

Application Type Renewal
 Facility Type Non-Municipal
 Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0084476
 APS ID 630796
 Authorization ID 1519549

Applicant and Facility Information

Applicant Name	<u>Girl Scouts In The Heart Of PA</u>	Facility Name	<u>Camp Small Valley Girl Scout Camp</u>
Applicant Address	<u>4640 Trindle Road</u> <u>Camp Hill, PA 17011-5600</u>	Facility Address	<u>88 Hemlock Road</u> <u>Halifax, PA 17032</u>
Applicant Contact	<u>Steve Jepsen</u>	Facility Contact	<u>Dan Farnham</u>
Applicant Phone	<u>(717) 280-1494</u>	Facility Phone	<u>(570) 319-1706</u>
Client ID	<u>34282</u>	Site ID	<u>240699</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Jefferson Township</u>
Connection Status		County	<u>Dauphin</u>
Date Application Received	<u>March 13, 2025</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted		If No, Reason	
Purpose of Application	<u>Permit renewal for discharge of treated sewage.</u>		

Summary of Review

1.0 General Discussion

This factsheet supports the renewal of an existing NPDES permit for a 0.0065 mgd discharge of treated domestic sewage from a wastewater treatment plant that serves a seasonal camp. The Camp serves girl scouts during the summer months where flows are higher. Flows decrease during winter months since only the ranger and maintenance staff are using the facility. Treatment is provided by individual septic tanks, four lined constructed wetland system, and chlorination. Treated effluent is discharged into an unlined constructed wetland that flows into a natural wetland/swale that may eventually drains to Conleys Creek classified as HQ-CWF. A Point of First Use (POFU) survey conducted in 1992 determined the POFU to be on the Conleys Creek at the point where the natural wetland/swale enters the creek. The existing NPDES permit was issued on February 25, 2020, with an effective date of March 1, 2020, and expiration date of February 28, 2025. The applicant submitted a late permit renewal application to the Department. A topographic map showing the discharge location is presented in attachment A.

1.1 Sludge use and disposal description and location(s):

Sludge is hauled out periodically by a license hauler.

1.2 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-

Approve	Deny	Signatures	Date
X		<i>J. Pascal Kwedza</i> J. Pascal Kwedza, P.E. / Environmental Engineer	March 11, 2026
x		<i>Maria D. Bebenek</i> for Daniel W. Martin, P.E. / Environmental Engineer Manager	March 24, 2026
x		<i>Maria D. Bebenek</i> Maria D. Bebenek, P.E., Program Manager	March 24, 2026

Summary of Review

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.

1.3 Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.0065</u>
Latitude	<u>40° 29' 34"</u>	Longitude	<u>-76° 47' 33"</u>
Quad Name	<u>Enders</u>	Quad Code	<u>1531</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Via Wetland to POFU @ Conleys Creek</u>	Stream Code	<u>@POFU 16835</u>
NHD Com ID	<u>54974177</u>	RMI	<u>4.68 mi</u>
Drainage Area	<u>1.6</u>	Yield (cfs/mi ²)	<u>0.1027</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.16</u>	Q ₇₋₁₀ Basis	<u>USGS Gage Station</u>
Elevation (ft)		Slope (ft/ft)	
Watershed No.	<u>6-C</u>	Chapter 93 Class.	<u>HQ-CWF</u>
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	<u>Attaining Use(s)</u>		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status	<u>Final, 09/27/2011</u>	Name	<u>Armstrong Creek</u>
Background/Ambient Data		Data Source	
pH (SU)			
Temperature (°F)			
Hardness (mg/L)			
Other:			
Nearest Downstream Public Water Supply Intake	<u>Veolia Water PA</u>		
PWS Waters	<u>Susquehanna River</u>	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	<u>30</u>

Changes Since Last Permit Issuance: None

1.3.1 Water Supply Intake

The nearest downstream water supply intake is approximately 30 miles downstream by Veolia Water PA on Susquehanna River, in Susquehanna Township, Dauphin County. No impact is expected from this discharge on the intake.

2.0 Treatment Facility Summary				
Treatment Facility Name: Camp Small Valley				
WQM Permit No.		Issuance Date		
2290406				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage			Hypochlorite	0.0065
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0065		Not Overloaded		

Changes Since Last Permit Issuance: None

2.1 Treatment Facility

The treatment system consists of 7 septic tanks serving different areas of the site, 4 constructed wetlands, chlorine contact tank, and a natural wetland. Overflow from the septic tanks flow via manholes and splits into the first 2 constructed wetlands and flows in 2 parallel trains to the second 2 wetlands. Effluent from the constructed wetlands flow to a pump station and gets pumped to a chlorine tank for disinfection. Effluent from the chlorine tank is discharge through a 100 feet perforated pipe with rock underneath to enhance filtering. Effluent will percolate through the natural wetland and eventually flow to outfall 001 on Conleys Creek if there is enough flow. The effluent may never reach the Creek which is about 100 yards away from the perforated pipe, at the entrance to the natural wetland due to low flow from the facility. Calcium Chloride is used for disinfection.

3.0 Existing Effluent Limitations and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/week	Grab
DO	XXX	XXX	Report Daily Min	XXX	XXX	XXX	1/week	Grab
TRC	XXX	XXX	XXX	2.0	XXX	5.0	1/week	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
TSS	XXX	3.25	XXX	30.0	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
TKN	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite

3.1 Compliance History

3.1.1 DMR Data for Outfall 001 (from February 1, 2025 to January 31, 2026)

Parameter	JAN-26	DEC-25	NOV-25	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25
Flow (MGD) Average Monthly	0.002	0.001	0.002	0.002	0.008	0.018	0.029	0.008	0.007	0.004	0.006	0.003
Flow (MGD) Daily Maximum	0.00035	0.0002	0.0003	0.00045	0.00034	0.0036	0.0053	0.0018	0.0015	0.0011	0.0027	0.0004
pH (S.U.) Instantaneous Minimum	7.0	7.1	7.0	6.9	6.9	6.8	6.8	6.7	6.7	6.9	6.9	6.9
pH (S.U.) Instantaneous Maximum	7.2	7.1	7.2	7.0	7.0	7.0	6.9	6.8	7.0	7.2	7.1	7.1
DO (mg/L) Daily Minimum	3.42	3.02	2.84	2.47	3.60	5.2	5.3	1.99	2.5	2.02	3.37	3.57
TRC (mg/L) Average Monthly	1.52	1.49	1.79	1.13	1.08	1.95	0.70	1.16	1.03	1.47	1.62	1.69
TRC (mg/L) Instantaneous Maximum	1.77	1.78	2.05	1.97	1.34	2.11	1.81	1.97	2.10	1.92	1.97	1.99
CBOD5 (mg/L) Average Monthly	4.15	5.0	5.38	3.77	4.45	3.17	7.1	< 3.00	< 3.00	3.63	2.75	< 3.00
TSS (lbs/day) Daily Maximum	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
TSS (mg/L) Average Monthly	3.1	4.1	5.52	6.37	16.67	5.1	9.8	4.8	7.0	3.85	3.2	< 2.53
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 1	< 1	< 1	44.56	863	< 1	2.56	< 1	< 1	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	< 1	< 1	< 1	< 1	1986	2420	< 1	16	< 1	< 1	< 1
Nitrate-Nitrite (mg/L) Annual Average		0.686										
Total Nitrogen (mg/L) Annual Average		5.03										
TKN (mg/L) Annual Average		4.34										
Total Phosphorus (mg/L) Annual Average		1.018										

3.1.2 Effluent Violations for Outfall 001, from: March 1, 2025 To: January 31, 2026

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	07/31/25	Geo Mean	863	No./100 ml	200	No./100 ml
Fecal Coliform	08/31/25	IMAX	1986	No./100 ml	1000	No./100 ml
Fecal Coliform	07/31/25	IMAX	2420	No./100 ml	1000	No./100 ml

3.1.3 Summary of DMRs:

DMRs review for the facility for the last 12 months of operation, presented on the table above in section 3.1.1 indicates permit limits have been met most of the time. Fecal Coliform effluent violations were noted during the period reviewed.

3.1.4 Summary of Inspections:

The facility has been inspected a couple of times during the previous permit cycle. No effluent violations were found during plant inspections. The facility is operated and maintained well.

4.0 Development of Effluent Limitations

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.0065</u>
Latitude	<u>40° 29' 34.00"</u>	Longitude	<u>-76° 47' 33.00"</u>
Wastewater Description: <u>Sewage Effluent</u>			

4.1 Basis for Effluent Limitations

In general, the Clean Water Act (CWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

4.1.1 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: Weekly averages are not applicable to this discharge.

4.1.2 Treatment Requirements

Since treated effluent is discharged into an unlined constructed wetland that flows into a natural wetland/swale, health criteria and underground water protection were evaluated at the point of discharge and aquatic criteria evaluated at the POFU on the Conleys Creek.

4.2 Ground Water Monitoring Requirement

The part II permit of the facility described 6 monitoring wells that needs to be monitored quarterly to ensure groundwater quality is not impacted at the site and its environs. Quarterly sampling of three monitoring wells near the lagoon system and two private water supply wells. The permits section hydrogeologist indicates that there are no problems with groundwater quality associated with the treatment system.

4.3.0 Water Quality-Based Limitations

4.3.1 WQM 7.0 Stream Model

WQM 7.0 is a water quality model DEP utilizes to establish appropriate effluent limits for CBOD₅, NH₃-N and DO in permits. The model simulates mixing and degradation of NH₃-N in the stream and compares calculated instream NH₃-N concentrations to NH₃-N water quality criteria and also simulates mixing and consumption of D.O. in the stream due to the

degradation of CBOD₅ and NH₃N and compares calculated instream D.O. concentrations to D.O. water quality criteria and recommends effluent limits.

4.3.2 Streamflows

Streamflows for the water quality analysis were determined by correlating with the yield of USGS gauging station No 01568500 On Clark Creek near Carsonville. The Q₇₋₁₀ and drainage area at the gage is 2.31ft³/s and 22.5 mi² respectively. The resulting streamflows are as follows:

- $Q_{7-10} = (2.31\text{ft}^3/\text{s}) / 22.5 \text{ mi}^2 = 0.1027\text{ft}^3/\text{s} / \text{mi}^2$
- $Q_{30-10} / Q_{7-10} = 1.17$
- $Q_{1-10} / Q_{7-10} = 0.79$

The drainage area at POFU= 1.42 mi²

The Q₇₋₁₀ at POFU = 1.6 mi² x .10 ft³/s/mi² = 0.16 ft³/s.

4.3.3 NH₃N Calculations

NH₃N calculations will be based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the instream NH₃N criteria used in the attached computer model of the stream:

- Discharge pH = 6.8 (DMR median July – Sept.)
- Discharge Temperature = 25 ° C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 20 °C (Default)
- Background NH₃-N = 0.0 (Default)
- Discharge flow = 0.0065MGD

4.3.4 CBOD₅ & NH₃-N

The attached result of the WQM 7.0 stream model presented in attachment B indicates that, an average monthly limit of 25mg/l CBOD₅. is adequate to protect the water quality of the stream at the POFU. This agrees with the previous permit. Past DMRs and inspection reports show that the STP has been consistently achieving below 25 mg/l CBOD₅. Therefore, an AML 25 mg/l CBOD₅. and 50mg/l daily maximum are again recommended for this permit cycle. The attached results of the WQM 7.0 stream model also indicates that no limit on NH₃-N as a monthly average is necessary to protect the aquatic life from toxicity effects at the POFU.

4.3.5 Dissolved Oxygen

The existing permit requires monitoring for Dissolved Oxygen (DO). DEP's Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001, 10/97) suggests that either the adopted minimum stream D.O. criteria for the receiving stream or the effluent level determined through water quality modeling be used for the limit. The model was run with a DO of 1.0 to evaluate the impact on the stream. Print out indicate a discharge a limit of 1mg/l is adequate; and the discharge may never reach the stream. Therefore, DO monitoring recommended in the existing permit will be continued during this current permit renewal.

4.3.6 Total Suspended Solids(TSS)

There are no water quality criteria for TSS. An average monthly limit of 30 mg/l in the existing permit based on the minimum level of effluent quality attainable by secondary treatment as defined in 40 CFR Chapter 1, Part 133, Section 133.102b(1) and 25 PA § 92a.47(a)(1) will continue. IMAX of 60mg/l is adequate to meet the 3.25mg/l TMDL sediment load allocated to this facility.

4.3.7 Toxics

No parameter of concern is associated with this discharge.

4.3.8 Chesapeake Bay Strategy:

The Department formulated a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). Sewage discharges have been prioritized based on their delivered TN and TP loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers received annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. These limits may be achieved through a combination of treatment technology, credits, or offsets if approved by DEP. Phase 4 (0.2 - 0.4mgd) and Phase 5(below 0.2mgd) are required to monitor and report TN series and TP during permit renewal. Any facility in Phases 4 and 5 that undergoes expansion is subjected to cap load right away. This facility is, classified as a phase 5, and has been monitoring and will continue monitoring Nitrate-Nitrite as N, Total Kjeldahl Nitrogen, Total Nitrogen and Total Phosphorus annually throughout the next permit cycle to collect data.

4.3.9 Total Residual Chlorine

The attached TRC results presented in attachment C utilizes the equations and calculations presented in the Department's 2003 Implementation Guidance for Residual Chlorine (TRC) (ID # 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92a, Section 92a.48 (b) which establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. The attached result indicates that, a water quality limit of 2.34 mg/l monthly average and 7.64 mg/l IMAX would be needed to prevent toxicity concerns at POFU which is located about 100 yards from the discharge point. The permit was written with a facility-specific BAT limit of 2.0 mg/l monthly average and 5.0 mg/l IMAX to discourage over-chlorination while ensuring adequate disinfection at the site where contact with the effluent by campers is possible. The TRC limit is higher than the standard BAT limit of 0.5 mg/l to ensure adequate disinfection to protect campers who may come into contact with the effluent. Also, the effluent may never reach the creek unless there is heavy rainfall in which case, the effluent will be heavily diluted prior to reaching the creek.

4.3.10 Coliform and E. Coli

The existing Fecal Coliform limit is consistent with the technology limits recommended in 92a.47(a)(4) and (a)(5) and will remain in the permit. In March of 2021, EPA approved DEP's Triennial Review of Water Quality Standards, which included a new swimming season criterion for E. coli. As a result, DEP is including monitoring requirements for E. Coli in new and renewed sewage permits above 2000gpd. Monitoring frequency is based on annual average flow as follows: 1/month for design flows \geq 1 MGD, 1/quarter for design flows \geq 0.05 and $<$ 1 MGD and 1/year for design flows of 0.002 and $<$ 0.05 MGD. Your discharge of 0.0065 MGD requires 1/year monitoring as included in the permit.

5.0 Other Requirements

5.1 Anti-backsliding

Not applicable to this permit

5.2 Stormwater:

No storm water outfall is associated with this facility

5.3 Special Permit Conditions

The permit will contain the following special conditions:

Stormwater Prohibition, Approval Contingencies, Proper Waste/solids Management, Septic Tank maintenance requirement and Chlorine minimization.

5.5 Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The discharge goes to a natural wetland to infiltrate effluent rather than direct discharge to High Quality waterways. There is no known impact on the High-Quality Waters by this discharge. No Exceptional Value Waters are impacted by this discharge.

5.6 Class A Wild Trout Fisheries

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

5.7 303d Listed Streams:

The discharge is not located on a 303d listed stream segment, however portions Armstrong Creek Watershed is impaired due to sediment. A Total Maximum Daily Load (TMDL) was developed and approved in September 2011 for sediment to address impairment of the watershed. Excessive siltation resulting from agricultural activities has been identified as the cause of the impairment in the watershed. A waste load of 1,188lbs/yr or 3.25lbs/day based on a maximum discharge of 60mg/l at design flow of 0.0065MGD was allocated to this facility which is the only point source discharger in the watershed. Currently, PA does not have water quality criteria for sediment. TSS is used to control sediment. A TSS mass load of 3.25lbs/day will be written in the permit. The facility should be able to meet this limit without difficulty since the maximum concentration limit in the permit is 60mg/l.

5.8 Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs).

5.9 Effluent Monitoring

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

6.0 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.

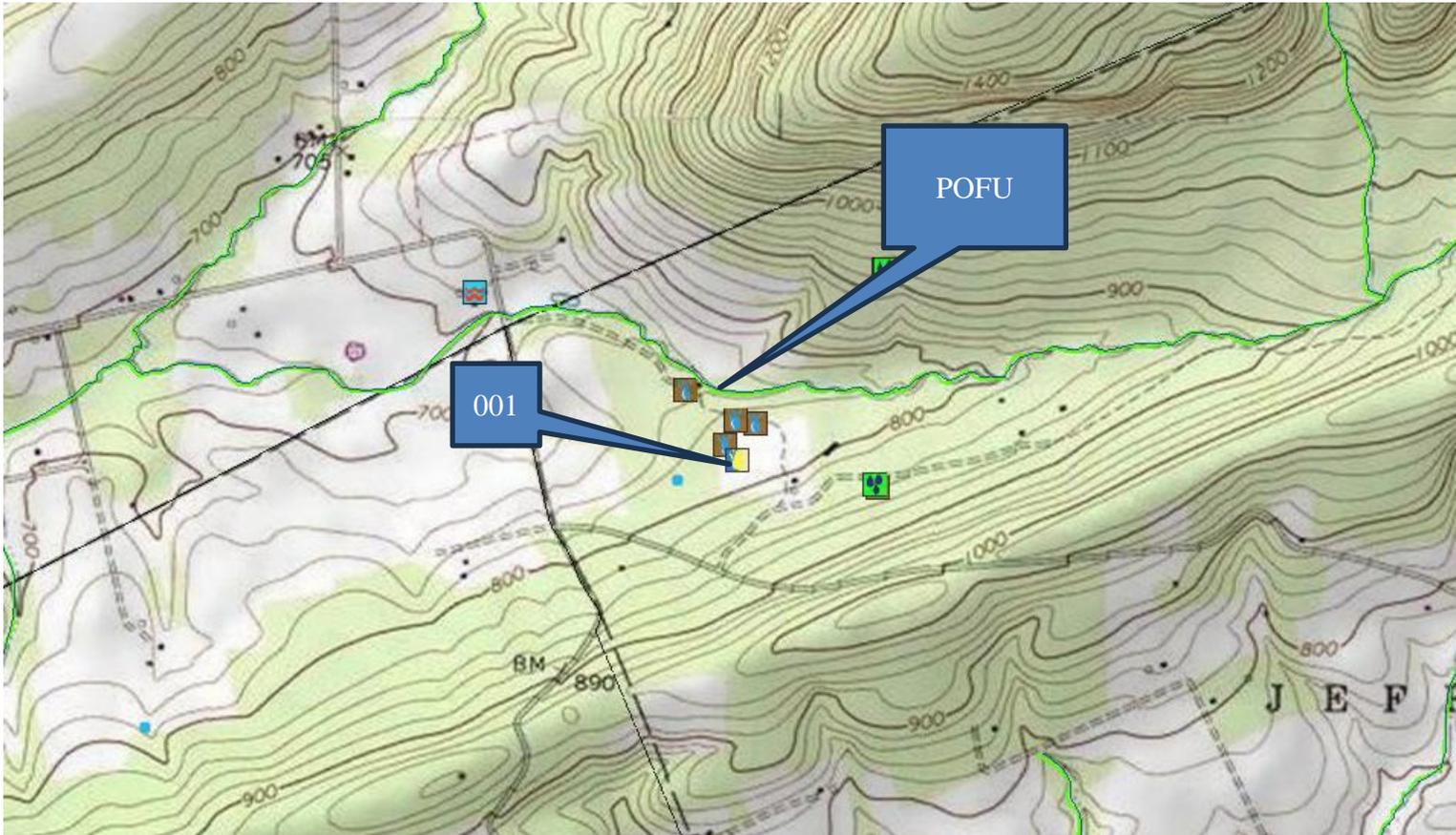
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/week	Grab
DO	XXX	XXX	Report Daily Min	XXX	XXX	XXX	1/week	Grab
TRC	XXX	XXX	XXX	2.0	XXX	5.0	1/week	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
TSS	XXX	3.25	XXX	30.0	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation
TKN	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite

Compliance Sampling Location: At Outfall 001

7.0 Tools and References Used to Develop Permit	
<input checked="" type="checkbox"/>	WQM for Windows Model (see Attachment B)
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment [REDACTED])
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment C)
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [REDACTED])
<input checked="" type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input checked="" type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input checked="" type="checkbox"/>	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input checked="" type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input checked="" type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input checked="" type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input type="checkbox"/>	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
<input type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input checked="" type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input checked="" type="checkbox"/>	SOP: Establishing effluent limits for individual sewage permits.
<input type="checkbox"/>	Other: [REDACTED]

Attachments

A. Topographical Map



B. WQM Model Results

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
06C		16835		Trib 16835 to Armstrong 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)
4.680	Girls Scouts PA	PA0084476	0.007	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			1

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
06C	16835	Trib 16835 to Armstrong Creek	4.680	790.00	1.60	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	Tributary pH	Stream Temp	Stream pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.103	0.00	0.00	0.000	0.000	0.0	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
Girls Scouts PA	PA0084476	0.0065	0.0065	0.0065	0.000	25.00	6.80

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	1.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
06C	16835	Trib 16835 to Armstrong Creek	3.630	670.00	2.09	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.103	0.00	0.00	0.000	0.000	0.0	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)
GBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	1.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>			<u>Stream Name</u>							
06C		16835			Trib 16835 to Armstrong 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												
4.680	0.16	0.00	0.16	.0101	0.02165	.386	5.63	14.59	0.08	0.796	20.29	6.99
Q1-10 Flow												
4.680	0.13	0.00	0.13	.0101	0.02165	NA	NA	NA	0.07	0.901	20.36	6.98
Q30-10 Flow												
4.680	0.19	0.00	0.19	.0101	0.02165	NA	NA	NA	0.09	0.733	20.25	6.99

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.79	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.17	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin Stream Code Stream Name
06C 16835 Trib 16835 to Armstrong 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
4.680	Girls Scouts PA	16.52	50	16.52	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
4.680	Girls Scouts PA	1.87	25	1.87	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
4.68	Girls Scouts PA	25	25	25	25	1	1	0	0

WQM 7.0 D.O. Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
06C	16835	Trib 16835 to Armstrong Creek		
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
4.680	0.007	20.288	6.986	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
5.627	0.386	14.591	0.081	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
3.32	0.449	1.44	0.716	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
7.826	23.559	Owens	5	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.796	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.080	3.20	1.36	8.20
	0.159	3.09	1.28	8.20
	0.239	2.98	1.21	8.20
	0.319	2.87	1.14	8.20
	0.398	2.77	1.08	8.20
	0.478	2.67	1.02	8.20
	0.557	2.58	0.96	8.20
	0.637	2.49	0.91	8.20
	0.717	2.40	0.86	8.20
	0.796	2.31	0.81	8.20

C. TRC Calculations

TRC EVALUATION				
Input appropriate values in A3:A9 and D3:D9				
0.16	= Q stream (cfs)	0.5	= CV Daily	
0.0065	= 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)	
10	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)	
0	= % Factor of Safety (FOS)	0	= Decay Coefficient (K)	
Source	Reference	AFC Calculations		Reference CFC Calculations
TRC	1.3.2.iii	WLA_afc = 5.095		1.3.2.iii WLA_cfc = 4.960
PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373		5.1c LTAMULT_cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc = 1.898		5.1d LTA_cfc = 2.883
Source	Effluent Limit Calculations			
PENTOXSD TRG	5.1f	AML_MULT = 1.231		
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 2.337		AFC
		INST MAX LIMIT (mg/l) = 7.642		
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)			