

Application Type Renewal  
Facility Type Municipal  
Major / Minor Minor

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

Application No. PA0030023  
APS ID 1090202  
Authorization ID 1442871

**Applicant and Facility Information**

Applicant Name	<u>Bryn Athyn Borough</u>	Facility Name	<u>Academy of The New Church STP</u>
Applicant Address	<u>P.O. Box 683</u> <u>Bryn Athyn, PA 19009</u>	Facility Address	<u>2839 Buck Road</u> <u>Bryn Athyn, PA 19009</u>
Applicant Contact	<u>Reid Heinrichs</u>	Facility Contact	<u>Reid Heinrichs</u>
Applicant Phone	<u>(215) 947-9889</u>	Facility Phone	<u>(215) 947-9889</u>
Client ID	<u>115787</u>	Site ID	<u>458574</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Bryn Athyn Borough</u>
Connection Status	<u>No Limitations</u>	County	<u>Montgomery</u>
Date Application Received	<u>April 24, 2023</u>	EPA Waived?	<u>No</u>
Date Application Accepted	<u></u>	If No, Reason	<u>Discharges to TMDL waters</u>
Purpose of Application	<u>Permit Renewal of NPDES Permit to discharge treated sewage.</u>		

**Summary of Review**

The permittee has submitted application for renewal of NPDES permit to discharge 0.065 MGD of treated sewage into unnamed tributary to Huntingdon Valley Creek. This Fact Sheet summarizes the evaluation of Bryn Athyn Borough's NPDES permit renewal application for the Academy of the New Church STP located at 2839 Buck road, in Bryn Athyn Borough, Montgomery County. This is an existing discharge of an annual average flow of 0.065-MGD (0.080-MGD monthly maximum) treated sewage to an unnamed tributary (UNT) to Huntingdon Valley Creek (PA Steam Code 64996).

The sewage treatment plant is a Conventional Activated sludge plant with partitioned zone for denitrification. Molasses is added as carbon source for denitrification. Sodium hypochlorite is added for disinfection, and sodium bisulfite is used for de-chlorination. Sodium Bicarbonate is added for to stabilize pH.

Huntingdon Valley Creek discharges into Pennypack Creek. In April 1998, EPA approved the Pennypack TMDL, which was prepared by DEP in accordance with Section 303(d)(1)(c) and (2) of the Clean Water Act.

Pennypack Creek (PA Stream Code 02409) (Lower Delaware River Sub Basin) was listed in Pennsylvania's 1996 303(d) list due to priority organics from industrial point sources, pathogens and organic enrichment/dissolved oxygen (DO) from municipal point sources. DEP has developed a TMDL for TCE, fecal coliform, CBOD<sub>5</sub> and NH<sub>3</sub>-N consistent with federal regulations and agency guidance.

The effluent limits included in the draft NPDES permit are equal to or more stringent than what is required by the Pennypack TMDL. Effluent limits for all parameters will remain the same for this permit renewal. Monitoring requirement for E.Coli is added in the draft permit and is consistent with SOP. The review of e-DMRs shows that effluent is generally in compliance with permit limits.

Approve	Deny	Signatures	Date
X		<i>Ketan Thaker</i> Ketan Thaker / Project Manager	12/7/2023
X		<i>Pravin Patel</i> Pravin C. Patel, P.E. / Environmental Engineer Manager	12/07/2023

**Summary of Review**

Pennypack TMDL

The following table summarizes the Pennypack TMDL wastelaod allocations (WLAs):

Parameter	TMDL (lbs/day)	WLA (lbs/day)	LA (lbs/day)	MOS (lbs/day)
TCE <sup>(1)</sup>	0.465	0.03	0	0.435
Fecal Coliform	200 count/ 100 ml	200 count/ 100 ml	0	Implicit
CBOD <sub>5</sub>	1026	988	38	38
NH <sub>3</sub> -N	198.4	194	0.4	4.4

Comments: <sup>(1)</sup> The WLA for TCE was specific to the Fisher & Porter industrial facility.

All municipal point sources affecting stream segments were assigned WLAs for fecal coliform, CBOD<sub>5</sub> and NH<sub>3</sub>-N. The WLAs are as follows

Name of Point Source	CBOD <sub>5</sub>	NH <sub>3</sub> -N
Upper Moreland Hatboro Joint Sewer Authority	909	143
Gloria Dei and Bethayers Apartment	15	15
Lower Moreland School & Academy of New Church STP (discharge to Huntingdon Valley Creek)	4.4(*)	1.8(*)
Meadowbrook Apartments	32	32
Holy Redeemer Hospital	23.5	2.4
Tall Trees Apartments	3.8	3.8
<b>Total</b>	988	198

Comments: \*The TMDL WLA is based on total flow of 0.078 MGD (Huntingdon Valley Creek). Concentration based effluent limits of 6.8 mg/l for CBOD<sub>5</sub> and 2.8 mg/l for NH<sub>3</sub>-N were calculated using the WLA and a total flow of 0.078 MGD.

The TMDL WLA for Huntingdon Valley Creek was divided as follows:

Name of Point Source	CBOD <sub>5</sub>	NH <sub>3</sub> -N
Lower Moreland School District	0.74	0.30
Academy of the New School	3.68	1.52

Therefore, the TMDL based effluent limits for the Academy of the New Church are as follows:

Parameter	Concentration (mg/l)	Loading (lbs/day)
CBOD <sub>5</sub>	6.8	3.68
NH <sub>3</sub> -N (**)	2.8	1.52
Fecal Coliform	200 count/100 ml	200 count/100 ml

Comments: (\*\*) The NH<sub>3</sub>-N limits listed in the Pennypack TMDL assumes that the discharge is directly to Huntingdon Valley Creek. The discharge is actually to a small unnamed tributary at a point approximately 0.4 miles upstream of Huntingdon Valley Creek. The Q7-10 stream flow at the point of discharge is approximately 0.01-cfs. Therefore, the NH<sub>3</sub>-N limit for summer season was revised to NH<sub>3</sub>-N surface water criteria at a pH of 7.0 and temperature of 25° C. The winter season NH<sub>3</sub>-N limit is three (3) times the summer season limit. The revised NH<sub>3</sub>-N limits are 1.5 mg/l (summer) and 4.5 mg/l (winter).

Sludge use and disposal description and location(s): Biosolids are treated and disposed via onsite reed beds.

Act-14 Notification to Borough of Bryn Athyn on February 28, 2023  
Act-14 Notification to Montgomery County Commissioners on February 28, 2023.

**Summary of Review**

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>0.065</u>
Latitude	<u>40° 7' 16.80"</u>	Longitude	<u>-75° 3' 5.97"</u>
Quad Name	<u>Hatboro</u>	Quad Code	<u>1745</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Huntingdon Valley Creek (TSF, MF)</u>	Stream Code	<u>02440 (64996)</u>
NHD Com ID	<u>25598939</u>	RMI	<u>1.05 (0.4)</u>
Drainage Area	<u>0.1</u>	Yield (cfs/mi <sup>2</sup> )	<u>0.1</u>
Q <sub>7-10</sub> Flow (cfs)	<u>0.01</u>	Q <sub>7-10</sub> Basis	<u>USGS StreamStat</u>
Elevation (ft)	<u></u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>3-J</u>	Chapter 93 Class.	<u>TSF, MF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>CAUSE UNKNOWN, SILTATION</u>		
Source(s) of Impairment	<u>Urban Runoff/Storm Sewers</u>		
TMDL Status	<u>EPA Approved (1998)</u>	Name	<u>Pennypack Creek TMDL</u>
Background/Ambient Data	Data Source		
pH (SU)	<u></u>	<u></u>	
Temperature (°F)	<u></u>	<u></u>	
Hardness (mg/L)	<u></u>	<u></u>	
Other:	<u></u>	<u></u>	
Nearest Downstream Public Water Supply Intake	<u>PWD</u>		
PWS Waters	<u>Delaware River</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u></u>

Originally, the unnamed tributary (UNT) to Huntingdon Valley Creek was not listed in printed versions of the Pennsylvania Gazetteer of Streams. Subsequently, the receiving stream was added to digital versions of the Gazetteer and is depicted in the Department's Historical Streams layer of eMAP as PA Stream Code 64996.

After several site visits and a review of aerial photography, the Department determined that there is a well-defined stream channel at the point of discharge. Prior to the confluence with Huntingdon Valley Creek, the receiving stream flows into a wetland area. The physical confluence of the receiving stream with Huntingdon Valley Creek is not well defined. The receiving stream does not appear on the Department's eMAP NHD stream layer, so Outfall 001 was snapped to a point on Huntingdon Valley Creek. Nonetheless, the discharge point to UNT 64996 is considered the point of first use.

USGS StreamStat was used to reassess the drainage area and Q<sub>7-10</sub> flow of the receiving stream at the point of discharge. StreamStat estimated that the drainage area of the receiving stream at the point of discharge is 0.1 mi<sup>2</sup> with a Q<sub>7-10</sub> of 0.01-cfs.

Treatment Facility Summary				
<b>Treatment Facility Name:</b> Academy of The New Church STP				
<b>WQM Permit No.</b>		<b>Issuance Date</b>		
416401		6/2/2016		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Extended Aeration	Sodium Hypochlorite	0.065
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.08	160	Not Overloaded		

**Development of Effluent Limitations**

<b>Outfall No.</b> <u>001</u>	<b>Design Flow (MGD)</b> <u>.065</u>
<b>Latitude</b> <u>40° 7' 34.99"</u>	<b>Longitude</b> <u>-75° 3' 17.21"</u>
<b>Wastewater Description:</b> <u>Sewage Effluent</u>	

**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
CBOD <sub>5</sub>	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform	200 / 100 ml	Geo Mean	DRBC	92a.47(a)(5)
Fecal Coliform (*)	1,000 / 100 ml	IMAX	DRBC	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments: (\*) During winter season from October through April, the instantaneous maximum concentration of fecal coliform organisms shall not be greater than 1,000 per 100 milliliters in more than 10 percent of the samples tested.

**Water Quality-Based Limitations**

Water Quality-Based Limitations for this facility are based on the Pennypack TMDL approved by the EPA in April 2008. The regional biologists have determined thru several stream surveys (1997, 2001, 2010) that the discharge has a deleterious impact on aquatic life, and that the UNT is intermittent w/aquatic life that should be protected. The biologist recommended that the discharge point be moved to Huntingdon Valley Creek, if possible. In lieu of moving the discharge to Huntingdon Valley Creek, the effluent limits were reevaluated based on a discharge to an intermittent stream.

**Ammonia-Nitrogen (NH<sub>3</sub>-N)**

The NH<sub>3</sub>-N limits listed in the Pennypack TMDL assumes that the discharge is directly to Huntingdon Valley Creek. The discharge is actually to a small unnamed tributary at a point approximately 0.4 miles upstream of Huntingdon Valley Creek. The Q7-10 stream flow at the point of discharge is approximately 0.01-cfs. Therefore, the NH<sub>3</sub>-N limit for summer season was revised to NH<sub>3</sub>-N surface water criteria at a pH of 7.0 and temperature of 25° C. The winter season NH<sub>3</sub>-N limit is three (3) times the summer season limit. The NH<sub>3</sub>-N limits are 1.5 mg/l (summer) and 4.5 mg/l (winter).

The above limits for NH<sub>3</sub>-N is consistent with the ABACT technology-based limits for a sewage treatment facility discharging greater than 50,000 gallons per day.

**Total Residual Chlorine (TRC)**

The effluent limit of 0.2 mg/l for TRC is carried over from the last permit. The TRC limit of 0.2 mg/l is based on 30 samples month, Q<sub>7-10</sub> of 0.01-cfs, background chlorine demand of 0.6 mg/l, and discharge chlorine demand of 0.5 mg/l.

**Nitrate-Nitrite (NO<sub>2</sub>-N and NO<sub>3</sub>-N)**

On August 2010, stream survey was performed by Department Biologist revealed during dry conditions the flow in the intermittent stream never reaches Huntingdon Valley Creek. Therefore, Nitrate-Nitrite limits were added to the existing permit in order to protect the groundwater aquifer for potable water use.

Nutrients (Total Phosphorus, Total Nitrogen)

In accordance with Standard Operating Procedures (SOPs), effluent monitoring for Total Phosphorus and Total Nitrogen are included in the NPDES permit.

E. Coli Monitoring

In accordance with Standard Operating Procedures (SOPs), effluent monitoring for E. Coli is included in the NPDES permit.

Influent Monitoring

In accordance with Standard Operating Procedures (SOPs), influent monitoring for BOD<sub>5</sub> and TSS are included in the NPDES permit.

Compliance History

DMR Data for Outfall 001 (from November 1, 2022 to October 31, 2023)

Parameter	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22
Flow (MGD) Average Monthly		0.0405	0.0304	0.0308	0.0291	0.0301	0.0316	0.0301	0.029	0.0332	0.0301	0.0306
Flow (MGD) Daily Maximum		0.0662	0.0558	0.0491	0.056	0.0457	0.0562	0.0466	0.0518	0.0603	0.0557	0.0543
pH (S.U.) Instantaneous Minimum		7.29	7.51	7.40	7.39	7.22	7.19	7.36	7.27	7.25	7.22	7.34
pH (S.U.) Instantaneous Maximum		7.89	7.79	7.68	7.66	7.78	7.71	7.69	7.89	7.78	7.78	7.67
DO (mg/L) Instantaneous Minimum		8.06	8.16	8.09	8.02	8.13	9.03	8.97	8.59	8.46	8.94	8.19
DO (mg/L) Average Monthly		8.37	8.39	8.37	8.49	9.2	9.63	9.90	9.89	9.32	10.47	8.56
TRC (mg/L) Average Monthly		0.073	0.08	0.074	0.058	0.074	0.085	0.08	0.082	0.082	0.082	0.075
TRC (mg/L) Instantaneous Maximum		0.12	0.115	0.115	0.105	0.115	0.115	0.115	0.12	0.22	0.115	0.12
CBOD5 (lbs/day) Average Monthly		1.07	0.70	0.60	< 0.40	1.04	1.00	0.30	0.90	< 0.70	0.60	0.90
CBOD5 (lbs/day) Weekly Average		1.10	0.80	0.80	< 0.40	1.20	1.10	0.30	1.20	< 0.70	0.60	0.90
CBOD5 (mg/L) Average Monthly		2.70	2.80	2.40	< 2.0	3.10	4.30	2.70	3.40	< 2.70	2.40	4.50
CBOD5 (mg/L) Weekly Average		2.70	3.10	2.40	< 2.0	3.70	4.70	2.70	3.80	< 2.70	2.40	4.50
BOD5 (lbs/day) Raw Sewage Influent   Average Monthly		67	54	35	33	89	46	22	31	47	70	82
BOD5 (mg/L) Raw Sewage Influent   Average Monthly		172	208	127	177	254	204	204	232	184	266	378
TSS (lbs/day) Average Monthly		1.30	1.10	0.70	0.50	1.30	1.60	0.8	1.80	1.10	1.40	1.30



**NPDES Permit Fact Sheet  
Academy of New Church STP**

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TSS (lbs/day) Raw Sewage Influent   Average Monthly	70	48	33	36	81	36	9	40	32	55	43
TSS (lbs/day) Weekly Average	1.30	1.90	0.70	0.60	1.90	1.70	0.8	3.10	1.10	1.40	1.30
TSS (mg/L) Average Monthly	4	5.00	3	3.00	4.00	8.00	8.00	6.00	5.00	6.00	5.0
TSS (mg/L) Raw Sewage Influent   Average Monthly	178	184	127	190	223	153	85	323	125	217	221
TSS (mg/L) Weekly Average	4	9.00	3	3.00	6.00	10.00	8.00	10.00	5.00	6.00	5.0
Fecal Coliform (No./100 ml) Geometric Mean	< 2	< 2	< 4	< 137	< 18	18	< 2	< 2	< 5	< 20	< 13
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 2	< 2	7	9400	164	21	< 2	< 2	11	210	82
Nitrate-Nitrite (lbs/day) Average Monthly	< 3.0	0.20	0.30	0.20	2.3	1.3	0.40	0.30	5.0	0.40	< 1.1
Nitrate-Nitrite (mg/L) Average Monthly	< 7.5	0.6	0.94	0.86	6.74	7.08	3.61	1.24	6.96	1.51	< 3.7
Total Nitrogen (lbs/day) Average Monthly	5	0.50	0.60	0.40	3.0	2	0.60	0.8	3.0	1	< 2
Total Nitrogen (mg/L) Average Monthly	11.74	1.80	2.30	2.06	8.73	9.77	6.09	3.05	10.3	3.94	< 6.36
Ammonia (lbs/day) Average Monthly	0.06	0.02	0.06	0.04	0.08	0.04	0.03	0.10	< 0.02	0.10	0.10
Ammonia (mg/L) Average Monthly	0.16	0.06	0.21	0.20	0.22	0.19	0.33	0.42	< 0.08	0.40	0.41
Total Phosphorus (lbs/day) Average Monthly	3	0.9	1	1	2	2	0.40	0.10	0.60	1	0.7
Total Phosphorus (mg/L) Average Monthly	6.51	3.25	5.04	7.22	5.55	7.4	3.82	0.57	2.38	3.99	3.33

**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) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	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	5.0 Inst Min	Report	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.2	XXX	0.6	1/day	Grab
CBOD5 Nov 1 - Apr 30	7.37	11.6	XXX	13.6	20.4	27.2	2/month	24-Hr Composite
CBOD5 May 1 - Oct 31	3.69	5.53	XXX	6.8	10.2	13.6	2/month	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	5.4	8.1	XXX	10	15	20	2/month	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	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/month	Grab
Nitrate-Nitrite	5.4	XXX	XXX	10	XXX	20	2/month	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia Nov 1 - Apr 30	2.98	XXX	XXX	4.5	XXX	9	2/month	24-Hr Composite
Ammonia May 1 - Oct 31	0.81	XXX	XXX	1.5	XXX	3	2/month	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite