pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0051799**
Facility Type	**Non-Municipal**	APS ID	**624850**
Major / Minor	**Minor**	Authorization ID	**1201225**

Applicant and Facility Information

Applicant Name	**Lehigh Carbon Community College**	Facility Name	**Lehigh Carbon Community College WWTF**
Applicant Address	4525 Education Park Drive	Facility Address	4525 Education Park Drive
	Schnecksville, PA 18078		Schnecksville, PA 18078
Applicant Contact	Carl Peckitt	Facility Contact	Carl Peckitt
Applicant Phone	(610) 799-1113	Facility Phone	(610) 799-1113
Client ID	85677	Site ID	270870
Ch 94 Load Status	N/A	Municipality	North Whitehall Township
Connection Status	N/A	County	Lehigh
Date Application Received	September 22, 2017	EPA Waived?	Yes
Date Application Accepted	September 22, 2017	If No, Reason	-
Purpose of Application	Renewal of existing NPDES permit.		

Summary of Review

The applicant is requesting renewal of their NPDES permit to discharge up to 0.036225 MGD of treated sewage to Tributary 3450 to Jordan Creek, a HQ-CWF/MF designated receiving water in state water plan basin 02-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.

A point of first use (POFU) determination for this discharge was completed on July 25th by Tim Daley, DEP Aquatic Biologist. The POFU was determined to be where a stream channel first forms as flows exit an earthen berm a few hundred feet downstream of Outfall 001 (see POFU attachment).

USGS gage 01451800 (Jordan Creek near Schnecksville, PA) and gage 01452000 (Jordan Creek at Allentown, PA) are the closest gages to Outfall 001 to obtain data from. Since Jordan Creek is a 5th order stream, it is not appropriate to assume gage data from that creek is applicable to Tributary 3450, which is a 1st order stream with a relatively small drainage area. The drainage area at Outfall 001 is too small for USGS StreamStats to estimate accurate low flow values (see StreamStats Low Flow attachment). Therefore, the default LFY of 0.1 cfs/mi^2 was chosen to model the discharge. For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA as well as the "measure" tool. Drainage areas were delineated using USGS's StreamStats Interactive Map and elevations were obtained using the elevation profile feature of StreamStats (see Watershed Information attachment).

TRC limitations in the previously issued permit were old technology-based limitations (1.2 mg/L monthly average, 2.8 mg/L IMAX). As per PA Code 92a.47(a)(8) (which refers to PA Code 92a.48(b)(2)), a monthly average TRC facility-specific BAT effluent limit of 0.5 mg/L and an IMAX limit of 1.6 mg/L is applied to this permit renewal. These limitations will come into effect 1 year after the Permit Effective Date.

Approve	Deny	Signatures	Date
X		/s/ Brian Burden, E.I.T. / Project Manager	September 10, 2019
X		/s/ Amy M. Bellanca, P.E. / Environmental Engineer Manager	September 10, 2019

Summary of Review

When modeling the discharge using the latest TRC calculation spreadsheet, a monthly average limitation of 0.02 mg/L and an IMAX of 0.09 mg/L was recommended. These water quality-based limitations will come into effect 4 years after the Permit Effective Date. The permittee may conduct site-specific studies to alter the new TRC limitations (see Part C.III). Several factors can change the recommended TRC limitations as calculated by the spreadsheet, such as: chlorine demand of stream, chlorine demand of discharge, and stream flow. Default values for chlorine demand were used to develop the limitations (0.3 mg/L for stream demand, 0 mg/L for discharge demand). The stream flow value was determined by multiplying the drainage area at the point of first use (delineated using USGS's StreamStats) by the default LFY of 0.1 cfs/mi^2.

Ammonia-Nitrogen limitations in the previously issued permit (summertime: 3.0 mg/L average monthly, 6.0 mg/L IMAX) were BAT-based limits for discharges to HQ waters in effect at the time the permit was originally issued. WQM modeling during this renewal suggests that a summertime monthly average limitation of 1.6 mg/L is required to meet water quality standards. The new Ammonia-Nitrogen limitations will come into effect 4 years after the Permit Effective Date. The standard 2x multiplier was used to develop the IMAX limits and the standard 3x multiplier was used to develop the wintertime limitations for Ammonia-Nitrogen.

$CBOD_5$ and TSS limitations are BAT-based limits from original permit issuance and are carried over during this renewal. Fecal Coliform and pH limitations are technology-based and carried over from the previous permit. The Dissolved Oxygen minimum is water quality-based and carried over from the previous permit.

Monitoring/reporting requirements for Total Phosphorus and Nitrate-Nitrite as N are continued in this permit renewal. As per DRBC Docket D-2009-025 CP-3, monthly monitoring/reporting requirements are added for Total Nitrogen. Monthly monitoring/reporting for TKN is added to the permit to calculate Total Nitrogen.

DRBC Docket D-2009-025 CP-3 also requires monthly monitoring/reporting for influent $CBOD_5$ and an 85% minimum removal requirement for $CBOD_5$. The docket has also updated the Total Dissolved Solids monitoring frequency to monthly.

Applicable pollutant sampling results submitted with the permit application were modeled with PENTOX (see attached). No limitations were recommended through PENTOX modeling.

WQM Permit 3919401 was issued by DEP on April 16, 2019 for upgrades to the WWTF. The effluent discharge rate of 0.036225 MGD remains unchanged upon completion of the upgrades. DRBC Docket D-2009-025 CP-3 requires the following monthly average mass limitations be added to the permit after the upgrades:

- Total Suspended Solids: 6.73 lbs/day
- Ammonia-Nitrogen (5/1 – 9/30): 0.24 lbs/day
- Ammonia-Nitrogen (10/1 – 4/30): 0.72 lbs/day
- Nitrate-Nitrite as N (5/1 – 9/30): 5.96 lbs/day
- Nitrate-Nitrite as N (10/1 – 4/30): 8.94 lbs/day
- Total Nitrogen (5/1 – 9/30): 6.89 lbs/day
- Total Nitrogen (10/1 – 4/30): 10.34 lbs/day
- Total Phosphorus (5/1 – 9/30): 0.96 lbs/day
- Total Phosphorus (10/1 – 4/30): 2.88 lbs/day

Part C.IV is added to the permit requiring the permittee to notify DEP within 5 days of substantial completion of the WWTF upgrade.

DMR review of the past 2 years reveals the following limitation exceedances:

November 2018: Fecal Coliform – 2,950 No./100mL geometric mean (limitation was 2,000 No./100mL)
September 2018: Fecal Coliform – 20,000 No./100mL IMAX (limitation was 1,000 No./100mL)
July 2018: $CBOD_5$ – 10.7 mg/L monthly average (limitation was 10.0 mg/L)

Monitoring frequencies for all parameters with concentration limitations conform to the recommended frequencies found in Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations (doc. no. 362-0400-001). Note that in the previous permit, TRC and pH were to be sampled daily except weekends and holidays unless public events were scheduled during the school year, and weekly during the summer. For this renewal, the permittee shall sample

Summary of Review

each day the facility is discharging through Outfall 001 for all grab sample parameters except Fecal Coliform (TRC, pH and DO).

The last completed Sewage Sludge / Biosolids Production and Disposal supplemental report from July 2019 states that sludge was hauled to Lehigh County Pretreatment in Trexlertown via Allstate Septic Systems.

Outfall coordinates submitted with the permit application are incorrect. The coordinates were updated to reflect the location shown in the POFU determination.

The previously issued permit expired on March 31, 2018 and the application for permit renewal was submitted on time. There are no open violations for the client that would warrant withholding the issuance of the final permit. Antibacksliding requirements have been met since no effluent limitations were made less stringent or removed from the permit. EPA waiver is in effect.

WQM Modeling.pdf
TRC Calculation.pdf
PENTOX.pdf
Watershed Information.pdf
POFU.pdf
StreamStats Low Flow.pdf
DRBC Docket.pdf

Public Participation

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

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.036225
Latitude	40º 39' 39.9"	Longitude	-75º 36' 33"
Quad Name	Cementon	Quad Code	1341
Wastewater Description:	Sewage Effluent		
Receiving Waters	Tributary 3450 to Jordan Creek (HQ-CWF/MF)	Stream Code	3450
NHD Com ID	26293003	RMI	0.2
Drainage Area	0.0756 (at POFU)	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	0.00756	Q_{7-10} Basis	Default LFY
Elevation (ft)	565	Slope (ft/ft)	0.037
Watershed No.	2-C	Chapter 93 Class.	HQ-CWF/MF
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	-

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

Nearest Downstream Public Water Supply Intake	BCWSA New Hope		
PWS Waters	Delaware River	Flow at Intake (cfs)	670 (using default LFY)
PWS RMI	73.3	Distance from Outfall (mi)	~67.5

Changes Since Last Permit Issuance: Update to Outfall 001 location.

Treatment Facility Summary				
Treatment Facility Name: Lehigh Carbon Community College WWTF				
WQM Permit No.	**Issuance Date**			
3919401	April 16, 2019			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	SBR with Sand Filters	Chlorine	0.0120 (2016)
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.036225	190	Not Overloaded	Aerated Holding Tank	Hauled

Changes Since Last Permit Issuance: Issuance of 3919401.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.036225
Latitude 40º 39' 39.9" **Longitude** -75º 36' 33"
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)
$CBOD_5$	85% Removal	Average Monthly	133.102(a)(3)	92a.47(a)(3)
Fecal Coliform	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
(5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
(10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

Water Quality-Based Limitations

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model/Basis
$CBOD_5$	10.0	Average Monthly	Previous modeling
(5/1 – 10/31)	20.0	IMAX	
$CBOD_5$	20.0	Average Monthly	
(11/1 – 4/30)	40.0	IMAX	
Total Suspended Solids	10.0	Average Monthly	Previous modeling
	20.0	IMAX	
Dissolved Oxygen	5.0	Minimum	Previous modeling
Total Residual Chlorine	0.02	Average Monthly	2019 TRC Calculation Spreadsheet
	0.09	IMAX	
Ammonia-Nitrogen	1.6	Average Monthly	2019 WQM 7.0 Modeling
(5/1 – 10/31)	3.2	IMAX	
Ammonia-Nitrogen	4.8	Average Monthly	
(11/1 – 4/30)	9.6	IMAX	
Ammonia-Nitrogen (5/1 – 10/31)	0.24 lbs/day	Average Monthly	DRBC Docket D-2009-025 CP-3
Ammonia-Nitrogen (11/1 – 4/30)	0.72 lbs/day	Average Monthly	
Nitrate+Nitrite as N (5/1 – 10/31)	5.96 lbs/day	Average Monthly	DRBC Docket D-2009-025 CP-3
Nitrate+Nitrite as N (11/1 – 4/30)	8.94 lbs/day	Average Monthly	
Total Nitrogen (5/1 – 10/31)	6.89 lbs/day	Average Monthly	DRBC Docket D-2009-025 CP-3
Total Nitrogen (11/1 – 4/30)	10.34 lbs/day	Average Monthly	
Total Phosphorus (5/1 – 10/31)	0.96 lbs/day	Average Monthly	DRBC Docket D-2009-025 CP-3
Total Phosphorus (11/1 – 4/30)	2.88 lbs/day	Average Monthly	

Comments: Concentration limitations for TRC and Ammonia-Nitrogen come into effect 4 years after the Permit Effective Date. Mass limitations for Ammonia-Nitrogen, Nitrate+Nitrite as N, Total Nitrogen and Total Phosphorus come into effect after completion of the WWTF upgrade permitted under 3919401.