pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0088188**
Facility Type	**Municipal**	APS ID	**41995**
Major / Minor	**Minor**	Authorization ID	**1410176**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Gratz Borough Municipal Authority**	Facility Name	**Gratz Borough STP**
Applicant Address	125 N Center Street	Facility Address	Route 1014 N
	Gratz, PA 17030		Gratz, PA 17030
Applicant Contact	Brian Novinger	Facility Contact	Brian Strait
Applicant Phone	(717) 365-4115	Facility Phone	(717) 365-4115
Client ID	33424	Site ID	520953
Ch 94 Load Status	Not Overloaded	Municipality	Gratz Borough
Connection Status	No Exceptions Allowed	County	Dauphin
Date Application Received	September 14, 2022	EPA Waived?	Yes
Date Application Accepted	September 20, 2022	If No, Reason	

Purpose of Application: Permit renewal for discharge of treated sewage

Summary of Review

1.0 General Discussion

This fact sheet supports the renewal of an existing NPDES permit for discharge of treated domestic wastewater from Gratz Borough Wastewater Treatment Plant located in Gratz Borough, Dauphin County. Gratz Borough Municipal Authority (Authority) owns, operates, and maintains the wastewater treatment plant which serves Gratz Borough. The facility is a continuous fill sequential batch reactor (SBR) secondary treatment plant. The sewer collection system is not combined and there are no bypasses or overflows authorized in the collection system. The facility receives influent via gravity with the aid of two collection system pump stations. Influent enters wet well of influent pump station where it is combined with internal plant flows such as filtrate from sludge dewatering and decant from digester and directed with aid of three influent pumps to SBR tanks for treatment. Treated effluent is disinfected with ultraviolet light prior to discharge. Sludge is wasted to a common metal sludge digester tank and dewatered periodically prior to final disposal. The treatment plant has a hydraulic design capacity of 0.1200 MGD and an annual average design capacity of 0.12 MGD. The organic design capacity of the facility is 300 lbs/day-BOD5. The facility discharge to Unnamed tributary to Wiconisco Creek, which is classified as Warm Water Fishes (WWF) and Migratory Fishes (MF). The existing NPDES permit was issued on December 28, 2017 with effective date January 1, 2018 and an expiration date of December 31, 2023. The applicant submitted an administratively complete NPDES renewal application to the Department and is currently operating under the terms and conditions in the existing permit pending Department action on the renewal application. A topographic map showing the discharge location is presented in attachment A.

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P.E. / Environmental Engineer	January 9, 2024
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	January 26, 2024
X		*Maria D. Bebenek* Maria D. Bebenek, P.E./ Program Manager	January 26, 2024

Summary of Review

1.1 Sludge use and disposal description and location(s):

Digested sludge is dewatered prior to ultimate disposal at Keystone Landfill by a license hauler.

1.2 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.

1.3 Changes to the existing Permit

Quarterly E. Coli monitoring has been added.

1.4.0 Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.12
Latitude	40º 36' 05"	Longitude	-76º 44' 00"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary of Wiconisco Creek (WWF, MF)	Stream Code	16988
NHD Com ID	54972099	RMI	2.9
Drainage Area	3.76	Yield (cfs/mi^2)	USGS Gage Station
Q_{7-10} Flow (cfs)	0.15	Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	6-C	Chapter 93 Class.	WWF, MF
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	Veolia Water PA		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	<39

Changes Since Last Permit Issuance: None

1.4.1 Public Water Supply Intake

The closest water supply intake located downstream from the discharge is Veolia Water PA in Susquehanna Twp., Dauphin County. The distance downstream from the discharge to the intake is approximately 39 miles. No impact is expected on the intake as a result of this discharge.

2.0 Treatment Facility Summary

Treatment Facility Name: Gratz STP

WQM Permit No.	Issuance Date
2209401	9/22/2010

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Sequencing Batch Reactor	Ultraviolet	0.12

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.12	300	Not Overloaded		Other WWTP

Changes Since Last Permit Issuance: None

2.1 Treatment Plant

The treatment plant consists of influent pump station, comminutor, two Wagner Fluids SBR tanks that operates on a continuous fill basis, a UV unit for disinfection, a post aeration manhole, aerobic digester, and a dewatering unit. Polymer is added to aid with sludge dewatering.

2.2 Existing Limitation and Monitoring Requirements

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	25	40	XXX	25	40	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	30	45	XXX	30	45	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/months	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1months	Calculation
Ammonia Nov 1 - Apr 30	10.5	XXX	XXX	10.5	XXX	21	1/week	24-Hr Composite
Ammonia	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1months	24-Hr Composite
Ammonia May 1 - Oct 31	3.5	XXX	XXX	3.5	XXX	7	1/week	24-Hr Composite
TKN	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/months	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/months	24-Hr Composite

3.0 Compliance History

3.1 DMR Data for Outfall 001 (from December 1, 2022 to November 30, 2023)

Parameter	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23	JAN-23	DEC-22
Flow (MGD) Average Monthly	0.035	0.038	0.045	0.37	0.046	0.033	0.047	0.33	0.39	0.033	0.048	0.058
Flow (MGD) Daily Maximum	0.055	0.06	0.093	0.49	0.089	0.058	0.154	0.103	0.88	0.047	0.089	0.13
pH (S.U.) Minimum	6.98	7.12	7.24	7.30	7.15	7.19	6.94	6.97	6.79	6.9	6.62	6.91
pH (S.U.) Maximum	7.84	7.8	7.96	7.84	7.70	7.75	7.56	7.63	7.5	7.52	7.56	7.46
DO (mg/L) Minimum	6.15	5.69	6.06	5.48	6.05	6.68	7.13	6.26	6.64	7.47	7.74	8.37
CBOD5 (lbs/day) Average Monthly	< 0.9	< 1.0	< 0.8	< 1.0	< 0.7	0.6	< 0.9	0.8	0.8	0.7	< 0.9	< 1.0
CBOD5 (lbs/day) Weekly Average	1.0	3.0	1.0	3.0	< 1.0	0.7	< 2.0	0.9	0.9	0.9	< 1.0	2.0
CBOD5 (mg/L) Average Monthly	< 3.0	< 4.6	< 2.1	< 3.7	< 2.0	2.2	< 2.8	3.1	2.7	2.5	< 2.1	< 2.4
CBOD5 (mg/L) Weekly Average	4.9	9.5	2.1	10.0	< 2.0	2.4	5.0	3.9	3.4	3.3	2.5	3.8
BOD5 (lbs/day) Raw Sewage Influent Ave. Monthly	50.0	50.0	43.0	48.0	60.0	84.0	154.0	80.0	54.0	52.0	50.0	89.0
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	64.0	58.0	68.0	76.0	65.0	148.0	191.0	118.0	65.0	61.0	62.0	150.0
BOD5 (mg/L) Raw Sewage Influent Ave. Monthly	160.0	158.0	111.0	150.0	177.0	309.0	476.0	340.0	191.0	195.0	126.0	236.0
TSS (lbs/day) Average Monthly	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0
TSS (lbs/day) Raw Sewage Influent Ave. Monthly	27.0	21.0	19.0	25.0	30.0	39.0	51.0	45.0	16.0	22.0	23.0	67.0
TSS (lbs/day) Raw Sewage Influent Daily Maximum	38.0	32.0	24.0	44.0	41.0	68.0	92.0	66.0	20.0	25.0	40.0	106.0
TSS (lbs/day) Weekly Average	< 2.0	< 1.0	< 2.0	< 2.0	< 2.0	< 1.0	< 3.0	< 1.0	< 2.0	1.0	< 3.0	< 2.0

TSS (mg/L) Average Monthly	< 4.0	4.0	< 4.0	< 4.0	< 4.1	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TSS (mg/L) Raw Sewage Influent Ave. Monthly	87.0	68.0	48.0	78.0	86.0	144.0	139.0	177.0	57.0	81.0	51.0	177.0
TSS (mg/L) Weekly Average	< 4.0	< 4.0	< 4.0	< 4.0	4.5	< 4.0	< 4.0	< 4.0	< 4.0	4.0	4.0	< 4.0
Fecal Coliform (No./100 ml) Geometric Mean	< 6.0	< 1.0	< 2.0	< 3.0	< 1.0	< 3.0	< 1.0	< 1.0	< 2.0	6.0	< 3.0	< 1.0
Fecal Coliform (No./100 ml) Instant. Maximum	6400.0	< 1.0	30.0	327.0	< 1.0	43.0	2.0	1.0	13.0	338.0	56.0	1.0
UV Transmittance (%) Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nitrate-Nitrite (mg/L) Average Monthly	12.4	8.13	7.29	15.4	6.96	12.1	15.4	23.3	0.10	21.6	0.10	44.5
Total Nitrogen (mg/L) Average Monthly	14.3	9.75	8.73	16.81	8.56	13.84	16.1	24.63	32.96	22.59	28.1	45.2
Ammonia (lbs/day) Average Monthly	< 0.1	0.2	0.20	0.4	< 0.06	< 0.08	0.1	< 0.08	< 0.03	< 0.03	1.0	< 0.04
Ammonia (mg/L) Average Monthly	< 0.44	0.56	0.51	1.41	< 0.2	< 0.28	0.028	< 0.34	< 0.1	< 0.1	0.1	< 0.1
TKN (mg/L) Average Monthly	1.89	1.62	1.44	1.41	1.59	1.74	0.7	1.33	1.56	0.99	0.7	< 0.7
Total Phosphorus (mg/L) Ave. Monthly	6.97	7.41	7.57	11.7	3.85	5.25	1.72	6.37	6.12	3.85	4.01	5.63

3.2 Summary of Discharge Monitoring Reports (DMRs):

DMRs reviewed for the facility for the last 12 months of operation, presented on the table above in section 3.1 indicate permit limits have been met consistently. No effluent violations were noted on DMRs for the period reviewed.

3.3 Summary of Inspections:

The facility has been inspected a couple times during last permit cycle. Effluent violation for PH was noted during plant inspection on 12/06/2018. The facility had had ammonia nitrogen violation in the past, but the violations have been addressed.

4.0 Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .12
Latitude 40º 36' 5.00" **Longitude** -76º 44' 0.00"
Wastewater Description: Sewage Effluent

4.1 Basis for Effluent Limitations

In general, the Clean Water Act(CWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

4.2 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: TRC is not applicable to this facility.

4.3 Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34

4.3.1 WQM 7.0 Stream Model

WQM 7.0 is a water quality model DEP utilizes to establish appropriate effluent limits for $CBOD_5$, NH_3-N and DO in permits. The model simulates mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria and also simulates mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria and recommends effluent limits.

4.4 Water Quality-Based Limitations

4.4.1 Receiving Stream

The receiving stream is Unnamed tributary to Wiconisco Creek. According to 25 PA § 93.9o, UNT Wiconisco Creek is protected for Warm Water Fishes (WWF) and Migratory Fishes (MF). It is located in Drainage List m and State Watershed 6-C. It has been assigned stream code 16988. According to the Department's Pennsylvania Integrated Water Quality Monitoring and Assessment Report, this stream is attaining its uses.

4.4.2 Streamflow:

Streamflows for the water quality analysis were determined by correlating with the yield of USGS gauging station No. 0155500 on Mahantango. The Q_{7-10} and drainage area at the gage are 6.38ft^3/s and 164 mi^2 respectively. The resulting yields are as follows:

Q_{7-10} = 6.38 cfs /164 sq. mi = 0.04cfs/sq.mi
Q_{30-10} /Q_{7-10} = 1.47
Q_{1-10} /Q_{7-10} = 0.74

The drainage area at the point of discharge taken from previous protection report = 3.76 sq. mi.
The design flow is calculated as: Q_{7-10} = 0.04cfs x 3.76 sq. mi = 0.15cfs

NH_3N calculations were based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the instream NH_3N criteria used in the WQM 7.0 Stream model:

- Discharge pH = 7.2 (DMR Median Jul - Sept)
- Discharge Temperature = 25 ^{o} C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 20 ^{o}C (Default)
- Background NH_3-N = 0.0 (default

4.4.3 $CBOD_5$:

The attached WQM 7.0 Model presented in attachment B indicates that for a discharge of 0.12 MGD from Gratz Borough STP, an average monthly limit (AML) of 25mg/l $CBOD_5$ is required to protect the water quality of the stream. This limit is consistent with the existing permit and the STP is consistently complying with the limitation. Therefore, a limit of 25mg/l AML, 40mg/l average weekly limit (AWL) and 50 mg/l IMAX are again recommended for the current permit renewal. Mass limits are calculated as follows:

Mass based AML (lb/day) = 25 (mg/L) × 0.120(mgd) × 8.34 = 25

Mass based AWL (lb/day) = 40(mg/L) × 0.120(mgd) × 8.34 = 40

4.4.4 NH_3-N

The attached WQM 7.0 stream model (Attachment B) indicates that a summer average monthly limit of 3.5mg/l NH_3 is necessary to protect the aquatic life from toxicity effects. This limit is consistent with the current limit and the facility is complying with the limitation. Winter limit is 3 times the summer limit.

Mass Limits are calculated as follows:

Mass based AML (lb/day) = 3.5 (mg/L) × 0.120(mgd) × 8.34 = 3.5

4.4.5 Dissolved Oxygen

The existing permit contains a limit of 5 mg/l for Dissolved Oxygen (DO). DEP's Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001, 10/97) suggests that either the adopted minimum stream D.O. criteria for the receiving stream or the effluent level determined through water quality modeling be used for the limit. Since the WQM 7.0 model was run using a minimum D.O. of 5.0 mg/l, this limit will be continued in the renewed permit with a daily monitoring requirement.

4 .4. 6 Total Suspended Solids (TSS)

There is no water quality criteria for TSS. A limit of 30 mg/l AML will be required based on the minimum level of effluent quality attainable by secondary treatment as defined in 40 CFR 133.102b(1) and 25 PA § 92a.47(a)(1) and an AWL of 45mg/l per 40CFR 133.102(b)(2) and 25 PA § 92a.47(a)(2)

Mass based AML (lb/day) = 30 (mg/L) × 0.120(mgd) × 8.34 = 30

Mass based AWL (lb/day) = 45(mg/L) × 0.120(mgd) × 8.34 = 45

4.4.7 Phosphorus

Currently there is no watershed-wide requirement for phosphorus limitation in the Wiconisco Basin, therefore no phosphorus limitation is required for this discharge. Monitoring of Phosphorus is required to collect data to refine Chesapeake Bay nutrients modelling in the future.

4.4.8 Toxics

A reasonable potential (RP) analysis was done for pollutants in the discharge. The discharge consists entirely of domestic wastewater with no pollutants of concern that needs further analysis.

4.4.9 Fecal Coliform and E. Coli

The existing Fecal Coliform limit is consistent with the technology limits recommended in 92a.47(a)(4) and (a)(5) and will remain in the permit. In March of 2021, EPA approved DEP's Triennial Review of Water Quality Standards, which included a new swimming season criterion for E. coli. As a result, DEP is including monitoring requirements for E. Coli in new and renewed sewage permits above 2000gpd. Monitoring frequency is based on annual average flow as follows: 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD and 1/year for design flows of 0.002 and < 0.05 MGD. Your discharge of 0.12MGD requires 1/quarter monitoring as included in the permit.

4.4.10 Total Residual Chlorine

The discharge does not have any reasonable potential to cause or contribute to a water quality standards violation for total residual chlorine since the permittee utilizes UV instead of chlorine for wastewater disinfection. Therefore, the proposed permit does not contain effluent limits for total residual chlorine. The permittee may use chlorine-based chemicals for cleaning and is required to optimize chlorine usage to prevent negative impacts on receiving stream. Daily UV transmittance monitoring (%) is required in the permit to ensure efficiency of the UV unit.

4.4.11 Chesapeake Bay Strategy:

The Department formulated a strategy in April 2007, to comply with the EPA and Chesapeake Bay requirements to reduce point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP) to the Bay. In the Strategy, sewage dischargers have been prioritized by DEP based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers received annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. Phase 4 (0.2 -0.4mgd) and Phase 5(below 0.2mdg) are required to monitor and report TN and TP during permit renewal and any facility in Phases 4 and 5 that undergoes expansion is subjected to cap load right away. EPA published Chesapeake Bay TMDL in December of 2010. To address the TMDL, Pennsylvania developed Chesapeake Watershed Implementation Plan (WIP) Phase 1, Phase 2 and currently Phase 3 WIP and a supplement to the WIPs to be implemented with the original Chesapeake Bay Strategy.

As outlined in the current Phase 3 WIP and the current supplement to the WIP, re-issuing permits for significant dischargers would follow the same phased approach formulated in the original Bay strategy whilst Phase 4 and Phase 5 will be required to monitor and report TN and TP during permit renewals. This facility is classified as a phase 5, and has been monitoring Total Phosphorus, Nitrate-Nitrite as N, Total Kjeldahl Nitrogen and Total Nitrogen monthly, and will continue to monitor and report the daily maximum concentration during the next permit cycle but at a reduced frequency of 1/6month since a lot of data has been collected.

4.4.12 Influent BOD and TSS Monitoring

The permit will include influent BOD5 and TSS monitoring at the same frequency as effluent to comply with Chapter 94.12 requirement and assess percent removal requirements.

4.4.13 Industrial Users

This Wastewater Treatment Plant does not receive wastewater from any significant industrial users.

4.4.14 Pretreatment Requirements

The design annual average flow of the treatment plant is 0.12 MGD and the facility receives no flow from significant Industrial users. EPA does not require development of pretreatment program for facilities with design flow less than 5MGD. However, the permit contains standard conditions requiring the permittee to monitor and control industrial users if applicable.

5.0 Other Requirements

5.1 The permit contains the following special conditions:

The permit contains the following special conditions:

Stormwater Prohibition, Approval Contingencies, Proper Waste/solids Management, Restriction on receipt of hauled in waste under certain conditions, SBR discharge condition and Chlorine minimization requirement

5.2 Stormwater

There is no stormwater outfall associated with this facility.

5.3 Anti-backsliding

Not applicable to this permit

5.4 Antidegradation (93.4):

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High-Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

5.5 Class A Wild Trout Fisheries:

No Class A Wild Trout Fisheries are impacted by this discharge.

5.6 303d listed stream

The discharge is not located on a 303d listed stream segment.

5.7 Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs).

5.8 Effluent Monitoring Frequency

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

6.0 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	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	25	40	XXX	25	40	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	30	45	XXX	30	45	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	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/quarter	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	Calculation

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

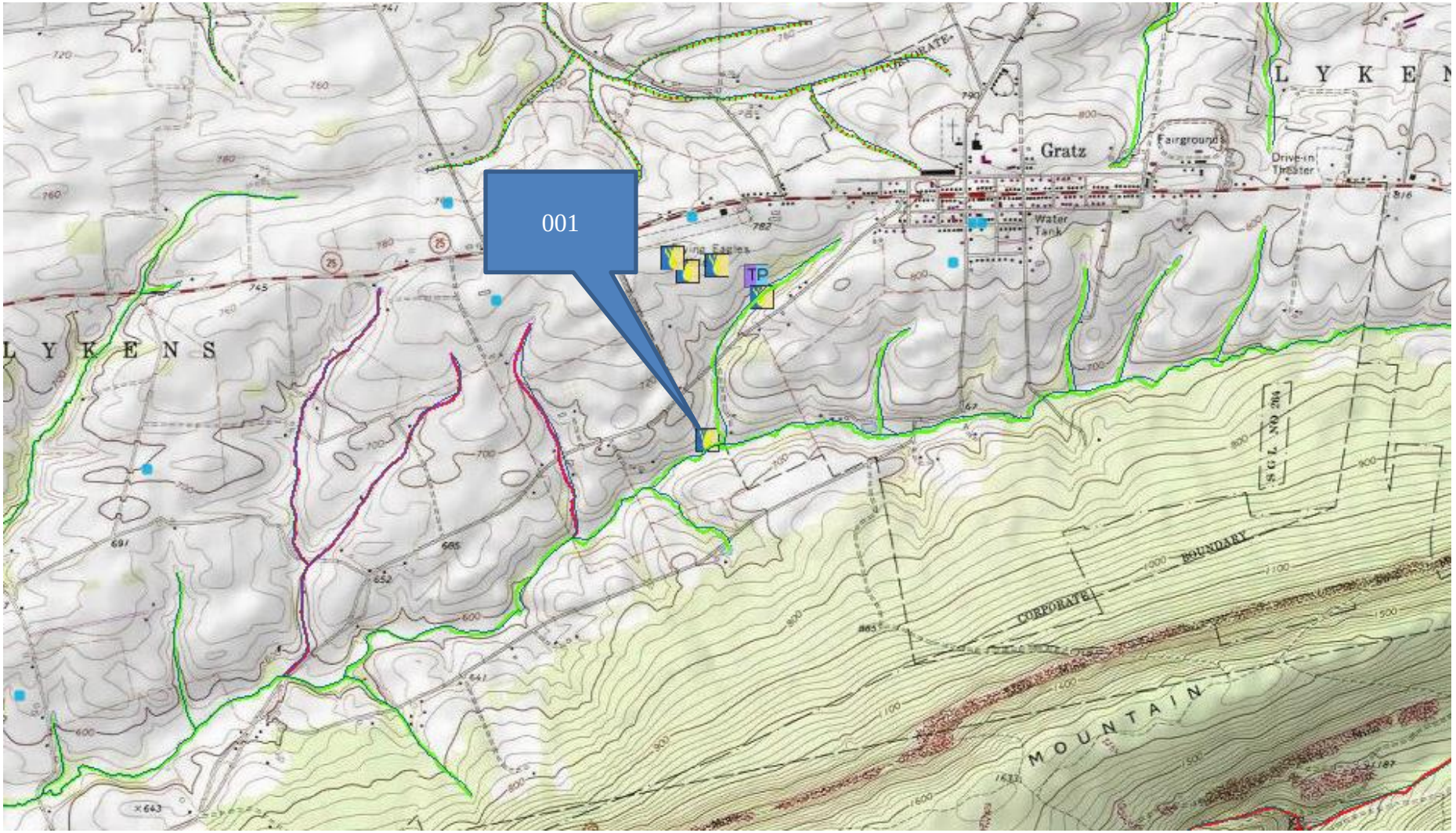
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia Nov 1 - Apr 30	10.5	XXX	XXX	10.5	XXX	21	1/week	24-Hr Composite
Ammonia	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite
Ammonia May 1 - Oct 31	3.5	XXX	XXX	3.5	XXX	7	1/week	24-Hr Composite
TKN	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	24-Hr Composite

Compliance Sampling Location: At Outfall 001

7.0 Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **B**)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☒	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☒	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☒	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: Establishing effluent limitation for individual sewage permit
☒	Other: WIP 3 and Supplement

8. Attachments

A. Topographical Map



B. WQM Model Results

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
06C	16988	Trib 16988 to Wiconisco Creek

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)
2.900	Gratz Boro	PA0088188	0.120	CBOD5	25		
				NH3-N	3.52	7.04	
				Dissolved Oxygen			5

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
06C	16988	Trib 16988 to Wiconisco Creek	**2.900**	550.00	3.79	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	0.039	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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
Gratz Boro	PA0088188	0.1200	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	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
06C	16988	Trib 16988 to Wiconisco Creek	**0.010**	545.00	3.90	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	0.039	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
06C	16988	Trib 16988 to Wiconisco Creek

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												
2.900	0.15	0.00	0.15	.1856	0.00033	.47	10.49	22.32	0.07	2.615	22.79	7.00
Q1-10 Flow												
2.900	0.11	0.00	0.11	.1856	0.00033	NA	NA	NA	0.06	2.801	23.15	7.00
Q30-10 Flow												
2.900	0.22	0.00	0.22	.1856	0.00033	NA	NA	NA	0.08	2.353	22.31	7.00

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	0.74	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.47	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
06C	16988	Trib 16988 to Wiconisco Creek

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
2.900	Gratz Boro	12.91	20.5	12.91	20.5	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
2.900	Gratz Boro	1.63	3.52	1.63	3.52	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)		
2.90	Gratz Boro	25	25	3.52	3.52	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
06C	16988	Trib 16988 to Wiconisco Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.900	0.120	22.787	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
10.493	0.470	22.324	0.068
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
14.82	0.674	1.96	0.867
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.435	15.399	Owens	5
Reach Travel Time (days)			
2.615			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.262	12.13	1.57	7.32
0.523	9.93	1.25	7.59
0.785	8.13	0.99	7.80
1.046	6.65	0.79	7.83
1.308	5.44	0.63	7.83
1.569	4.46	0.50	7.83
1.831	3.65	0.40	7.83
2.092	2.99	0.32	7.83
2.354	2.44	0.26	7.83
2.615	2.00	0.20	7.83