pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0103209**
Facility Type	**Non-Municipal**	APS ID	**1079958**
Major / Minor	**Minor**	Authorization ID	**1425232**

Applicant and Facility Information

Applicant Name	**Wattsburg Area School District**	Facility Name	**Wattsburg Area School District Campus**
Applicant Address	10782 Wattsburg Road	Facility Address	10782 Wattsburg Road
	Erie, PA 16509-6422		Erie, PA 16509-6422
Applicant Contact	Eric Schultz	Facility Contact	Eric Schultz
Applicant Phone	(814) 824-3400	Facility Phone	(814) 824-3400
Client ID	58287	Site ID	236741
Ch 94 Load Status	Not Overloaded	Municipality	Greene Township
Connection Status	No Limitations	County	Erie
Date Application Received	January 30, 2023	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: NPDES renewal of an existing sewage discharge.

Summary of Review

This is an existing discharge for a minor sewage treatment facility.

Act 14 – Proof of Notification was submitted and received.

Existing treatment consists of (WQM Permit No. 2596408): a grit chamber, an equalization/comminutor tank, an additional equalization tank, two aeration tanks in series, a clarifier, two digesters, a dosing tank, two upflow filters in parallel, a chlorine contact tank, a dechlorination tank, and outfall pipe.

There are no open violations in WMS for the subject Client ID (58287) as of 1/10/2023. *CWY 1/10/2024*

Annual monitoring for E. Coli, Total Nitrogen and Total Phosphorus has been added per Department SOP for new and reissued NPDES permits with design flows exceeding 2000 GPD.

Sludge is hauled offsite by Don Green Sanitation as-needed.

The EPA Waiver is in effect.

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*

Approve	Deny	Signatures	Date
X		Jordan A. Frey, E.I.T. Jordan A. Frey, E.I.T. / Project Manager	January 10, 2024
X		Chad W. Yurisic Chad W. Yurisic, P.E. / Environmental Engineer Manager	1/10/2024

Summary of Review
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)	.0296
Latitude	42º 3' 14.40"	Longitude	-79º 54' 29.37"
Quad Name	Hammett	Quad Code	42079A8
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary of East Branch LeBoeuf Creek (TSF)	Stream Code	53537
NHD Com ID	127349464	RMI	89.02 mi
Drainage Area	0.98 mi^2	Yield (cfs/mi^2)	0.0826
Q_{7-10} Flow (cfs)	0.081	Q_{7-10} Basis	French Ck near Union City gage
Elevation (ft)	1327	Slope (ft/ft)	0.0072
Watershed No.	16-A	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.6	Median value from stream surveys (same as previous eval.)
Temperature (°F)	25	Default temp for a TSF stream
Hardness (mg/L)	2.0	Default value
Other:	0.1	Default value

Nearest Downstream Public Water Supply Intake		Cambridge Springs Waterworks	
PWS Waters	French Creek	Flow at Intake (cfs)	49
PWS RMI	---	Distance from Outfall	+/- 20 mi

Changes Since Last Permit Issuance: None

Other Comments: None.

Treatment Facility Summary

Treatment Facility Name: Wattsburg Area School District Campus - STP

WQM Permit No.	Issuance Date
2571403	4/2/71
2592417	3/18/93
2596408-A1	1/22/15

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Extended Aeration	Chlorine With Dechlorination	

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0296	91	Not Overloaded	Holding Tank	Other WWTP

Changes Since Last Permit Issuance: None.

Other Comments: None.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0296
Latitude 42º 3' 14.51" **Longitude** -79º 54' 29.11"
Wastewater Description: Sewage Effluent

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
$CBOD_5$	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 (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments: None.

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
NH_3-N (5/1-10/31)	2.5	Average Monthly	WQM 7.0 v1.0b
NH_3-N (11/1-4/30)	7.5	Average Monthly	WQM 7.0 v1.0b
Dissolved Oxygen	5.0	Min	WQM 7.0 v1.0b
Total Residual Chlorine	0.21	Average Monthly	TRC Spreadsheet
Total Residual Chlorine	0.87	IMAX	TRC Spreadsheet

Comments: Ammonia-Nitrogen and Dissolved Oxygen limits are carried over from previous permit cycles and verified by WQM 7.0 modeling. The Instantaneous Maximum limit for Total Residual Chlorine has been changed to 0.87mg/l from 1.2 mg/l in accordance with modeling results from the Department's TRC Spreadsheet. A review of the facility's DMRs suggest the facility can meet the new IMAX TRC limit. *The calculated average monthly limits for DO, TRC, and Ammonia are less stringent than the previous permit, but the previous limits are attainable and will be retained. CWY 1/10/2024*

Best Professional Judgment (BPJ) Limitations

Comments: Total Phosphorus, Total Nitrogen, and E. Coli monitoring were added as BPJ limits per Department policy.

Anti-Backsliding

TRC modeling gave an average monthly limit of 0.26 mg/l but the previous limit of 0.21 mg/l will be retained in accordance with the Department's Anti-Backsliding policy.

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) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.21	XXX	0.87	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	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	Report Annl Avg	XXX	XXX	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/6 months	8-Hr Composite
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	7.5	XXX	15	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	2.5	XXX	5	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/6 months	8-Hr Composite

Compliance Sampling Location: Outfall 001, after disinfection and dechlorination.

Other Comments: None.

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.081	= Q stream (cfs)	0.5	= CV Daily
0.0296	= 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)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	0.583	1.3.2.iii	WLA cfc =	0.561
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	0.217	5.1d	LTA_cfc =	0.326

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.268	AFC
		INST MAX LIMIT (mg/l) =	0.875	

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)**

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
16A	53570	Trib 53570 of E Branch Le Boeuf Cr	**89.020**	1327.00	0.98	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.083	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.60	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Wattsburg Area	PA0103209	0.0180	0.0180	0.0180	0.000	20.00	6.90

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	7.54	0.00	0.00
NH3-N	25.00	0.10	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
16A	53570	Trib 53570 of E Branch Le Boeuf Cr	87.980	1291.00	1.74	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.60	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
16A	53570	Trib 53570 of E Branch Le Boeuf Cr

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
89.020	Wattsburg Area	6.4	18.17	6.4	18.17	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
89.020	Wattsburg Area	1.18	5.47	1.18	5.47	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
89.02	Wattsburg Area	25	25	5.47	5.47	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16A	53570	Trib 53570 of E Branch Le Boeuf Cr

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
89.020	0.018	23.725	7.294
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.914	0.356	13.808	0.062
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
7.87	0.939	1.47	0.932
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.637	25.000	Owens	6
Reach Travel Time (days)			
1.018			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.102	7.02	1.34	7.54
0.204	6.27	1.22	7.54
0.305	5.60	1.11	7.54
0.407	5.00	1.00	7.54
0.509	4.46	0.91	7.54
0.611	3.98	0.83	7.54
0.712	3.56	0.76	7.54
0.814	3.18	0.69	7.54
0.916	2.84	0.63	7.54
1.018	2.53	0.57	7.54

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
89.020	Wattsburg Area	PA0103209	0.018	CBOD5	25		
				NH3-N	5.47	10.94	
				Dissolved Oxygen			4

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
16A	53570	Trib 53570 of E Branch Le Boeuf Cr

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
89.020	0.08	0.00	0.08	.0278	0.00656	.356	4.91	13.81	0.06	1.018	23.72	7.29
Q1-10 Flow												
89.020	0.05	0.00	0.05	.0278	0.00656	NA	NA	NA	0.05	1.212	23.26	7.22
Q30-10 Flow												
89.020	0.11	0.00	0.11	.0278	0.00656	NA	NA	NA	0.07	0.891	23.99	7.34