pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0044776**
Facility Type	**Municipal**	APS ID	**1094178**
Major / Minor	**Minor**	Authorization ID	**1449772**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Northwestern Chester County Municipal Authority**	Facility Name	**Honey Brook Township STP**
Applicant Address	187 Dampman Road	Facility Address	187 Dampman Road
	Honey Brook, PA 19344-0308		Honey Brook, PA 19344-1727
Applicant Contact	David Eames	Facility Contact	Derek Ink
Applicant Phone	(610) 273-2265	Facility Phone	(610) 273-2264
Client ID	79758	Site ID	446555
Ch 94 Load Status	Not Overloaded	Municipality	Honey Brook Township
Connection Status	No Limitations	County	Chester
Date Application Received	June 29, 2023	EPA Waived?	No
Date Application Accepted		If No, Reason	Christina River Basin TMDL

Purpose of Application: Permit renewal for discharge of treated sewage

Summary of Review

The applicant requests renewal of Northwestern Chester County Municipal Authority's NPDES permit for the discharge of 0.6 million gallons per day of treated sewage effluent from Honey Brook Township STP to the West Branch Brandywine Creek.

The sewage treatment plant is designed as an aerated lagoon system followed by tertiary filtration and includes one influent mechanical bar screen, two primary lagoons, two tertiary lagoons, one polishing lagoon, two DAF tanks, two sand filters and one chlorine contact tank. WQM Permit 1506402 A-1 was issued in March 2023 for nitrification upgrades at the STP as facility was having issues in meeting Ammonia effluent limits during the winter months when water temperatures drop below 41 degrees Fahrenheit. The upgrade project consists of replacement of the existing Primary Lagoons surface aerators and Bio-Bloc system, the installation of a new Primary Lagoons diffused aeration system and a new aerated moving bed biofilm reactor (MBBR) for improved nitrification upgrades at the STP. The Authority will be switching from powered alum to liquid alum for their phosphorus removal at the STP.

The Christina River Basin Total Maximum Daily Load (TMDL) for nutrients and dissolved oxygen for low-flow conditions, issued by the Environmental Protection Agency (EPA) on January 19, 2001; and revised in October 2002 and April 2006, includes this discharge. In the TMDL documents, this discharge is in Table 11, Level 2 Allocations for discharges that received reductions from EPA's TMDL modeling and in Summary Table 13. Prior to the TMDL, the permit requirements included average monthly effluent limits for the TMDL parameters CBOD5 (15 mg/l and 75 lbs/day, 05/01 to 10/31), NH3-N (3.0 mg/l and 15 lbs/day, 05/01 to 10/31), Total Phosphorus (2 mg/l and 10 lbs/day) and DO (minimum 6.0 mg/l). The TMDL reduced the limits for CBOD5 (13.5 mg/l rounded to 14 mg/l and 68 lbs/day, 05/01 to 10/31), NH3-N (2.7 mg/l and 13.5 lbs/day, 05/01 to 10/31), and Total Phosphorus (1.8 mg/l and 9.0 lbs/day). DO did not change. The TMDL allocations for Total Phosphorus are applied in the permit as monthly average limits from April 1 through October 31. Limits of 2.0 mg/l and 10.0 lbs/day are applied for the remainder of the year, from November 1 through March 31, consistent with Department guidelines (doubling the summer limit up to a maximum of 2.0 mg/l). EPA also included an allocation for Total Nitrogen (10 mg/l and 50 lbs/day) in the TMDL. Since prior permits didn't include limits or monitoring requirements for TN, the permit

Approve	Deny	Signatures	Date
X		Ketan Thaker Ketan Thaker / Project Manager	2/282024
X		Pravin Patel Pravin C. Patel, P.E. / Environmental Engineer Manager	02/28/2024

Summary of Review

issued in 2008 required monitoring for TN to collect data for evaluation of reasonable potential for the next renewal. On August 29, 2012, EPA received and acknowledged DEP's June 27, 2012 (and subsequently revised August 14, 2012). This facility is included in the High Flow TMDL for Bacteria & Sediment in the Christina River Basin – PA, DE, MD, signed 9/7/06. Table 2-2 of the report shows the fecal coliform (200/100ml) and TSS loads (30 mg/l or 68 kg/day) for facilities included in the TMDL. Also, effluent limits for Nutrients and Dissolved Oxygen in the draft permit are consistent with Total Maximum Daily Loads for Nutrient and Dissolved Oxygen under High Flow Conditions Christina River Basin - PA, DE, MD issued by Environmental Protection Agency (EPA) in September 2006. Current limits for nutrients, dissolved oxygen, sediments, bacteria are consistent with all three Christina River Basin TMDLs WLAs.

PARAMETER	EFFLUENT LIMIT (AV. MO. mg/l)	BASIS
CBOD5	13.5	Christina River Basin TMDL
Total Suspended Solids	30.0	Christina River Basin TMDL
Ammonia-N	2.7	Christina River Basin TMDL
Total Phosphorus	1.8	Christina River Basin TMDL
Total Nitrogen	28.8	Christina River Basin TMDL
Fecal Coliform (No./100ml)	200 (Geo. Mean)	Christina River Basin TMDL
pH (S.U)	6.0 to 9.0 S.U.	Pa 92a.47, 95.2
Total Residual Chlorine	0.5	Pa 92a.47-48
Dissolved Oxygen	6.0 Minimum	Christina River Basin TMDL
Color (Pt-Co Units)	75 (I. Max)	Pa Code 93.7
E. Coli	Report	Pa. Code 92a.47

Effluent limits for all the parameters will remain the same in this permit renewal. Monthly monitoring for E. Coli is included in this permit renewal and is consistent with SOP. Discharge is in generally in compliance with existing permit limits.

The reported value for Total Dissolved Solids (TDS) is 470 mg/l which is less than 50% of DRBC limit of 1000 mg/l. Therefore, no monitoring is required.

The existing permit includes a 75 pt/co limit for True Color due to small industrial wastewater flow from a molasses manufacturing company connected to sewer system. The permit limit is continued for this renewal.

The requirement to monitor/report the average weekly and average monthly stream flow at the USGS gauge 01480300 (West Brandywine Creek at Birdell), located less than a quarter of a mile downstream of the discharge, is carried over from previous permits. In-stream NH3-N samples have been collected and continue to be required at a sampling frequency of 1/week during periods when the weekly average stream flow is less than 8.5 cfs (5.5 mgd).

Chester County Commissioners received written notification May 31, 2023, by certified mail regarding this application to the Department.

Honey Brook Township received written notification May 31, 2023, by certified mail regarding this application to the Department.

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)	.6
Latitude	40Âº 4' 50.92"	Longitude	-75Âº 52' 19.50"
Quad Name	Wagontown	Quad Code	1839
Wastewater Description:	Sewage Effluent		
Receiving Waters	West Branch Brandywine Creek (HQ-TSF, MF)	Stream Code	00085
NHD Com ID	26105586	RMI	0.3900
Drainage Area	18.7 mi sq.	Yield (cfs/mi^2)	0.176
Q_{7-10} Flow (cfs)	3.3	Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-H	Chapter 93 Class.	HQ-TSF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS, SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE		
TMDL Status	Final	Name	Christina River Basin

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: Honey Brook Township STP

WQM Permit No.	Issuance Date
1506402 - Nitrification Upgrade	3/9/2023

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage			Gas Chlorine	0.6

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.6	1201	Not Overloaded		

Compliance History

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

Parameter	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23
Flow (MGD) Average Monthly	0.506	0.258	0.205	0.238	0.214	0.180	0.229	0.232	0.235	0.267	0.272	0.363
Flow (MGD) Daily Maximum	1.035	1.024	1.052	1.15	0.944	0.400	0.936	0.920	0.972	1.047	0.993	1.026
pH (S.U.) Instantaneous Minimum	6.9	6.8	6.9	6.8	6.9	6.6	6.8	6.9	6.8	6.5	6.7	6.7
pH (S.U.) Instantaneous Maximum	7.4	7.5	7.4	7.6	7.3	7.4	7.5	7.3	7.4	7.5	7.6	7.2
DO (mg/L) Instantaneous Minimum	9.1	8.6	6.5	6.3	6.2	6.7	6.2	6.2	6.1	7.5	8.7	10.0
TRC (mg/L) Average Monthly	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2
TRC (mg/L) Instantaneous Maximum	0.3	0.2	0.3	0.2	0.2	0.2	0.4	0.3	0.4	0.4	0.3	0.4
Color (Pt-Co Units) Instantaneous Maximum	13	14	13	22	23	16	21.0	18	19	23	50	18.0
CBOD5 (lbs/day) Average Monthly	17	6	6	9	5	5.0	< 6	18	< 11	18	18	15
CBOD5 (lbs/day) Weekly Average	48	6	7	16	6	5.0	< 6	45	20	24	23	19
CBOD5 (mg/L) Average Monthly	6.0	< 2.0	< 2.0	2.3	< 2.0	< 2.0	2.4	7.0	< 5.0	6.5	12.1	5.2
CBOD5 (mg/L) Weekly Average	16.0	< 2.0	< 2.0	3.0	2.0	2.0	< 2.0	19.0	9.0	9.0	14.9	6.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	562	448	377	387	410	394	408	377	382	458	499	492

BOD5 (mg/L) Raw Sewage Influent Average Monthly	169	193	211	201	208	202	219	181	182	201	195	159
TSS (lbs/day) Average Monthly	14	11	12	17	10	10	10	11	< 20	38	39	34
TSS (lbs/day) Raw Sewage Influent Average Monthly	367	463	377	360	391	320	286	303	296	422	392	384
TSS (lbs/day) Weekly Average	23	12	13	32	11	11	12	12	36	70	43	37
TSS (mg/L) Raw Sewage Influent Average Monthly	106	199	211	188	199	164	153	146	141	185	151	120
TSS (mg/L) Average Monthly	5.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 8.0	13.5	14.9	12.0
TSS (mg/L) Weekly Average	8.0	4.0	< 4.0	4.0	4.0	< 4.0	< 4.0	< 4.0	14.0	24.0	19.0	13.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 1	< 1.0	< 1	1	7	2.0	< 1	< 1	< 1.0	< 1	< 1.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	< 1	< 1.0	< 1	2	40	9.0	1	< 1	< 1.0	< 1	1
Total Nitrogen (lbs/day) Average Monthly	51.1	21.6	19.1	22.8	3.5	4.1	9.0	33.4	45.4	60.0	67.6	60.6
Total Nitrogen (mg/L) Average Monthly	17.8	7.73	6.62	5.44	1.56	1.59	3.49	7.63	18.4	21.3	25.1	21.5
Ammonia (lbs/day) Average Monthly	16.1	1.2	1.6	6.1	0.2	0.3	0.7	19.9	29.0	25.9	20.3	26.8
Ammonia (mg/L) Average Monthly	5.57	0.42	0.64	0.99	< 0.1	< 0.1	0.26	7.63	11.68	9.23	7.33	9.54
Ammonia (mg/L) Instream Monitoring Instantaneous Maximum	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 (lbs/day) Average Monthly	1.8	1.3	1.4	6.5	5.5	4.8	3.0	4.4	5.0	3.3	2.1	3.0

Total Phosphorus (mg/L) Average Monthly	0.63	0.45	0.48	1.98	2.24	1.8	1.24	1.67	2.01	1.17	0.79	1.09
Minimum Stream Flow (MGD) Instream Monitoring Average Monthly	54	7	6	6	7	7	6	9	9	12	12	33
Minimum Stream Flow (MGD) Instream Monitoring Weekly Average	8.3	5.6	5.7	4.2	5.3	5.2	5.4	7.0	7.8	9.6	9.6	11.9

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)	Required
	Average Monthly	Weekly Average	Average Monthly	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
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
TRC	XXX	XXX	XXX	0.5	XXX	1.7	1/day	Grab
Color (Pt-Co Units)	XXX	XXX	XXX	XXX	XXX	75	1/week	Grab
CBOD5 Nov 1 - Apr 30	125	187	XXX	25.0	38.0	50	1/week	24-Hr Composite
CBOD5 May 1 - Oct 31	68	102	XXX	14.0	21.0	28	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	Report	XXX	XXX	XXX	1/week	24-Hr Composite
TSS	150	225	XXX	30.0	45.0	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	Report	XXX	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	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	Weekly Average	Average Monthly	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen	144.1	XXX	XXX	28.8	XXX	57.6	1/week	24-Hr Composite
Ammonia Instream Monitoring	XXX	XXX	XXX	XXX	XXX	0.5	See Permit	Grab
Ammonia Nov 1 - Apr 30	40.5	XXX	XXX	8.1	XXX	16.2	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	13.5	XXX	XXX	2.7	XXX	5.4	1/week	24-Hr Composite
Total Phosphorus Nov 1 - Mar 31	10.0	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite
Total Phosphorus Apr 1 - Oct 31	9.0	XXX	XXX	1.8	XXX	3.6	1/week	24-Hr Composite
Minimum Stream Flow (MGD) Instream Monitoring	Report	Report	XXX	XXX	XXX	XXX	1/week	Measured