

Application Type Renewal
Facility Type Municipal
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0244236
APS ID 1034341
Authorization ID 1346640

Applicant and Facility Information

Applicant Name	<u>Upper Makefield Township</u>	Facility Name	<u>The Enclave WWTP</u>
Applicant Address	<u>1076 Eagle Road</u> <u>Newtown, PA 18940-2818</u>	Facility Address	<u>925 Creamery Road</u> <u>Newtown, PA 18940</u>
Applicant Contact	<u>David Nyman</u>	Facility Contact	<u>Michael Sullivan</u>
Applicant Phone	<u>(215) 968-3340</u>	Facility Phone	<u>(215) 766-2626</u>
Client ID	<u>63613</u>	Site ID	<u>651069</u>
Ch 94 Load Status		Municipality	<u>Upper Makefield Township</u>
Connection Status		County	<u>Bucks</u>
Date Application Received	<u>March 18, 2021</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted		If No, Reason	
Purpose of Application	<u>Permit Renewal</u>		

Summary of Review

Applicant requests renewal of an NPDES permit to discharge 55,550 GPD of treated sewage from The Enclave WWTP into Houghs Creek.

The treatment plant serves Gray Tract Subdivision, Melky Farm and White Farm subdivisions in Upper Makefield Township. The project is located within the drainage area of the section of the nontidal Delaware River, which is classified as Special Protection Water (SPW). Therefore, effluent limits contained in the Delaware River Basin Commission's (DRBC) "Guidance for SPWs Discharge Requirements" applies to the permit renewal. Quarterly monitoring for Nitrite-Nitrate Nitrogen is included in this permit as per DRBC Docket No. D-2007-025 CP-2. Influent monitoring for Total Suspended Solids (TSS) & BOD5 were included in last permit and will continue for this renewal. The effluent monitoring for E. Coli is included in this permit renewal which is consistent with SOP. Monitoring for UV Intensity was included in the last permit renewal. All other parameters will remain the same in this permit renewal. The discharge is generally in compliance with existing permit limits.

The treatment plant consists of influent pump station, two 10,000-gallon precast concrete equalization tanks equipped with grinder pumps, two 35,000 gpd Membrane Bioreactors (MBRs) package treatment plant operating in parallel. Each plant consists of: a 5,988 gallon anoxic tank, a 4,837 gallon nitrification tank, a 6,605 gallon MBR tank, two 100 membrane plate cassatas, an anoxic tank, two membrane tank biological recirculation air lifts, and sludge waste pumps. Each of the two parallel treatment units has its own influent automatic fine opening (3 mm) drum strainer and 7,000-gallon sludge holding tank. The system also includes an aerated 5,000-gallon effluent equalization tank, two UV disinfection units and emergency generator.

Approve	Deny	Signatures	Date
X		<i>Ketan Thaker</i> Ketan Thaker / Project Manager	11/3/2021
X		<i>Pravin Patel</i> Pravin C. Patel, P.E. / Environmental Engineer Manager	11/3/2021

Summary of Review

Following are effluent limits:

PARAMETERS	EFFLUENT LIMITS (Av. Mo. In mg/l)	BASIS
CBOD5	10	DRBC - SPW
Total Suspended Solids	10	DRBC - SPW
Ammonia- Nitrogen (May 1 – Oct 31)	1.5	DRBC - SPW
Ammonia – Nitrogen (Nov 1 – Apr 30)	3.0	DRBC - SPW
Total Phosphorus	0.1	92a.61
Dissolved Oxygen	6.0 (minimum)	DRBC - SPW
pH (Standard Units – SU)	6.0 to 9.0 SU	92a.47, 95.2
Fecal Coliform (No./100 ml)	50#/100 ml (Geo Mean)	DRBC - SPW
Total Dissolved Solids	1,000	DRBC
Total Nitrogen	10	DRBC - SPW
UV Intensity (mW/cm2)	Report	SOP
BOD5 Influent	Report	SOP
TSS Influent	Report	SOP
Nitrite-Nitrate as N	Report	DRBC
E. Coli (No./100 ml)	Report	SOP

Act 14 Notification to Upper Makefield Township on February 26, 2021.
Act 14 Notification to Bucks County Commissioners on February 26, 2021.

Sludge use and disposal description and location(s): Sludge is sent to Hatfield (HTMA) for treatment and disposal.

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.	<u>001</u>	Design Flow (MGD)	<u>0.05555</u>
Latitude	<u>40° 16' 26.91"</u>	Longitude	<u>-74° 55' 53.65"</u>
Quad Name	_____	Quad Code	_____
Wastewater Description: <u>Sewage Effluent</u>			

Receiving Waters	<u>Houghs Creek</u>	Stream Code	<u>02958</u>
NHD Com ID	<u>26043886</u>	RMI	<u>2.4</u>
Drainage Area	_____	Yield (cfs/mi ²)	_____
Q ₇₋₁₀ Flow (cfs)	_____	Q ₇₋₁₀ Basis	_____
Elevation (ft)	_____	Slope (ft/ft)	_____
Watershed No.	<u>2-E</u>	Chapter 93 Class.	_____
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 _____

PWS Waters	_____	Flow at Intake (cfs)	_____
PWS RMI	_____	Distance from Outfall (mi)	_____

Treatment Facility Summary				
Treatment Facility Name: The Enclave WWTP				
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Activated Sludge	UV	0.055
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.07	162	Not Overloaded		

Compliance History

DMR Data for Outfall 001 (from September 1, 2020 to August 31, 2021)

Parameter	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20
Flow (MGD) Average Monthly	0.01033 9	0.01014 8	0.01075 1	0.00860 1	0.00859	0.01037 7	0.01093 9	0.01095 8	0.01250 6	0.01184 8	0.01168 6	0.01164 6
pH (S.U.) Instantaneous Minimum	7.03	6.83	7.19	6.9	6.99	7.31	7.49	7.56	7.13	6.53	6.34	7.0
pH (S.U.) Instantaneous Maximum	7.64	8.37	8.12	7.98	8.11	8.79	8.93	8.65	8.77	8.64	8.9	8.41
DO (mg/L) Minimum	7.88	7.28	7.93	8.01	8.56	8.27	8.12	7.91	8.10	8.16	8.11	7.39
CBOD5 (mg/L) Average Monthly	< 2	< 3	< 3	< 2	> 41	< 2	< 2	< 2.0	< 2	< 2	< 2	< 10
BOD5 (mg/L) Influent Average Monthly	241	300	313	266	312	249	212	274	256	241	208	210
BOD5 (mg/L) Influent Instantaneous Maximum	267	329	370	298	389	267	214	277	273	263	248	235
TSS (mg/L) Average Monthly	< 1	< 1	< 1	< 1	< 2	< 1	< 1	1	< 2	1	< 1	< 1
TSS (mg/L) Influent Average Monthly	49	238	215	145	< 183	68	77	106	86	98	101	180
TSS (mg/L) Influent Instantaneous Maximum	53	320	286	264	288	112	92	148	102	143	128	270
Total Dissolved Solids (mg/L) Average Monthly			836.43			743.33			694.17			827.33
Fecal Coliform (CFU/100 ml) Geometric Mean	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2

**NPDES Permit Fact Sheet
The Enclave WWTP**

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Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
UV Intensity (mW/cm²) Instantaneous Minimum	1.3	1.4	1.7	1.1	0.8	1.1	1.3	1.6	1.7	2.1	1.5	3029.3
Nitrate-Nitrite (mg/L) Average Monthly			5.04			< 6.95			< 5.21			< 4.29
Total Nitrogen (mg/L) Average Monthly	< 7	< 6	< 6	< 5	< 6	< 7	< 7	< 8	< 7	< 5	< 5	< 6
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Phosphorus (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	0.1	0.1	< 0.1	0.1	< 0.1	0.1	0.1	< 0.1

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	Daily Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	Continuous	Recorded
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	XXX	20	2/month	24-Hr Composite
BOD5 Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	Report	2/month	24-Hr Composite
TSS Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	Report	2/month	24-Hr Composite
TSS	XXX	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1000.0 Avg Qrtly	XXX	2000	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	50 Geo Mean	XXX	1000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	50 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV Intensity (mW/cm ²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Metered
Nitrate-Nitrite	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	Grab

Outfall001 , 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	Daily Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Nitrogen	XXX	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	3.0	XXX	6	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	1.5	XXX	3	2/month	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	0.1	XXX	0.2	2/month	24-Hr Composite