Pennsylvania Department of Environmental Protection

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0034029**
Facility Type	**Municipal**	APS ID	**605934**
Major / Minor	**Minor**	Authorization ID	**1466684**

Applicant and Facility Information

Applicant Name	**Lehigh County Authority**	Facility Name	**Sand Spring WWTP**
Applicant Address	PO Box 3348, 1053 Spruce Road	Facility Address	4150 Sand Springs Road
	Allentown, PA 18106-9408		Schnecksville, PA 18078
Applicant Contact	Andrew Moore, Director of Plant Operations	Facility Contact	Andrew Moore, Director of Plant Operations
Applicant Phone	(610) 597-8100	Facility Phone	(610) 597-8100
Client ID	67774	Site ID	2941
Ch 94 Load Status	Existing hydraulic overload condition & existing/projected organic overload condition (per 2023 Chapter 94 Report)	Municipality	North Whitehall Township
Connection Status	-	County	Lehigh
Date Application Received	December 28, 2023	EPA Waived?	Yes
Date Application Accepted	January 2, 2024	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 0.035 MGD of treated sewage into an Unnamed Tributary to Coplay Creek, a Cold-Water Fishery, Migratory Fish (CWF, MF) receiving stream in State Water Plan Basin 2-C (Lower Lehigh River). 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.

Limitations for pH and Fecal Coliform are technology-based and carried over from the previous permit.

Limitations for $CBOD_5$, Total Suspended Solids (TSS), Dissolved Oxygen (DO), and Total Zinc are water quality-based and carried over from the previous permit.

WQM modeling recommended stricter summertime limitations for Ammonia-Nitrogen (1.8 mg/L monthly average, 3.5 mg/L IMAX). These limitations will come into effect three (3) years after the permit effective date. Wintertime monitoring/reporting for Ammonia-Nitrogen has also been updated to three times the new summertime limitations (5.4 mg/L monthly average, 10.5 mg/L IMAX). The summertime and wintertime limitations for Ammonia-Nitrogen from the previously issued permit will be in effect the first three (3) years of the permit. The Ammonia-Nitrogen mass limitations (0.36 lbs/day for summertime and 1.1 lbs/day for wintertime) have been maintained in this permit. These existing mass limitations are stricter than the new water quality modeling.

The facility utilizes Ultraviolet (UV) disinfection as the primary disinfection method; therefore, the TRC average monthly effluent limitation has been removed. In the event the facility uses chlorine for cleaning purposes or as a back-up disinfection

Approve	Deny	Signatures	Date
X		Allison Seyfried Zukosky Allison Seyfried Zukosky / Project Manager	December 5, 2025
X		Edward Dudick, P.E. / Environmental Engineer Manager	December 5, 2025

Summary of Review

option, Total Residual Chlorine (TRC) should be sampled "daily when discharging" (see requirements under Part C.I.D). The TRC Calculation Spreadsheet did not recommend a stricter IMAX limitation than the previous permit.

Per current Standard Operating Procedures for Publicly Owned Treatment Plants, the raw sewage influent monitoring/ reporting for TSS and $CBOD_5$ has been maintained in the permit.

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.

The annual monitoring/reporting for Total Aluminum has been maintained in the permit to continue monitoring the potential of alum over-usage due to the alum-based chemical feed system for phosphorous removal.

Pollutant sampling results submitted with the permit application were entered into the Toxic Management Spreadsheet (TMS). The TMS did not recommend any additional limitations or monitoring/reporting.

The latest DRBC Docket No. D-2017-012 CP-2 does not require any additional monitoring/reporting or limitations. The concentration limitations for Total Dissolved Solids, the monitoring/reporting for 85% minimum $CBOD_5$ and TSS Percent Removal, and the mass limitations for Total Nitrogen, Nitrate as N, and Total Phosphorous have been maintained in this permit. The monitoring/reporting for Nitrite as N and Total Kjeldahl Nitrogen has also been maintained.

For this permit renewal, all monitoring frequencies for parameters with limitations are consistent with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (document no. 362-0400-001).

Outfall 002 is the only Outfall for this facility. Outfall 001 was abandoned with the old treatment plant and is no longer in use. The previous permit had limitations for Outfall 001 before the new treatment plant was completed and for Outfall 002 after the construction was completed. eDMR Reporting shifted from Outfall 001 to Outfall 002 for the May 1, 2021 through May 31, 2021 reporting period. The Post Construction Certification for the WQM permit associated with the construction of the new plant was signed and returned to the DEP. The Certification indicated the construction was completed on January 4, 2022. The signed date was January 9, 2023.

There are no representative stream gages in the vicinity of the outfall and the drainage area at Outfall 002 is too small for USGS StreamStats to estimate accurate low flow values. The receiving stream, Unnamed Tributary to Coplay Creek, also does not appear on eMapPA and does not have a Stream Code. To remain consistent with the previous permit and modeling, the drainage area, LFY, and $Q_{7\text{-}10}$ values from the previous permit were used again for modeling in this permit renewal. The previous permit used 0.15 mi^2 for the drainage area, but indicated the actual value was 0.157813 mi^2. USGS StreamStats indicated a drainage area of 0.16 mi^2 at Outfall 002, therefore, a drainage area of 0.16mi^2 was used for modeling.

Since the receiving stream does not appear in eMapPA, no RMI values could be obtained. The measurement tool on USGS's StreamStats Interactive Map was used to measure Outfall 002 on the Unnamed Tributary to Coplay Creek down to the confluence with Coplay Creek. A distance of 1,138 feet (or 0.2155 miles) was measured. 0.2155 and 0.0 were used as the RMI values for modeling. The drainage area at the confluence with Coplay Creek was delineated using USGS's StreamStats Interactive Map and elevations were obtained using the elevation profile feature of StreamStats.

The existing permit expired on June 30, 2024 and the application for renewal was received on time.

A Water Management System Inspection query indicated a Routine/Partial Inspection was performed on December 10, 2024.

There are currently eight open violations for this client (three for this facility) that may need to be resolved before issuance of the final permit:

1. 12/13/2022 - Violation ID 978129 – Violation Code 92A.44 – NPDES - Violation of effluent limits in Part A of permit. (WPC NPDES - Program Specific ID: PA0034029).

2. 05/09/2024 - Violation ID 8200585 – Violation Code 92A.44 – NPDES - Violation of effluent limits in Part A of permit. (WPC NPDES - Program Specific ID: PA0034029).

Summary of Review

3. 05/09/2024 - Violation ID 8200586 – Violation Code 92A.41(A)10C – NPDES - Failure to collect representative samples. (WPC NPDES - Program Specific ID: PA0034029).

4. 10/09/2025 - Violation ID 8252490 – Violation Code 92A.44 – NPDES - Violation of effluent limits in Part A of permit. (WPC NPDES - Program Specific ID: PA0036081).

5. 06/06/2024 - Violation ID 8190603 – Violation Code 92A.44 – NPDES - Violation of effluent limits in Part A of permit. (WPC NPDES - Program Specific ID: PA0070254).

6. 03/07/2022 - Violation ID 947817 – Violation Code 92A.41(B) – NPDES - Failure to orally notify DEP within 4 hours of a pollution incident or submit written report within 5 days of incident (WPC NPDES - Program Specific ID: PAS902202).

7. 03/07/2022 - Violation ID 947822 – Violation Code 92A.41(A)4 NPDES - Failure to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of a permit (WPC NPDES - Program Specific ID: PAS902202).

8. 03/07/2022 - Violation ID 947823 – Violation Code 92A.44 – NPDES - Violation of effluent limits in Part A of permit. (WPC NPDES - Program Specific ID: PAS902202).

Sludge use and disposal description and location(s): As per the permittee directly and the NPDES Renewal Application, sludge is hauled to the Lehigh County Authority Pre-Treatment Plant in Allentown, PA by Millers Sanitary Service.

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.	002	Design Flow (MGD)	0.035
Latitude	40º 40' 9.10"	Longitude	-75º 35' 50.50"
Quad Name	Cementon	Quad Code	1341
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Coplay Creek (CWF, MF)	Stream Code	N/A for Unnamed Tributary (3642 for Coplay Creek)
NHD Com ID	26293303	RMI	-
Drainage Area	0.157813 mi^2 (rounded to 0.16 mi^2) (previous permit and USGS StreamStats)	Yield (cfs/mi^2)	0.0568
Q_{7-10} Flow (cfs)	0.0085	Q_{7-10} Basis	Carried over from previous permit
Elevation (ft)	545.51	Slope (ft/ft)	-
Watershed No.	2-C	Chapter 93 Class.	CWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION, SILTATION		
Source(s) of Impairment	AGRICULTURE, RURAL (RESIDENTIAL AREAS)		
TMDL Status	-	Name	-

Background/Ambient Data		Data Source
pH (SU)	6.92	11/3/2017 DEP Biologist (Sherrill R. Leap) Memo UNT Coplay Creek LCA Sand Spring WWTP Table 1 Upstream Station
Temperature (°F)	13.01	See above
Hardness (mg/L)	446.0	See above
Other:	50.0	See above

Nearest Downstream Public Water Supply Intake		Morrisville Municipal Authority	
PWS Waters	Delaware River	Flow at Intake (cfs)	-
PWS RMI	60.01	Distance from Outfall (mi)	~ 75

Treatment Facility Summary

Treatment Facility Name: Lehigh County Auth-Sand Springs WWTP

WQM Permit No.	Issuance Date	Scope
3917402 A-2	4/9/2024	Addition of integrated fixed film activated sludge process, upgrade tanks, update chemical feed equipment, upgrade SBR blowers, and installation of MLSS monitoring probe and ammonia monitoring probe to each SBR
3917402 A-1	7/17/2023	New chemical feed equipment for zinc removal
3917402	12/20/2018	Replacement of WWTP with two new SBRs and UV Disinfection. Outfall 001 abandoned and replaced with Outfall 002.
3971410-T1	4/26/2005	Transfer of original Extended Aeration STP to LCA circa 2005 per application.
3971410	1972	Original Extended Aeration STP with chlorine disinfection constructed circa 1972 per application.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	SBRs	Ultraviolet (UV)	0.0289 (2019-2023, per 2023 Chapter 94 Report)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.035	85	Not Overloaded	Holding Tank	Hauled

Compliance History

DMR Data for Outfall 002 (from November 1, 2024 to October 31, 2025)

Parameter	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24
Flow (MGD) Average Monthly	0.027927	0.031408	0.02945	0.036141	0.040231	0.03742	0.0316	0.032788	0.031961	0.030198	0.031351	0.036927
Flow (MGD) Daily Maximum	0.045148	0.057595	0.063565	0.064667	0.059602	0.055275	0.051108	0.045713	0.042779	0.039473	0.044393	0.055128
pH (S.U.) Instantaneous Minimum	6.8	6.94	7.13	6.81	7.28	7.08	7.03	6.96	6.71	6.67	6.75	6.92
pH (S.U.) Instantaneous Maximum	7.92	8.12	8.39	7.89	7.88	7.58	7.57	7.93	8.44	8.15	7.65	8.04
DO (mg/L) Instantaneous Minimum	6.04	6.11	6.01	6.16	6.17	6.11	6.2	6.13	6.77	6.2	6.09	6.09
TRC (mg/L) Average Monthly	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
CBOD5 (lbs/day) Average Monthly	0.2	0.3	< 0.3	0.6	< 1.2	< 1.0	0.3	1.0	1.7	0.4	4.0	2.3
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	65	< 101	50	256	71	81	145	184	315	123	122	624
CBOD5 (lbs/day) Raw Sewage Influent Daily Maximum	65	< 101	50	256	71	81	145	184	315	123	122	624
CBOD5 (lbs/day) Weekly Average	0.3	< 0.3	0.5	0.7	1.8	1.5	0.4	1.2	3.1	0.5	9.5	3.4
CBOD5 (mg/L) Average Monthly	0.8	< 1.0	< 1.5	2.0	< 4.0	< 4.0	1.5	3.5	6.0	2.0	13.3	8.0
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	316	323	273	776	246	316	622	644	903	646	403	1426
CBOD5 (mg/L) Raw Sewage Influent Daily Maximum	316	323	273	776	246	316	622	644	903	646	403	1426

CBOD5 (mg/L) Weekly Average	1.0	1.0	2.0	2.0	6.0	6.0	2.0	5.0	10.0	2.0	31.0	11.0
CBOD5 % Removal (%) Minimum Monthly Average	100	100	100	100	99	98	100	99	99	100	92	99
TSS (lbs/day) Average Monthly	< 0.2	< 0.9	< 0.3	0.4	1.9	2.6	0.3	0.6	0.7	0.4	0.7	1.1
TSS (lbs/day) Raw Sewage Influent Average Monthly	13	< 14	8	118	13	72	61	228	304	136	123	729
TSS (lbs/day) Raw Sewage Influent Daily Maximum	13	< 14	8	118	13	181	61	228	304	136	123	729
TSS (lbs/day) Weekly Average	0.3	1.6	0.4	0.5	3.4	5.8	0.4	0.7	0.9	0.5	1.2	1.2
TSS (mg/L) Average Monthly	< 1.0	< 4.5	< 1.5	1.5	6.5	8.4	1.5	2.0	2.5	2.0	2.5	4.0
TSS (mg/L) Raw Sewage Influent Average Monthly	61	44	46	356	44	210	262	798	873	712	405	1664
TSS (mg/L) Raw Sewage Influent Daily Maximum	61	44	46	356	44	506	262	798	873	712	405	1664
TSS (mg/L) Weekly Average	1.0	8.0	2.0	2.0	11.0	18.0	2.0	2.0	3.0	3.0	4.0	5.0
TSS % Removal (%) Minimum Monthly Average	100	98	96	100	95	96	99	100	100	100	100	100
Total Dissolved Solids (lbs/day) Average Monthly	118	177	114	121	82	106	98	135	177	87	116	128
Total Dissolved Solids (mg/L) Average Monthly	572.0	566.0	586.0	368.0	348.0	430.0	466.0	560.0	574.0	480.0	380.0	412.0
Total Dissolved Solids (mg/L) Daily Maximum	572.0	566.0	586.0	368.0	348.0	430.0	466.0	560.0	574.0	480.0	380.0	412.0
Fecal Coliform (No./100 ml) Geometric Mean	2	< 2	< 3	< 2	< 5	< 165	< 5	> 246	< 5	< 5	< 5	427

Fecal Coliform (No./100 ml) Instantaneous Maximum	5	5	< 10	< 5	< 5	8665	5	> 12098	5	5	5	8665
Total Nitrogen (lbs/day) Average Monthly	4.1	5.6	4.2	3.9	6.7	6.8	3.4	4.3	5.2	4.0	6.6	9.2
Total Nitrogen (mg/L) Average Monthly	20	22.05	21.7	11.72	26.19	21.19	16.2	17.45	20.94	22.1	24	28.8
Total Nitrogen (mg/L) Daily Maximum	20	29.5	21.7	11.72	41.39	22.37	16.2	24.88	22.87	22.1	27.3	33.05
Ammonia (lbs/day) Average Monthly	< 0.05	0.10	0.20	< 0.20	3.80	2.60	0.07	1.0	1.1	0.2	0.7	4.0
Ammonia (mg/L) Average Monthly	< 0.2	0.5	0.8	< 0.7	12.6	7.7	0.3	3.9	4.1	0.8	2.4	12.4
Ammonia (mg/L) Daily Maximum	0.3	0.5	0.8	1.2	28.1	16.0	0.3	13.4	7.3	0.8	10	5.0
Nitrate (lbs/day) Average Monthly	3.8	4.6	4.0	2.8	1.9	3.1	2.9	2.5	2.8	3.7	4.8	< 2.0
Nitrate (mg/L) Average Monthly	18.4	18.27	20.8	8.42	7.1	9.42	13.7	10.25	12.05	20.5	17.9	< 5.89
Nitrate (mg/L) Daily Maximum	18.4	28.4	20.8	8.42	9.71	11	13.7	12	17.6	20.5	25.2	8.66
Nitrite (lbs/day) Average Monthly	< 0.02	< 0.06	< 0.02	< 0.03	< 0.05	< 0.1	< 0.02	< 0.02	< 0.03	< 0.02	< 0.05	2
Nitrite (mg/L) Average Monthly	< 0.1	< 0.19	< 0.1	< 0.1	< 0.17	< 0.39	< 0.1	< 0.1	< 0.12	< 0.1	< 0.2	6.81
Nitrite (mg/L) Daily Maximum	< 0.1	0.65	< 0.1	< 0.1	0.21	0.92	< 0.1	< 0.1	0.17	< 0.1	0.3	12.2
TKN (lbs/day) Average Monthly	0.3	< 0.9	0.2	1	5	2	0.5	2	2	0.3	2	5
TKN (mg/L) Average Monthly	1.5	< 3.6	0.8	3.2	19.8	8	2.4	7.1	8.8	1.5	5.9	16.1
TKN (mg/L) Daily Maximum	1.5	8.3	0.8	3.2	32.5	14.9	2.4	15.7	11.9	1.5	12.6	24.8
Total Phosphorus (lbs/day) Average Monthly	0.30	0.40	0.20	0.50	0.20	0.20	0.40	1.13	0.60	0.40	0.50	0.50
Total Phosphorus (mg/L) Average Monthly	1.52	1.88	0.89	1.78	0.77	0.87	1.83	3.75	2.74	1.82	1.53	1.66
Total Phosphorus (mg/L) Daily Maximum	2.07	2.5	1.17	3.3	1.05	1.85	3.03	13.6	3.17	2.21	2.16	1.73

Total Aluminum (lbs/day) Annual Average											0.1	
Total Aluminum (mg/L) Annual Average											0.193	
Total Aluminum (mg/L) Daily Maximum											0.193	
Total Zinc (lbs/day) Average Monthly	< 0.02	< 0.02	< 0.02	< 0.03	< 0.03	< 0.03	< 0.02	0.03	< 0.03	< 0.02	< 0.03	< 0.03
Total Zinc (mg/L) Average Monthly	< 0.100	< 0.100	< 0.100	< 0.102	< 0.100	< 0.100	< 0.100	0.124	< 0.103	< 0.102	< 0.105	< 0.100
Total Zinc (mg/L) Daily Maximum	< 0.100	< 0.100	< 0.100	0.109	< 0.100	< 0.100	< 0.100	0.157	0.110	0.110	0.114	< 0.100

Compliance History

Effluent Violations for Outfall 002, from: December 1, 2024 To: October 31, 2025

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
CBOD5	12/31/24	Wkly Avg	9.5	lbs/day	8.8	lbs/day
CBOD5	12/31/24	Wkly Avg	31.0	mg/L	30.0	mg/L
TSS	05/31/25	Wkly Avg	5.8	lbs/day	4.4	lbs/day
TSS	05/31/25	Wkly Avg	18.0	mg/L	15.0	mg/L
Fecal Coliform	03/31/25	Geo Mean	> 246	No./100 ml	2000	No./100 ml
Fecal Coliform	05/31/25	IMAX	8665	No./100 ml	1000	No./100 ml
Fecal Coliform	03/31/25	IMAX	> 12098	No./100 ml	10000	No./100 ml
Total Nitrogen	06/30/25	Avg Mo	6.7	lbs/day	5.4	lbs/day
Total Nitrogen	05/31/25	Avg Mo	6.8	lbs/day	5.4	lbs/day
Total Nitrogen	12/31/24	Avg Mo	6.6	lbs/day	5.4	lbs/day

Total Nitrogen	09/30/25	Avg Mo	5.6	lbs/day	5.4	lbs/day
Ammonia	06/30/25	Avg Mo	3.80	lbs/day	.36	lbs/day
Ammonia	05/31/25	Avg Mo	2.60	lbs/day	.36	lbs/day
Ammonia	05/31/25	Avg Mo	7.7	mg/L	3.0	mg/L
Ammonia	06/30/25	Avg Mo	12.6	mg/L	3.0	mg/L
Nitrate	09/30/25	Avg Mo	4.6	lbs/day	4.5	lbs/day
Nitrate	12/31/24	Avg Mo	4.8	lbs/day	4.5	lbs/day
Total Phosphorus	02/28/25	Avg Mo	0.60	lbs/day	.57	lbs/day
Total Phosphorus	03/31/25	Avg Mo	1.13	lbs/day	.57	lbs/day
Total Zinc	03/31/25	Daily Max	0.157	mg/L	.151	mg/L

Summary of Inspections: The most recent inspection report dated December 10, 2024 indicates all parts of the most recent WQM Permit amendment issued on 4/9/2024 are on-line and operating. The operator states in the report that that continually making changes to the cycle times in the SBRs to get the best results.

A Compliance Plan was also submitted in April 2023 and revised in July 2024. The plan discusses the known issues with the plant. An engineering firm, Tetra Tech, assisted LCA in evaluating the facility and providing a report. There is a chance a new regional treatment facility that accepts wastewater from the Sand Spring serve area and other areas is a viable alternative. There is also an option to potential expand the Sand Spring WWTP. The short term tasks include upgrades to the facility which are already taking place (please see the Treatment Facility Summary table on page 5 of this fact sheet for list of WQM Permits).

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 0.035
Latitude 40º 40' 9.10" **Longitude** -75º 35' 50.50"
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
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)
E. Coli (No./100 ml)	Report	IMAX	-	92a.61

Water Quality-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Model
Dissolved Oxygen	6.0	Minimum	Previous Modeling/Permit
Total Residual Chlorine	0.1	IMAX	TRC Calculation Spreadsheet / Previous Permit
CBOD5 May 1 - Oct 31	10.0 2.9 lbs/day	Average Monthly	Previous Permit
	15.0 4.4 lbs/day	Average Weekly	
	20.0	IMAX	
CBOD5 Nov 1 - Apr 30	20.0 5.8 lbs/day	Average Monthly	Previous Permit
	30.0 8.8 lbs/day	Average Weekly	
	40.0	IMAX	
Total Suspended Solids	10.0 2.9 lbs/day	Average Monthly	Previous Permit
	15.0 4.4 lbs/day	Average Weekly	
	20.0	IMAX	
Ammonia-Nitrogen May 1 - Oct 31	1.8 0.36 lbs/day	Average Monthly	WQM 7.0
	Report	Average Weekly	
	3.5	IMAX	
Ammonia-Nitrogen Nov 1 - Apr 30	5.4 1.1 lbs/day	Average Monthly	WQM 7.0
	Report	Average Weekly	
	10.5	IMAX	
Total Zinc	0.130	Average Monthly	Previous PENTOX Modeling/Previous Permit
	0.151	Average Weekly	
	0.193	IMAX	
Total Phosphorus	0.57 lbs/day	Average Monthly	DRBC Requirement/Previous Permit

Total Nitrogen	5.4 lbs/day	Average Monthly	DRBC Requirement/Previous Permit
Nitrate as N	4.5 lbs/day	Average Monthly	DRBC Requirement/Previous Permit
Total Dissolved Solids	1,000	Average Monthly	DRBC Requirement/Previous Permit
	2,000	Daily Maximum	
	2,500	IMAX	
CBOD5 Minimum % Removal (%)	85%	Minimum Monthly Average	DRBC Requirement/Previous Permit
Total Suspended Solids Minimum % Removal (%)	85%	Minimum Monthly Average	DRBC Requirement/Previous Permit
CBOD5 Raw Sewage Influent	Report	Average Monthly Daily Maximum	POTW Requirement/ DRBC Requirement
TSS Raw Sewage Influent	Report	Average Monthly Daily Maximum	POTW Requirement
Nitrite an N	Report	Average Monthly Daily Maximum	DRBC Requirement/Previous Permit
Total Kjeldahl Nitrogen	Report	Average Monthly Daily Maximum	DRBC Requirement/Previous Permit
Total Aluminum	Report	Annual Average	Previous Permit

Anti-Backsliding

No limitations were made less stringent.

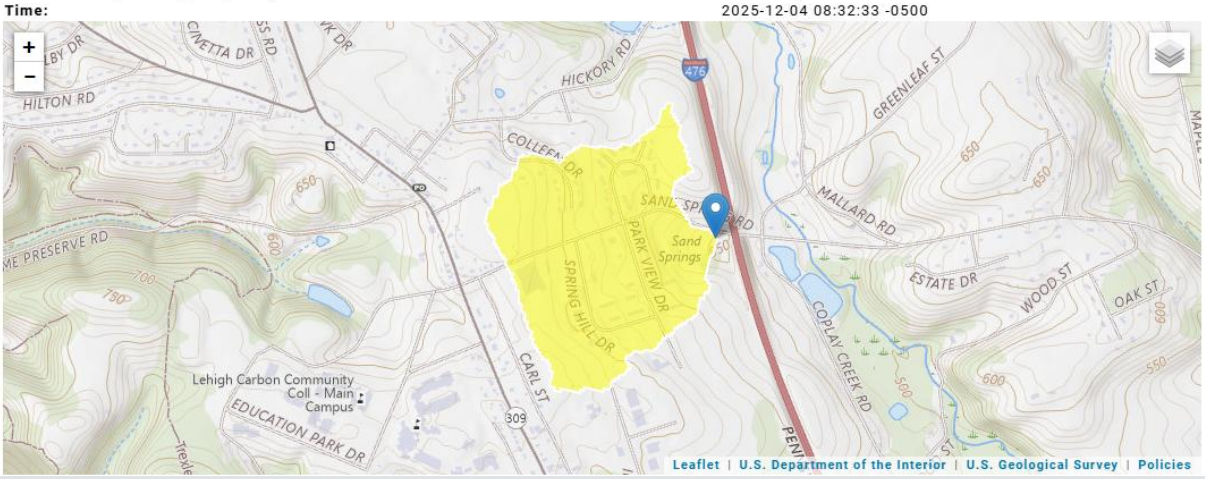
Modeling Data from USGS StreamStats Data:

At Outfall 002 on Unnamed Tributary to Coplay Creek:

RMI	Drainage Area (mi^2)	Elevation (ft)
0.2155	0.16	545.51

StreamStats Report

Region ID: PA
Workspace ID: PA20251204133210743000
Clicked Point (Latitude, Longitude): 40.66925, -75.59731
Time: 2025-12-04 08:32:33 -0500



DRNAREA	Drainage Area	0.16	square miles

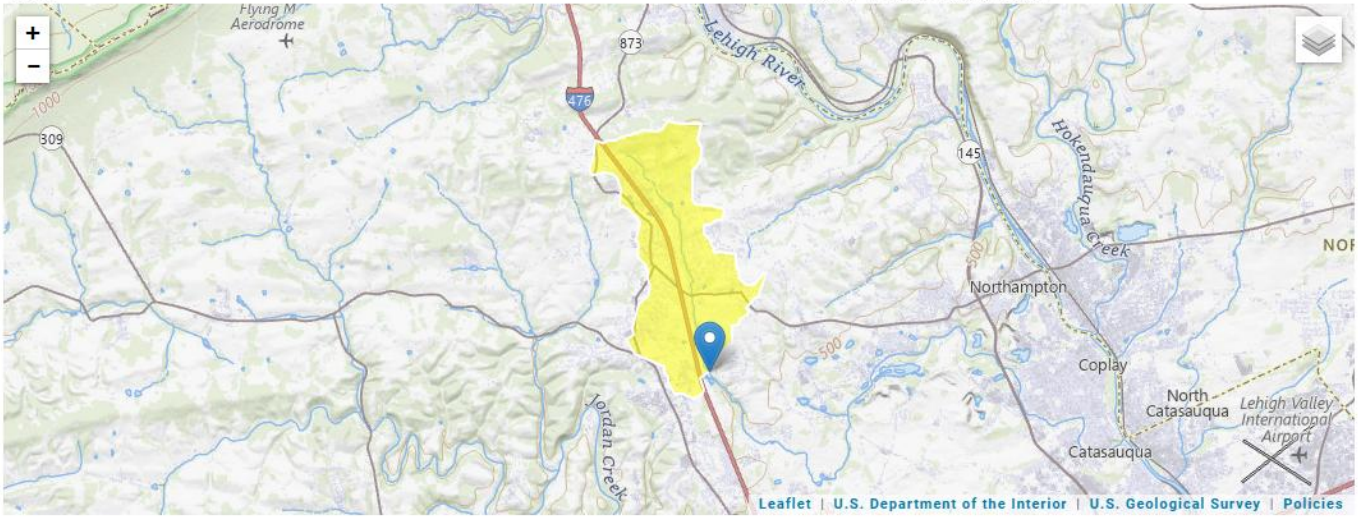
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

At confluence with Coplay Creek (3642):

RMI	Elevation (ft)	Drainage Area (mi²)
0.00 10.45 (on Coplay Creek)	514.16	4.51

StreamStats Report

Region ID:	PA
Workspace ID:	PA20251204135427208000
Clicked Point (Latitude, Longitude):	40.66929, -75.59393
Time:	2025-12-04 08:54:50 -0500



DRNAREA	Drainage Area	4.51	square miles

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Modeling Data from Previous Permit:

Low Flow Yield (LFY) = 0.0568 cfs/mi²
$Q_{7\text{-}10}$ Flow = 0.0085 cfs
Drainage Area = 0.157813 mi²

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
02C	3642	COPLAY CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
0.215	LCA Sand Spring	PA0034029	0.035	CBOD5	25		
				NH3-N	1.76	3.52	
				Dissolved Oxygen			5

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.0085	= Q stream (cfs)	0.5	= CV Daily
0.035	= 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 = 0.069	1.3.2.iii	WLA cfc = 0.060
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.026	5.1d	LTA_cfc = 0.035

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.032	AFC
		INST MAX LIMIT (mg/l) = 0.104	

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)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **LCA Sand Spring WWTP** NPDES Permit No.: **PA0034029** Outfall No.: **002**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Treated Sewage**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.035	100	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	mg/L	<	0.002									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	mg/L	<	0.001									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	mg/L		0.142									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Stream / Surface Water Information

LCA Sand Spring WWTP, NPDES Permit No. PA0034029, Outfall 002

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Unnamed Tributary to Coplay Creek**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	003642	0.2155	545.51	0.15			Yes
End of Reach 1	003642	0	514.16	4.51			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.2155	0.0568										160	6.92		
End of Reach 1	0	0.0568													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.2155														
End of Reach 1	0														

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Zinc	0.037	0.043	0.13	0.15	0.15	mg/L	0.13	AFC	Discharge Conc ≥ 50% WQBEL (RP)

WQM 7.0 - Sand Spring WWTP.pdf

DRBC Docket 2017-012 CP-2.pdf

TMS PA0034029 12-4-2025.pdf