pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Amendment, Major**	Application No.	**PA0101664 A-1**
Facility Type	**Non-Municipal**	APS ID	**1076846**
Major / Minor	**Minor**	Authorization ID	**1419599**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Fred C. Berlin, LLC**	Facility Name	**Orchard Park Estates**
Applicant Address	6101 Park Road	Facility Address	135 Apricot Drive
	Berwick, PA 18603-5713		Franklin, PA 16323-8115
Applicant Contact	Fred Berlin (mberlin305@gmail.com)	Facility Contact	Andrew Narlee, WWTP Operator (andy@self-storage-buildings.com)
Applicant Phone	(570) 204-2531	Facility Phone	(724) 301-1042
Client ID	290762	Site ID	239243
Ch 94 Load Status	Not Overloaded	Municipality	Cranberry Township
Connection Status	No Limitations	County	Venango
Date Application Received	November 29, 2022	EPA Waived?	Yes
Date Application Accepted	December 7, 2022	If No, Reason	-
Purpose of Application	Amendment to add an influent bar screen, and to install chlorination and dechlorination to supplement the current UV disinfection.		

Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The applicant 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. Public Sewerage Availability
- E. Effluent Chlorine Optimization and Minimization
- F. Little or no Assimilative Capacity

SPECIAL CONDITIONS:

- II. Solids Management

There are no open violations in efacts associated with the subject Client ID (290762) as of 7/3/2023. *8/14/2023 CWY*

Approve	Return	Deny	Signatures	Date
X			Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	7/3/2023
X			Chad W. Yurisic Chad W. Yurisic, P.E. / Environmental Engineer Manager	8/14/2023

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.018
Latitude	41º 23' 8.2"	Longitude	-79º 48' 9.4"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to the Lower Twomile Run (CWF)	Stream Code	N/A
NHD Com ID	100477203	RMI	N/A
Drainage Area	166 (first point of use)	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	16.6	Q_{7-10} Basis	calculated
Elevation (ft)	988	Slope (ft/ft)	0.01578
Watershed No.	16-G	Chapter 93 Class.	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	-

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

Nearest Downstream Public Water Supply Intake	Aqua Pennsylvania, Inc. - Emlenton		
PWS Waters	Allegheny River	Flow at Intake (cfs)	1,376
PWS RMI	90.0	Distance from Outfall (mi)	32.9

Sludge use and disposal description and location(s): Sludge is disposed of at an approved STP, or 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 NPDES Amendment permit limits for an existing discharge of 0.018 MGD of treated sewage from an existing non-municipal STP in Cranberry Township, Venango County.

Permitted treatment consists of: (WQM Permit no. 6172412)

A three cell lagoon system with an influent flow splitter, two parallel (1,237,000 gallon and 2,178,000 gallon) primary cells and one (1,820,000 gallon) secondary cell, calcium hypochlorite chlorinator with a 1,320 gallon contact tank, and an effluent cascade aerator.

WQM Permit 6172412 will be amended concurrently to add an influent bar screen, and install chlorination and dechlorination to supplement the current UV disinfection.

Disinfection:

☒ Ultraviolet (UV) light monitoring

Basis: 1/day UV Transmittance (%) monitoring will be retained.

☒ TRC limits: 0.5 mg/l (monthly average)
1.6 mg/l (instantaneous maximum)

Basis: The TRC limits above were calculated using the Department's TRC Calculation Spreadsheet (see Attachment 1).

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).

Anti-Backsliding:

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

Attachment List:

Attachment 1 - TRC_Calc Spreadsheet

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

Compliance History

DMR Data for Outfall 001 (from May 1, 2022 to April 30, 2023)

Parameter	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	JUL-22	JUN-22	MAY-22
Flow (MGD) Average Monthly	0.08	0.007	0.007	0.0115	0.007	0.012	0.006	0.014	0.007	0.002	0.005
Flow (MGD) Daily Maximum	0.0216	0.0288	0.0144	0.022	0.021	0.022	0.0144	0.014	0.029	0.007	0.001
pH (S.U.) Daily Minimum	7.2	7.0	7.5	7.2	7.2	7.6	7.2	6.7	6.0		
pH (S.U.) Instantaneous Maximum	8.8	8.2	8.1	8.0	7.9	7.9	8.0	7.9	7.9		
DO (mg/L) Daily Minimum	5.2	7.0	10.0	9.4	6.0	8.7	6.0	6.1	6.0	6.7	6.5
CBOD5 (mg/L) Average Monthly	5.9	23.0	62.05	> 24.0	20.6	11.7	8.7	< 5.0	< 35.1	30.4	< 48.2
CBOD5 (mg/L) Instantaneous Maximum	5.9	23.0	71.7	> 25.5	20.6	11.7	8.7	< 5.0	< 47.7	30.4	< 48.2
TSS (mg/L) Average Monthly	6.0	23.0	26.5	19.0	45.0	12.0	26.0	21.0	20.5	50.0	22.0
TSS (mg/L) Instantaneous Maximum	6.0	23.0	42.0	19.0	45.0	12.0	26.0	21.0	29.0	50.0	22.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	1	< 1	< 1	< 1	24	< 1	< 1.0	478	65	< 1
Fecal Coliform (No./100 ml) Geometric Mean	< 1	1	< 1	< 1	< 1	24	< 1	< 1.0	478	65	< 1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 1	1	1	< 1	< 1	24	< 1	< 1.0	580	65	< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	1	1	< 1	< 1	24	< 1	< 1.0	580	65	< 1
E. Coli (No./100 ml) Instantaneous Maximum					< 1						
UV Transmittance (%) Average Monthly	0.0000001	0.000001	0.0000001	0.0	0.0000001	0.0	0.0	0.0	0.0	75.6	91
Total Nitrogen (mg/L) Average Monthly	6.05	11.6	6.66	3.07	3.05	16.4	5.51	4.73	6.39	11.1	7.23
Ammonia (mg/L) Average Monthly	3.05	8.39	4.97	0.14	0.62	10.2	0.64	< 0.1	2.7	3.0	3.29
Total Phosphorus (mg/L) Average Monthly	0.9	1.58	1.485	2.26	1.45	2.43	2.25	1.50	0.76	0.9	0.73

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" (362-0400-001), 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/month	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	20.0	XXX	40.0	1/month	Grab
TSS	XXX	XXX	XXX	20.0	XXX	40.0	1/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
UV Transmittance (%)	XXX	XXX	XXX	Report	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001, after disinfection.

Attachment 1

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

1.18	= Q stream (cfs)	0.5	= CV Daily
0.018	= 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)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 13.537	1.3.2.iii	WLA cfc = 13.190
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 5.044	5.1d	LTA_cfc = 7.668

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

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)**