pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal & Transfer**	Application No.	**PA0062031 A-2**
Facility Type	**Non-Municipal**	APS ID	**1103529**
Major / Minor	**Minor**	Authorization ID	**1466856**

Applicant and Facility Information

Applicant Name	**Twin Cedars Senior Living**	Facility Name	**Twin Cedars Senior Living**
Applicant Address	364 Little Walker Road	Facility Address	364 Little Walker Road
	Shohola, PA 18458-2805		Shohola, PA 18458-2805
Applicant Contact	Michael P. Grim, Facility Director	Facility Contact	Michael P. Grim, Facility Director
Applicant Phone	(570) 296-7471	Facility Phone	(570) 296-7471
Client ID	381765	Site ID	4344
Ch 94 Load Status	Not Overloaded	Municipality	Shohola Township
Connection Status	-	County	Pike
Date Application Received	December 3, 2021	EPA Waived?	Yes
Date Application Accepted	January 8, 2024	If No, Reason	-

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

Summary of Review

The applicant is requesting the renewal and transfer of an NPDES permit to discharge up to 0.00784 MGD of treated sewage into an Unnamed Tributary to Walker Lake Creek, a High Quality, Cold-Water Fishery, Migratory Fish (HQ, CWF, MF) receiving stream in State Water Plan Basin 1-D (Shohola – Bushkill Creeks). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. This stream segment is not designated as a naturally reproducing trout stream as per PA Fish & Boat Commission. This discharge is not expected to affect public water supplies.

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

Limitations for $CBOD_5$, Dissolved Oxygen (DO), Total Phosphorous, and Nitrate-Nitrite as N are water quality-based and carried over from the previous permit.

The annual monitoring and reporting for Total Nitrogen and Total Kjeldahl Nitrogen has also been maintained in this permit.

WQM modeling recommended stricter summertime limitations for Ammonia-Nitrogen (2.34 mg/L monthly average, 4.68 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 (7.0 mg/L monthly average, 14.0 mg/L IMAX). The limitations for Ammonia-Nitrogen from the previously issued permit will be in effect the first three (3) years of the permit. eDMR data from the past year confirms the facility should be able to meet these new limits.

The previously issued permit did not contain Total Residual Chlorine (TRC) limitations since the WWTP utilizes ultraviolet light for disinfection. In the event the facility uses chlorine for cleaning purposes or as a back-up disinfection option, Total

Approve	Deny	Signatures	Date
X		/s/ Allison Seyfried / Project Manager	March 26, 2024
X		/s/ Amy M. Bellanca, P.E. / Program Manager	4-10-24

Summary of Review

Residual Chlorine (TRC) should be sampled "daily when discharging" (see requirements under Part C.I.E). The TRC Calculation Spreadsheet recommends a stricter IMAX limitation than the state-wide technology limitation.

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.

Monitoring frequencies for all parameters with limitations have been updated to the recommended frequencies found in Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations (Document No. 362-0400-001). The "Daily when Discharging" frequency has been maintained from the previous permit for pH and DO.

There are no representative stream gages in the vicinity of the outfall and the drainage area at Outfall 001 is too small for USGS StreamStats to estimate accurate low flow values. The previous permit utilized a LFY of 0.022 cfs/mi^2 which was based off of the 2011 WPC report. This LFY was carried over for this permit renewal. For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA, drainage areas were delineated using USGS's StreamStats Interactive Map, and elevations were obtained using the elevation profile feature of StreamStats.

The existing permit expired on September 30, 2022 and the application for renewal was received on time on December 3, 2021. The application was deficient. An Administrative Deficiencies email was sent on December 17, 2021. The application was not able to be marked as administratively complete until April 26, 2022. During the technical review it was discovered the EIN form the previous permit did not match the EIN submitted on the renewal application. The permittee was emailed regarding the discrepancy on February 24, 2023. A complete transfer application was not received until January 8, 2024.The permittee has informed the Department that there has been no change in physical ownership, but that a change in EIN has occurred.

The permit is being transferred from Twin Cedars Senior Living LLC (EIN 45-1145477, Client ID # 326109) to Twin Cedars Senior Living (EIN 84-2787021, Client ID # 381765).

An "A-2" notation has been added after the NPDES permit to represent the number of transfers since the original permit was issued.

WQM Permit 5275409 will be transferred concurrently with the final NPDES Permit.

A Water Management System Inspection query indicated that on March 11, 2022 a Compliance Evaluation was performed.

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

Sludge use and disposal description and location(s): As per the permittee's Sewage Sludge and Biosolids Supplemental Report form, sludge is hauled to the Pike County Environmental in Westfall Township, Pike County, PA by M&S.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.00784
Latitude	41º 23' 37.00"	Longitude	-74º 55' 27.00"
Quad Name	Shohola	Quad Code	0746
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Walker Lake Creek (HQ-CWF)	Stream Code	5326
NHD Com ID	26172792	RMI	0.885
Drainage Area	0.22 mi^2	Yield (cfs/mi^2)	0.022
Q_{7-10} Flow (cfs)	0.005	Q_{7-10} Basis	2011 WPC Report and previous permit renewal
Elevation (ft)	1,369.5	Slope (ft/ft)	-
Watershed No.	1-D	Chapter 93 Class.	HQ-CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-
Nearest Downstream Public Water Supply Intake	Easton Area Water System		
PWS Waters	Delaware River	Flow at Intake (cfs)	-
PWS RMI	110.4	Distance from Outfall (mi)	~ 90.35

Treatment Facility Summary

Treatment Facility Name: Twin Cedars Senior Living

WQM Permit No.	Issuance Date	Scope
5275409-T2	**TBD**	Permit transfer to current owner/operator
5275409-T1	9/07/2017	Permit transfer to previous owner/operator
5275409	8/6/1975	Original STP consisting to two stage extended aeration system, settling, sand filtration, chemical feeders, sludge holding, and post-aeration

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended aeration	UV	0.00147 (2018-2020)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.00784	11.73	Not Overloaded	Holding Tank	Hauled

Compliance History

DMR Data for Outfall 001 (from February 1, 2023 to January 31, 2024)

Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD) Average Monthly	0.00249	0.00366	0.00178	0.00093 7	0.0014	0.00159	0.00169	0.00145	0.0015	0.0004	0.00245	0.00148
Flow (MGD) Daily Maximum	0.00472	0.0239	0.0048	0.00369	0.0065	0.0058	47	0.00344	0.004	0.0009	0.00670	0.00356
pH (S.U.) Minimum	7.0	7.0	6.75	6.9	7.1	7.24	7.04	6.78	6.61	6.78	6.83	6.22
pH (S.U.) Maximum	7.61	7.8	7.8	7.77	7.8	7.9	7.71	7.9	7.71	7.6	7.84	6.78
DO (mg/L) Minimum	8.4	7.1	8.1	7.8	7.44	7.4	7.3	7.3	7.15	7.2	8.22	8.1
CBOD5 (mg/L) Average Monthly	< 3.0	12.0	3.0	3.0	3.0	< 3.0	4.0	5.0	7.0	3.0	3.0	< 3.0
TSS (mg/L) Average Monthly	10.0	12.0	5.0	4.0	5.0	4.0	< 5.0	< 4.0	4.0	7.0	< 4.0	4.0
Fecal Coliform (No./100 ml) Geometric Mean	< 4.0	18	< 2.0	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 4.0	18	< 2.0	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.0
Nitrate-Nitrite (lbs/day) Average Monthly	0.074	0.023	0.024	0.007	0.006	0.0299	0.025	0.0087	0.0049	0.00218	0.0517	0.0170
Nitrate-Nitrite (mg/L) Average Monthly	4.87	2.32	< 1.05	< 1.43	1.05	1.05	1.06	1.07	1.13	< 1.05	2.3	2.3
Total Nitrogen (lbs/day) Annual Average		0.052										
Total Nitrogen (mg/L) Annual Average		1.84										
Ammonia (mg/L) Average Monthly	< 1.0	1.29	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TKN (lbs/day) Annual Average		0.022										
TKN (mg/L) Annual Average		0.79										

Total Phosphorus (lbs/day) Average Monthly	0.0024	0.0048	0.0044	0.0018	0.0028	0.0031	0.0081	0.00238	0.0039	0.00213	0.0036	0.0011
Total Phosphorus (mg/L) Average Monthly	0.16	0.49	1.6	0.35	0.47	0.11	0.34	0.29	0.9	0.59	0.16	0.16

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.00784
Latitude 41º 23' 36.00" **Longitude** -74º 55' 28.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Total Suspended Solids	30.0	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	60.0	IMAX	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
E. Coli (No./100 ml)	Report	IMAX	-	92a.61

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model
CBOD5 (May 1 - Oct 31)	10.0	Average Monthly	Previous Modeling – 2011 WPC Report
	20.0	IMAX	
CBOD5 (Nov 1 - Apr 30)	25.0	Average Monthly	
	50.0	IMAX	
Total Residual Chlorine	0.23	IMAX	TRC Calculation Spreadsheet
Ammonia-Nitrogen (May 1 - Oct 31)	2.34	Average Monthly	WQM 7.0
	4.68	IMAX	
Ammonia-Nitrogen (Nov 1 - Apr 30)	7.0	Average Monthly	
	14.0	IMAX	
Total Phosphorus	2.0	Monthly Average	Previous Modeling – 2011 WPC Report
	4.0	IMAX	
	Report (lb/day)	Monthly Average	
Nitrate-Nitrite as N	14.0	Monthly Average	Previous Modeling – 2011 WPC Report
	28.0	IMAX	
	Report (lb/day)	Monthly Average	
Dissolved Oxygen (DO)	7.0	Minimum	Previous Modeling – 2011 WPC Report
Total Kjehldahl Nitrogen (TKN)	Report	Monthly Average	Previous Permit
	Report (lb/day)	Monthly Average	
Total Nitrogen	Report	Monthly Average	Previous Permit
	Report (lb/day)	Monthly Average	

Anti-Backsliding

No limitations were made less stringent.

$$\boldsymbol{Q_{7-10}\ at\ Outfall\ 001\ using\ 2011\ WPC\ Report} = 0.022\ ft^3/sec \times 0.22\ mi^2 = \mathbf{0.00484}\ \frac{\boldsymbol{ft^3/sec}}{\boldsymbol{mi^2}}$$

Modeling with State-Wide default LFY of 0.1 cfs/mi²:

$$\frac{0.1\ ft^3/sec}{mi^2} \times 0.22\ mi^2 = \frac{\mathbf{0.022}\ \boldsymbol{ft^3}}{\boldsymbol{sec}}$$

Modeling Using StreamStats:

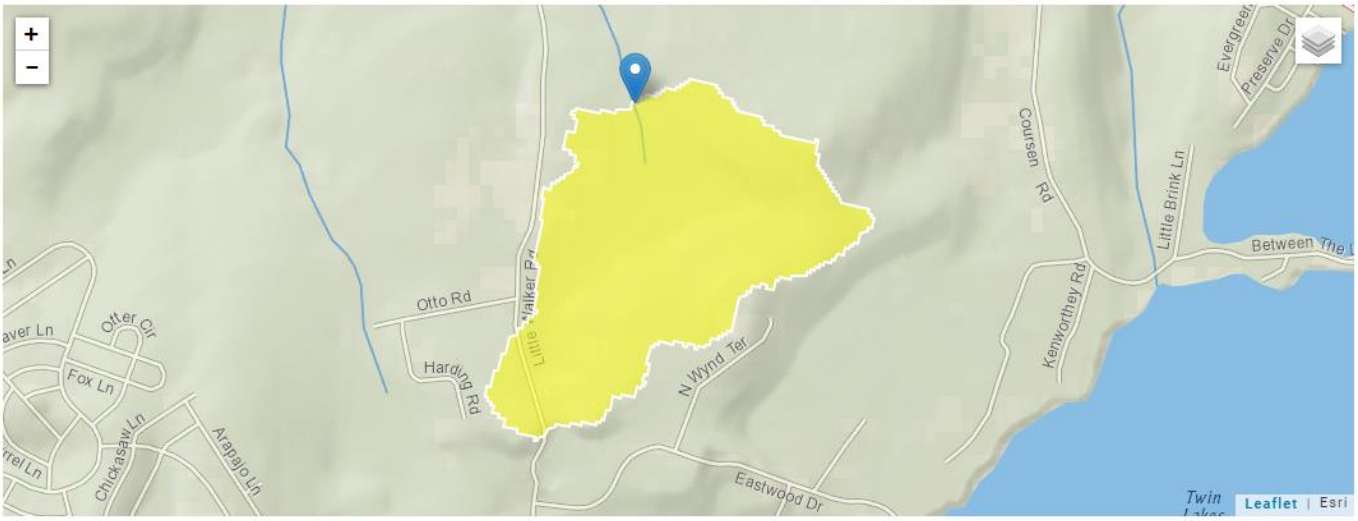
At Outfall 001 to Unknown Tributary to Walker Lake Creek:

RMI	Elevation (ft)	Drainage Area (mi²)	Q_{7-10} Flow (cfs)
0.8845	1,369.50	0.22	0.00324

$$Low\ Flow\ Yield\ using\ StreamStats = \frac{0.00324\ ft^3/sec}{0.22\ mi^2} = \mathbf{0.0147}\ \frac{\boldsymbol{ft^3/sec}}{\boldsymbol{mi^2}}$$

StreamStats Report

Region ID:	PA
Workspace ID:	PA20230222164500973000
Clicked Point (Latitude, Longitude):	41.39370, -74.92416
Time:	2023-02-22 11:45:21 -0500



Low-Flow Statistics Parameters [Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.22	square miles	4.84	982

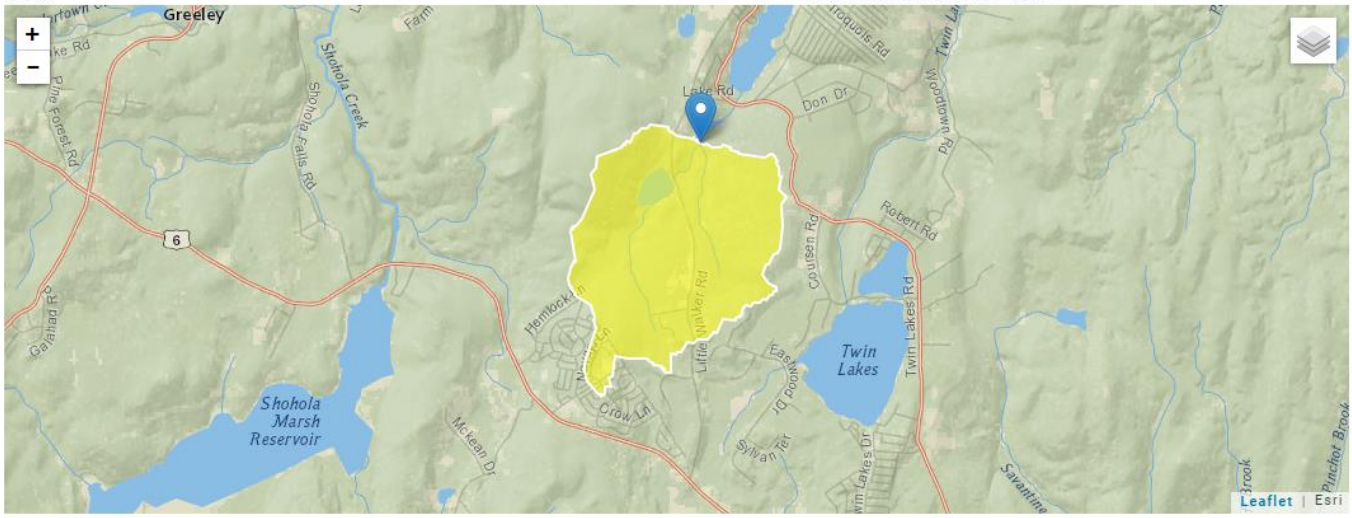
One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0132	ft^3/s
30 Day 2 Year Low Flow	0.021	ft^3/s
7 Day 10 Year Low Flow	0.00324	ft^3/s

At confluence with Walker Lake Creek:

StreamStats Report

Region ID:	PA
Workspace ID:	PA20230222165117671000
Clicked Point (Latitude, Longitude):	41.40556, -74.92633
Time:	2023-02-22 11:51:37 -0500



Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.89	square miles

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
01D	5326	Trib 05326 to Walker Lake 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)
0.885	Twin Cedars	PA0062031	0.008	CBOD5	25		
				NH3-N	2.34	4.68	
				Dissolved Oxygen			4

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.005	= Q stream (cfs)	0.5	= CV Daily
0.00784	= 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 = 0.151	1.3.2.iii	WLA cfc = 0.139
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.056	5.1d	LTA_cfc = 0.081

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.069	AFC
		INST MAX LIMIT (mg/l) = 0.226	

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)


2011 WPC Report.pdf


WQM 7.0.pdf

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Approve	Deny	Signatures	Date
X		/s/ Allison Seyfried / Project Manager	March 26, 2024
X		/s/ Amy M. Bellanca, P.E. / Program Manager	4-10-24