pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Amendment, Major**	Application No.	**PA0053783**
Facility Type	**Non-Municipal**	APS ID	**994464**
Major / Minor	**Minor**	Authorization ID	**1275369**

Applicant and Facility Information

Applicant Name	**Aqua Pennsylvania Wastewater Inc.**	Facility Name	**Penn London Elementary School**
Applicant Address	762 West Lancaster Avenue	Facility Address	375 South Jennersville Road
	Bryn Mawr, PA 19010-3402		West Grove, PA 19390-8401
Applicant Contact	Kyle Roberts	Facility Contact	Thomas Cicala
Applicant Phone	(610) 608-1897	Facility Phone	(610) 520-6384
Client ID	62614	Site ID	457762
Ch 94 Load Status	Not Overloaded	Municipality	New London Township
Connection Status	Self Imposed Connection Prohibition	County	Chester
Date Application Received	May 17, 2019	EPA Waived?	No
Date Application Accepted	June 3, 2019	If No, Reason	Christina River Basin TMDL, DEP Discretion

Purpose of Application: Addition of ultraviolet disinfection.

Summary of Review

This Fact Sheet summarizes the evaluation of Aqua Pennsylvania Wastewater Inc. application to amend their current NPDES permit to discharge 0.02 mgd of treated sewage from Penn London Elementary School sewage treatment plant (STP) through Outfall 001. Also authorized is the discharge of groundwater to Outfall 002. This discharge is from an underground drainage system designed to prevent treatment tank floatation. Both outfalls discharge to an Unnamed Tributary to West Branch White Clay Creek in watershed 3-I – White Clay Creek a designated Trout Stocking Fishery (TSF).

The permit amendment includes the following changes:

1. Ultraviolet Light Transmittance reporting requirement.
2. Removal of Total Residual Chlorine limits.

Act 14 Notifications:

Chester County Planning Commission - May 8, 2019
New London Township - May 8, 2019

Recommended Part C Conditions:

I. Other Requirements
   A. No Stormwater
   B. Acquire Necessary Property Rights
   C. Sludge Disposal Requirement
   D. Abandon STP when Municipal Sewers Available

Approve	Deny	Signatures	Date
X		Juan J. Vicenty-Gonzalez / Environmental Engineering Specialist /S/	August 22, 2019
X		Pravin C. Patel, P.E. / Environmental Engineer Manager /S/	8/22/2019

Summary of Review

E. Total Residual Chlorine Requirement
F. Dry Stream Discharge
G. Remedial Measures if Unsatisfactory Effluent
H. Twice per Month Sampling
I. WQM Permit if WWTP Upgrades

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)	.02
Latitude	39º 47' 51.57"	Longitude	-75º 52' 50.89"
Quad Name	Oxford	Quad Code	2038
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to West Branch White Clay Creek (TSF, MF)	Stream Code	00473
NHD Com ID	26097862	RMI	1.29
Drainage Area	0.25 mi^2	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	0.47 cfs	Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-I	Chapter 93 Class.	TSF, MF
Existing Use	**None**	Existing Use Qualifier	N/A
Exceptions to Use	None	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS, PATHOGENS, SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE, SOURCE UNKNOWN		
TMDL Status	Final	Name	Christina River Basin

Changes Since Last Permit Issuance: No Changes.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	.009
Latitude	39º 47' 42.57"	Longitude	-75º 52' 50.80"
Quad Name	Oxford	Quad Code	2038
Wastewater Description:	Groundwater from an underground drainage system		
Receiving Waters	Unnamed Tributary to West Branch White Clay Creek (TSF, MF)	Stream Code	00473
NHD Com ID	26097862	RMI	1.29
Drainage Area	0.25 mi^2	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	0.47 cfs	Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-I	Chapter 93 Class.	TSF, MF
Existing Use	**None**	Existing Use Qualifier	N/A
Exceptions to Use	None	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	NUTRIENTS, PATHOGENS, SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE, SOURCE UNKNOWN		
TMDL Status	Final	Name	Christina River Basin

Changes Since Last Permit Issuance: No Changes.

Treatment Facility Summary

Treatment Facility Name: Aqua Pennsylvania Wastewater Inc.

WQM Permit No.	Issuance Date
1512401	February 13, 2012
1512401 A1	June 21, 2018

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Activated Sludge With Solids Removal	Ultraviolet	0.02

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.02	53	Not Overloaded	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance: Addition of Ultraviolet Transmittance disinfection.

The sewage treatment plant consists of a comminutor screen, two equalization tanks, and four aeration tanks connected in series (to be replaced with four stage Bardernpho process), two secondary clarifiers, a rapid sand filter, two aerated sludge holding tanks, and ultraviolet disinfection. Emergency chlorine disinfection will be done in the event the ultraviolet system fails. Emergency chlorine disinfection would be achieved by adding chlorine tablets in the clarifier effluent through, as needed.

The permittee was granted a permit amendment to WQM permit 1512401A-1 for the modification of sewage facilities consisting of: converting the existing extended aeration treatment system into a four stage Bardenpho process, replacing the chlorine disinfection system with an ultraviolet disinfection system with an ultraviolet disinfection system, installing a new SCADA and control system, installing a new emergency generator and water system, and improving the control building which will house new blowers and electric panels and the UV system.

A full-scale pilot test was performed at the plant. The following temporary units will be converted to permanently installed equipment:

1. Post equalization splitter box
2. Oxic Tank #1 (ET-6)
3. Oxic Tank #2 (ET-7)
4. Oxic Tank #3 (ET-9)
5. Anoxic Tank #1 (ET-3)
6. Anoxic Tank #2 (ET-4)
7. Anoxic Tank #3 (ET-5)
8. Anoxic Tank #4 (ET-8)
9. UV Disinfection System

A chemical building will be installed that will house chemical feed systems. Proposed chemical addition includes: magnesium, hydroxide, ammonium chloride, a soluble carbon source, and an aluminum salt.

Compliance History

DMR Data for Outfall 001 (from July 1, 2018 to June 30, 2019)

Parameter	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18
Flow (MGD) Average Monthly	0.000196	0.0005										0.0030
Flow (MGD) Daily Maximum	0.00097	0.0022										0.0210
pH (S.U.) Instantaneous Minimum	6.94	6.87										6.21
pH (S.U.) Instantaneous Maximum	8.45	7.70										7.07
DO (mg/L) Instantaneous Minimum	5.1	7.80										5.97
TRC (mg/L) Average Monthly	GG	GG										0.30
CBOD5 (lbs/day) Average Monthly	0.01668	0.018										0.05
CBOD5 (mg/L) Average Monthly	6.6	2.5										2.00
TSS (lbs/day) Average Monthly	0.00033	0.004										0.13
TSS (mg/L) Average Monthly	1.4	0.60										10.1
Fecal Coliform (No./100 ml) Geometric Mean	4	15.49										< 1
Fecal Coliform (No./100 ml) Instantaneous Maximum	4	48										< 1
Nitrate-Nitrite (mg/L) Average Monthly	1.1	3.7										3.1
Total Nitrogen (lbs/day) Average Monthly	0.00029	0.03										0.08
Total Nitrogen (mg/L) Average Monthly	1.77	4.59										3.15

Ammonia (lbs/day) Average Monthly	< 0.000083	0.0035										< 0.01
Ammonia (mg/L) Average Monthly	< 0.50	< 0.50										< 0.50
TKN (mg/L) Average Monthly	0.67	0.89										0.60
Total Phosphorus (lbs/day) Average Monthly	0.000083	0.00046										0.009
Total Phosphorus (mg/L) Average Monthly	0.41	0.07										0.36

DMR Data for Outfall 002 (from July 1, 2018 to June 30, 2019)

Parameter	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18
Flow (MGD) Average Quarterly	0.0072			0.0072			0.0072			0.0072		
pH (S.U.) Instantaneous Minimum	6.75			6.98			7.09			6.98		
pH (S.U.) Instantaneous Maximum	6.75			6.98			7.09			6.98		
DO (mg/L) Instantaneous Minimum	8.64			0.78			5.55			0.91		
TRC (mg/L) Average Quarterly	0.01			0.02			< 0.02			0.04		
CBOD5 (mg/L) Average Quarterly	< 2			< 2			< 2			< 2.0		
TSS (mg/L) Average Quarterly	1.6			6.4			7.6			0.8		
Fecal Coliform (No./100 ml) Average Quarterly	< 1			3			15			9		
Total Nitrogen (mg/L) Average Quarterly	3.3			5.6			3.4			3.2		
Ammonia (mg/L) Average Quarterly	< 0.50			0.01			< 0.50			< 0.50		
Total Phosphorus (mg/L) Average Quarterly	0.05			0.01			< 0.50			< 0.05		

Compliance History – Inspections & Violations

PA0053783 - Aqua Pennsylvania Wastewater Inc. - Inspections - Penn London Elem Sch

INSP ID	INSP CATEGORY	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	INSPECTOR ID	INSPECTOR	INSPECTION COMMENT	CREATION DATE	UPDATE DATE	# OF VIOLATIONS
2663912	PF	08/29/2017	Administrative/File Review	Violation(s) Noted	00604609	FLANNERY, STEVEN		11/22/2017	11/22/2017	2
2478566	PF	03/16/2016	Routine/Partial Inspection	No Violations Noted	00502688	MCADAMS, MICHAEL		04/27/2016		0
2621488	PF	07/25/2017	Routine/Partial Inspection	No Violations Noted	00502688	MCADAMS, MICHAEL		08/02/2017		0

PA0053783 - Aqua Pennsylvania Wastewater Inc. - Violations - Penn London Elem Sch

VIOL ID	VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE	INSP ID	INSP CATEGORY	INSPECTED DATE	INSP TYPE	INSPECTOR	VIOLATION COMMENT
802536	08/29/2017	CSL201	CSL - Unauthorized, unpermitted discharge of sewage to waters of the Commonwealth	08/29/2017	2663912	PF	08/29/2017	Administrative/File Review	FLANNERY, STEVEN	
802537	08/29/2017	CSL402(B)	CSL - Failure to obtain a permit for an activity that creates a danger of pollution as determined by DEP	08/29/2017	2663912	PF	08/29/2017	Administrative/File Review	FLANNERY, STEVEN	
1284	09/29/1997	UNSPF	Unspecified Violation	09/30/1997	4142	PF	09/29/1997	Routine/Complete Inspection	PILLER, STEPHEN	

281807	06/05/2001	92.51(4)O&M	Operation and Maintenance violations were present.	06/05/2001	1048711	PF	06/05/2001	Routine/Complete Inspection	PILLER, STEPHEN	
531478	01/09/2008	92.41LAB	Improper Laboratory procedures were used for analysis of effluent.	02/24/2008	1680297	PF	01/09/2008	Compliance Evaluation	MCADAMS, MICHAEL	
531479	01/09/2008	92.51(4)O&M	Operation and Maintenance violations were present.	02/24/2008	1680297	PF	01/09/2008	Compliance Evaluation	MCADAMS, MICHAEL	
552871	10/07/2008	92.41DMRVIO	Administrative review of DMR reveals violation(s).	11/01/2008	1756723	PF	10/07/2008	Administrative/File Review	MCADAMS, MICHAEL	
566448	08/15/2008	92.41DMR	Discharge Monitoring Report was not submitted or DMR was incomplete.	06/03/2009	1810552	PF	08/15/2008	Administrative/File Review	BAUER, ROBERT	
586661	04/20/2010	92.51(4)O&M	Operation and Maintenance violations were present.	05/14/2010	1883124	PF	04/20/2010	Compliance Evaluation	MCADAMS, MICHAEL	
726925	04/23/2015	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance	06/20/2016	2384693	PF	04/23/2015	Compliance Evaluation	MCADAMS, MICHAEL	

730686	07/23/2015	92A.75(A)	NPDES - Failure to submit NPDES renewal application at least 180 days prior to expiration or later approved date	11/05/2015	2392997	PF	07/23/2015	Administrative/File Review	FLANNERY, STEVEN	date NOV response due

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	.02
Latitude	39º 47' 51.51"	**Longitude**	-75º 52' 51.20"
Wastewater Description:	Sewage Effluent		

The Christina River Basin Total Maximum Daily Load (TMDL) for Nutrients and Dissolved Oxygen for Low-Flow Conditions, issued by the Environmental Protections Agency (EPA) on January 19, 2001 and subsequently revised on October 2002 and April 2006. Furthermore, DEP prepared and EPA acknowledged an Alternative Reduction Scenario for the Christina River Basin for Low Flow TMDL dated June 27, 2012 to reassigned some of the allocations within the dischargers by keeping the total load to the basin the same. Penn London Elementary School STP is part of an Alternative Reduction Scenario TMDL (Summary Table 19) for parameters: $CBOD_5$, NH_3N, Dissolved Oxygen, Total Nitrogen, and Total Phosphorus. The Christina River Basin, also has an approved High-Flow TMDL for Bacteria and Sediment (dated September 2006) for Fecal Coliform, *enterococci*, and TSS, flows and loads for nutrients and CBOD5. The limits for Total Suspended Solids (10 mg/l) and Fecal Coliform (200 No./100ml) will continue in this permit amendment and it is consistent with the High Flow TMDL for Bacteria and Sediment. The high flow TMDL allocations were not adjusted at the time when low flow TMDL under an “Alternative Reduction Scenario” was developed. Since, the Christina River Low-Flow TMDL is the driver for the Christina River High-Flow TDML especially for nutrients, therefore, it is assumed that compliance with the low flow TMDL, satisfies the compliance of the high flow TMDL.

All current permit requirements for pH, Dissolved Oxygen, $CBOD_5$, Total Suspended Solids, Fecal Coliform, Nitrate-Nitrite as N, Total Nitrogen, NH_3-N, Total Kjeldahl Nitrogen, and Total Phosphorus will remain the same in this permit amendment.

Ultraviolet light intensity disinfection reporting requirement was added per PADEP approved water quality management (WQM) permit amendment for the Penn London Elementary School STP issued on June 21, 2018. The WQM amendment approved various upgrades and modifications to the STP, including the installation of an ultraviolet disinfection system to replace the chlorine disinfection system. Part C language to minimize the concentration of Total Residual Chlorine will remain in this permit to address the emergency use of chlorine disinfection in the event that the ultraviolet system fails. Emergency chlorine disinfection would be achieved by adding tablets in the clarifier effluent trough, as needed.

Outfall No.	002	**Design Flow (MGD)**	.00425
Latitude	39º 47' 43.00"	**Longitude**	-75º 52' 52.00"
Wastewater Description:	Groundwater from an underground drainage system.		

All reporting requirements for Outfall 002 will continue once per quarter for the underground drainage system for $CBOD_5$, TSS, Ammonia-Nitrogen, Fecal Coliform, DO, pH, Total Residual Chlorine, Total Nitrogen, and Total Phosphorus.

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	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.) Sep 1 - May 31	XXX	XXX	6.0	XXX	XXX	9.0	Daily when Discharging	Grab
pH (S.U.) Jun 1 - Aug 31	XXX	XXX	6.0	XXX	XXX	9.0	1/week	Grab
DO Sep 1 - May 31	XXX	XXX	5.0	XXX	XXX	XXX	Daily when Discharging	Grab
DO Jun 1 - Aug 31	XXX	XXX	5.0	XXX	XXX	XXX	1/week	Grab
CBOD5 Nov 1 - Apr 30	3.4	XXX	XXX	20.0	XXX	40	2/month	8-Hr Composite
CBOD5 May 1 - Oct 31	1.7	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
TSS	1.7	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
UV Transmittance (%) Sep 1 - May 31	XXX	XXX	Report	XXX	XXX	XXX	Daily when Discharging	Metered
UV Transmittance (%) Jun 1 - Aug 31	XXX	XXX	Report	XXX	XXX	XXX	1/week	Metered
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Nitrogen	1.7	XXX	XXX	10.0	XXX	20	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	1.5	XXX	XXX	9.0	XXX	18	2/month	8-Hr Composite

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	Instantaneous Minimum	Average Monthly	Maximum	Instant. Maximum		
Ammonia May 1 - Oct 31	0.5	XXX	XXX	3.0	XXX	6	2/month	8-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Total Phosphorus	0.3	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite

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 002, 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 Quarterly	Maximum	Instant. Maximum		
Flow (MGD)	Report Avg Qrtly	XXX	XXX	XXX	XXX	XXX	1/quarter	Estimate
pH (S.U.)	XXX	XXX	Report Inst Min	XXX	XXX	Report	1/quarter	Grab
DO	XXX	XXX	Report Inst Min	XXX	XXX	XXX	1/quarter	Grab
TRC	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
TSS	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
Ammonia	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/quarter	Grab