Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**New**	Application No.	**PA0296023**
Facility Type	**Non-Municipal**	APS ID	**1120975**
Major / Minor	**Minor**	Authorization ID	**1498407**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**UK Strattanville Holding, LLC**	Facility Name	**University Korner All American Plaza**
Applicant Address	20331 Paint Boulevard	Facility Address	21251 Route 322
	Shippenville, PA 16254-4627		Strattanville, PA 16258-3041
Applicant Contact	Sohail Butti, Vice President (sohail@universitykorner.com)	Facility Contact	Sohail Butti, Vice President (sohail@universitykorner.com)
Applicant Phone	(814) 297-2104	Facility Phone	(814) 297-2104
Client ID	373572	Site ID	251804
Ch 94 Load Status	Not Overloaded	Municipality	Clarion Township
Connection Status	No Limitations	County	Clarion
Date Application Received	September 5, 2024	EPA Waived?	No
Date Application Accepted	September 5, 2024	If No, Reason	TMDL
Purpose of Application	A new NPDES Permit for a new discharge of treated sanitary wastewater from a truck stop. The truck stop was previously permitted under NPDES Permit number PA0024953.		

Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit will be required prior to construction of the new STP.

The Permittee should be able to meet the limits of this permit, which will protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

A. Stormwater into sewers
B. Right of way
C. Solids handling
D. Little or no Assimilative Capacity

SPECIAL CONDITIONS:

II. Solids Management

There are no open violations in efacts for Client ID (373572) as of 12/11/2024.

Approve	Deny	Signatures	Date
X		Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	12/11/2024
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	12/11/2024

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.009
Latitude	41º 11' 9.64"	Longitude	-79º 14' 37.14"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to the Douglass Run (CWF)	Stream Code	49719
NHD Com ID	102670397	RMI	0.42
Drainage Area	0.79	Yield (cfs/mi^2)	0.07 (small streams)
Q_{7-10} Flow (cfs)	0.055	Q_{7-10} Basis	calculated
Elevation (ft)	1489	Slope (ft/ft)	0.009
Watershed No.	17-B	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired*		
Cause(s) of Impairment	Metals		
Source(s) of Impairment	Acid Mine Drainage (AMD)		
TMDL Status	Final, 4/9/2003	Name	Douglass and Jones Runs Watershed (Clarion)
Background/Ambient Data		Data Source	
pH (SU)	-	-	
Temperature (°F)	-	-	
Hardness (mg/L)	-	-	
Other:	-	-	
Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

* - There is a TMDL for AMD metals for the Douglass Run. However, since there is no data from this discharge, per the SOP, monitoring for Aluminum, Iron, and Manganese will be added since the stream is impaired by Acid Mine Drainage (AMD). Due to the TMDL, the monitoring will be set to quarterly to provide sufficient data to determine if reasonable potential exists.

Sludge use and disposal description and location(s): Sludge would be disposed of at an approved landfill.

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for a new discharge of 0.009 MGD of treated sewage from a non-municipal STP in Clarion Township, Clarion County.

Treatment is proposed to consist of: (WQM Permit no. 1624402) A 2,000 gallon septic tank, a 600 gallon flow distribution box, 6 parallel trains each consisting of a 1,500 gallon tank, a Singulair 960-150 treatment unit, and a Hydro-Kinetic Bio-Film Reactor. The flow will combine and be treated by 2 UV AT1500 ultraviolet (UV) light units in series.

1. Streamflow:

Unnamed Tributary to the Douglass Run:

Drainage Area:	0.79	sq. mi.		(from StreamStats)
Yieldrate:	0.07	cfsm		(assumed for small streams)
% of stream allocated:	100%		Basis:	no nearby discharges
Q_{7-10}:	0.055	cfs		(Calculated)

2. Wasteflow:

Maximum discharge: 0.009 MGD = 0.013 cfs

Runoff flow period: 24 hours Basis: Runoff flow based on treatment design

The calculated stream flow is greater than 3 parts stream flow (Q7-10) to 1 part effluent (design flow). However, the discharge flows to a dry channel prior to reaching the stream. Therefore, in accordance with the SOP, since this is a new discharge to a dry channel, the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, will be implemented in this NPDES Permit.

Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, Phosphorus, NH_3-N, $CBOD_5$, Dissolved Oxygen, and Disinfection.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits.

The measurement frequency will be set to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

b. Total Suspended Solids

Limits are 10.0 mg/l as a monthly average and 20.0 as an instantaneous maximum.

Basis: The TSS limits will be set per the SOP, based on document number 391-2000-014.

c. Fecal Coliform

05/01 - 09/30:	200/100ml	(monthly average geometric mean)
	1,000/100ml	(instantaneous maximum)
10/01 - 04/30:	2,000/100ml	(monthly average geometric mean)
	10,000/100ml	(instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits.

d. E. Coli

Monitoring was added for E. Coli at a frequency of 1/year.

Basis: Application of Chapter 92a.61 as recommended by the SOP for flows between 0.002 MGD and 0.05 MGD.

e. Total Phosphorus

Total Phosphorus technology-based limits of 0.5 mg/l monthly average and 1.0 instantaneous maximum will be set per the SOP, based on document number 391-2000-014.

f. Total Nitrogen

Total Nitrogen technology-based limits of 5.0 mg/l monthly average and 10.0 instantaneous maximum will be set per the SOP, based on document number 391-2000-014.

g. Ammonia-Nitrogen (NH_3-N)

Median discharge pH to be used:	7.0	Standard Units (S.U.)
	Basis:	Default value used in the absence of data
Discharge temperature:	25°C	(default value used in the absence of data)
Median stream pH to be used:	7.0	Standard Units (S.U.)
	Basis:	Default value used in the absence of data
Stream Temperature:	20˚C	(default value used for CWF modeling)
Background NH_3-N concentration:	0.1	mg/l
	Basis:	Default value used in the absence of data
calculated summer NH_3-N limits:	11.4	mg/l (monthly average)
	22.8	mg/l (instantaneous maximum)
calculated winter NH_3-N limits:	25.0	mg/l (monthly average)
	50.0	mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated summer limits above (see Attachment 1). The winter limits are calculated as three times the summer limits, but since the technology-based limits would govern, they will be used.

h. $CBOD_5$

Median discharge pH to be used: 7.0 Standard Units (S.U.)

Basis: Default value used in the absence of data

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: Default value used in the absence of data

Stream Temperature: 20˚C (default value used for CWF modeling)

Background $CBOD_5$ concentration: 2.0 mg/l

Basis: Default value used in the absence of data

calculated $CBOD_5$ limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated CBOD5 limits above (see Attachment 1). Since the discharge flows to a dry channel, the technology-based limits of 10.0 mg/l average monthly and 20.0 mg/l instantaneous maximum from document number 391-2000-014 will be set.

i. Dissolved Oxygen (DO)

The technology-based minimum of 4.0 mg/l is recommended by the WQ Model (see Attachment 1) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61. However, the Dissolved Oxygen minimum requirement was set as 6.0 mg/l to comply with the SOP and with document number 391-2000-014.

The measurement frequency will be set to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

j. Disinfection

☒ Ultraviolet (UV) light monitoring

☐ Total Residual Chlorine (TRC): _____ mg/l (monthly average)
_____ mg/l (instantaneous maximum)

Basis: UV Intensity (µw/cm²) reporting will be included in this new permit.

The measurement frequency will be set to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

4. Reasonable Potential Analysis for Receiving Stream:

A Reasonable Potential Analysis was not performed in accordance with State practices using the Department's Toxics Management Spreadsheet since no sampling other than sewage-related parameters was performed for this facility with the renewal application.

5. Reasonable Potential for Downstream Public Water Supply (PWS):

The Department's Toxics Management Spreadsheet does not calculate limits for parameters that are based on PWS criteria (TDS, Chloride, Bromide, and Sulfate). However, since no sample data was provided, mass-balance calculations were not performed.

Nearest Downstream potable water supply (PWS): Parker Area Water Authority
Distance downstream from the point of discharge: 38.0 miles (approximate)

Result: No limits are necessary as significant dilution is available

6. Attachment List:

Attachment 1 - WQM Printouts

(The Attachments above can be found at the end of this document)

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
TSS	XXX	XXX	XXX	10.0	XXX	20.0	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Ultraviolet light intensity (µw/cm²)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/day	Metered
Total Nitrogen	XXX	XXX	XXX	5.0	XXX	10.0	2/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	11.4	XXX	22.8	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	0.5	XXX	1.0	2/month	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Iron	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab
Total Manganese	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	Grab

Compliance Sampling Location: at Outfall 001, after ultraviolet (UV) light disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH are technology-based on Chapter 93.7. The limits for Dissolved Oxygen, $CBOD_5$, and Total Suspended Solids are technology-based on the Dry Streams Guidance. The limits for Fecal Coliforms are technology-based on Chapter 92a.47. Monitoring for E. Coli and UV Intensity is based on Chapter 92a.61. The limits for Total Nitrogen and Total Phosphorus are technology-based on the Dry Streams Guidance. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7. Monitoring for Total Aluminum, Total Iron, and Total Manganese is based on Chapter 92a.61.

Attachment 1

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
17B	49719	DOUGLASS RUN

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)
0.420	UK Amer Plaza	PA0296023	0.009	CBOD5	25		
				NH3-N	11.49	22.98	
				Dissolved Oxygen			4

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
17B	49719	DOUGLASS RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.420	0.009	21.006	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.035	0.329	12.251	0.052
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
6.63	1.019	2.31	0.756
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.390	23.952	Owens	6
Reach Travel Time (days)			
0.493			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.049	6.29	2.23	7.98
0.099	5.96	2.14	8.09
0.148	5.66	2.07	8.09
0.197	5.37	1.99	8.09
0.246	5.09	1.92	8.09
0.296	4.83	1.85	8.09
0.345	4.59	1.78	8.09
0.394	4.35	1.71	8.09
0.443	4.13	1.65	8.09
0.493	3.92	1.59	8.09

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

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
17B	49719	DOUGLASS RUN	**0.420**	1489.00	0.79	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.070	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
UK Amer Plaza	PA0296023	0.0090	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	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
17B	49719	DOUGLASS RUN	**0.000**	1469.00	0.95	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.070	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)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
17B	49719	DOUGLASS RUN

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												
0.420	0.06	0.00	0.06	.0139	0.00902	.329	4.03	12.25	0.05	0.493	21.01	7.00
Q1-10 Flow												
0.420	0.04	0.00	0.04	.0139	0.00902	NA	NA	NA	0.04	0.596	21.41	7.00
Q30-10 Flow												
0.420	0.08	0.00	0.08	.0139	0.00902	NA	NA	NA	0.06	0.428	20.78	7.00

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
17B	49719	DOUGLASS RUN

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
0.420	UK Amer Plaza	14.91	50	14.91	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
0.420	UK Amer Plaza	1.79	11.49	1.79	11.49	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.42	UK Amer Plaza	25	25	11.49	11.49	4	4	0	0