552	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	2.22	square miles	2.26	1400
ELEV	Mean Basin Elevation	2552	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	0.131	ft^3/s
30 Day 2 Year Low Flow	0.254	ft^3/s
7 Day 10 Year Low Flow	0.0336	ft^3/s
30 Day 10 Year Low Flow	0.0726	ft^3/s
90 Day 10 Year Low Flow	0.169	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: 4.29.3
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

ATTACHMENT B

WQM 7.0 Modeling Results

Summer Modeling

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	39286	LITTLE PINEY CREEK	**3.940**	2472.00	0.69	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	0.012	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
Camp Albryoca	PA0035483	0.0000	0.0050	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	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	9.01	0.00	0.00
NH3-N	13.00	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	39286	LITTLE PINEY CREEK	**2.540**	2393.00	2.22	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	0.012	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	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
19F	39286	LITTLE PINEY 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												
3.940	0.01	0.00	0.01	.0077	0.01069	.257	2.57	10.01	0.02	3.605	20.00	7.00
Q1-10 Flow												
3.940	0.01	0.00	0.01	.0077	0.01069	NA	NA	NA	0.02	4.037	20.00	7.00
Q30-10 Flow												
3.940	0.01	0.00	0.01	.0077	0.01069	NA	NA	NA	0.03	3.281	20.00	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
19F	39286	LITTLE PINEY 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
3.940	Camp Albryoca	16.76	26	16.76	26	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
3.940	Camp Albryoca	1.89	4.54	1.89	4.54	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)		
3.94	Camp Albryoca	25	25	4.54	4.54	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19F	39286	LITTLE PINEY CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.940	0.005	20.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.575	0.257	10.006	0.024
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
13.31	0.526	2.23	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.546	21.804	Owens	5
Reach Travel Time (days)			
3.605			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.361	11.01	1.73	8.24
0.721	9.11	1.35	8.24
1.082	7.54	1.05	8.24
1.442	6.24	0.81	8.24
1.803	5.16	0.63	8.24
2.163	4.27	0.49	8.24
2.524	3.53	0.38	8.24
2.884	2.92	0.30	8.24
3.245	2.42	0.23	8.24
3.605	2.00	0.18	8.24

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19F	39286	LITTLE PINEY 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)
3.940	Camp Albryoca	PA0035483	0.000	CBOD5	25		
				NH3-N	4.54	9.08	
				Dissolved Oxygen			4

Winter Modeling

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	39286	LITTLE PINEY CREEK	**3.940**	2472.00	0.69	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	0.023	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
Camp Albryoca	PA0035483	0.0000	0.0050	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	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	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
19F	39286	LITTLE PINEY CREEK	**2.540**	2393.00	2.22	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	0.023	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	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
19F	39286	LITTLE PINEY 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												
3.940	0.02	0.00	0.02	.0077	0.01069	.276	2.88	10.46	0.03	2.864	8.26	7.00
Q1-10 Flow												
3.940	0.01	0.00	0.01	.0077	0.01069	NA	NA	NA	0.03	3.346	9.31	7.00
Q30-10 Flow												
3.940	0.02	0.00	0.02	.0077	0.01069	NA	NA	NA	0.03	2.536	7.62	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 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19F	39286	LITTLE PINEY CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.940	0.005	8.262	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
2.881	0.276	10.456	0.030
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
9.50	0.929	5.21	0.284
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
9.734	16.968	Owens	5
Reach Travel Time (days)			
2.864			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.286	8.14	4.80	10.56
0.573	6.97	4.43	10.56
0.859	5.97	4.08	10.56
1.146	5.11	3.76	10.56
1.432	4.37	3.47	10.56
1.718	3.74	3.20	10.56
2.005	3.21	2.95	10.56
2.291	2.75	2.72	10.56
2.578	2.35	2.51	10.56
2.864	2.01	2.31	10.56

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19F	39286	LITTLE PINEY 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)
3.940	Camp Albryoca	PA0035483	0.000	CBOD5	25		
				NH3-N	15.96	31.92	
				Dissolved Oxygen			4

ATTACHMENT C

TRC Modeling Results

TRC_CALC_Camp Albryoca

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.00799	= Q stream (cfs)	0.5	= CV Daily
0.005	= 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 = 0.349	1.3.2.iii	WLA cfc = 0.332
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.130	5.1d	LTA_cfc = 0.193

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.160	AFC
		INST MAX LIMIT (mg/l) = 0.523	

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)**