pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0261050**
Facility Type	**Non-Municipal**	APS ID	**631332**
Major / Minor	**Minor**	Authorization ID	**980735**

Applicant and Facility Information

Applicant Name	**Quail Creek Homeowners Association**	Facility Name	**Quail Creek Homeowners Association STP**
Applicant Address	602 Quail Creek	Facility Address	Lot 15, Quail Creek
	Manheim, PA 17545		Manheim, PA 17545
Applicant Contact	Nick Perrefort	Facility Contact	Nick Perrefort
Applicant Phone	(717) 629-0890	Facility Phone	(717) 629-0890
Client ID	260251	Site ID	698312
Ch 94 Load Status	Not Overloaded	Municipality	Rapho Township
Connection Status	No Limitations	County	Lancaster
Date Application Received	May 22, 2013	EPA Waived?	No
Date Application Accepted	June 11, 2013	If No, Reason	Chiques Creek Alternate TMDL

Purpose of Application: NPDES Renewal.

Summary of Review

Quail Creek Homeowners Association has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The permit was issued on July 21, 2008 and became effective on July 1, 2008. The permit authorized discharge of treated sewage from the existing wastewater treatment plant (WWTP) located in Rapho Township, Lancaster County into an UNT to Chiques Creek. The existing permit expiration date was June 30, 2013, and the permit has been administratively extended since that time.

Quail Creek Homeowners Association is a 29-lot residential subdivision which is served by a small extended aeration plant. The Water Quality Management (WQM) permit was issued on July 21, 2008 for construction/operation of the 0.0076 million gallons per day (mgd) WWTP (#3607403). The WWTP uses the Modified Ludzack-Ettinger (MLE) process for nutrient control. Before the facility was constructed, raw sewage generated from this property was pumped out by a licensed hauler (i.e. Kauffman's Septic Service) and disposed at the nearest municipal treatment plant (i.e., Manheim WWTP, Derry Township WWTP, Springettsbury Township WWTP, or Lancaster Area Sewer Authority WWTP). At the time, only approximately 8 EDUs were generating wastewater, which was not sufficient to provide a stable biological colony to allow conditions for effective treatment. By the end of April 2013, 10 homes had been built and the operator was able to initiate a start-up of the plant on May 1, 2013.

Changes to permit: Fecal coliform instantaneous maximum (IMAX) limits were added. A more stringent ammonia-nitrogen wintertime limit and total residual chlorine (TRC) limit were added. Monthly Net Total Nitrogen and Net Total Phosphorus reporting requirements were removed from the permit.

Approve	Deny	Signatures	Date
		Benjamin R. Lockwood / Environmental Engineering Specialist	September 18, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E. / Program Manager	

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.

Supplemental information for this report is located in an attachment below:

Quail Creek Homeowners Associ

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0076
Latitude	40º 13' 13"	Longitude	76º 27' 1"
Quad Name	Manheim	Quad Code	1734
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Chiques Creek (WWF)	Stream Code	08015
NHD Com ID	57461965	RMI	0.95
Drainage Area	0.13 mi^2	Yield (cfs/mi^2)	0.12
Q_{7-10} Flow (cfs)	0.0156	Q_{7-10} Basis	USGS Gage # 01576500
Elevation (ft)	527	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens, Siltation		
Source(s) of Impairment	Source Unknown, Agriculture		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Columbia Water Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI	27.5	Distance from Outfall (mi)	30

Changes Since Last Permit Issuance: A drainage area of 0.13 mi^2 and a Q_{7-10} flow of 0.0156 cubic feet per second (cfs) were determined by establishing a correlation to the yield of USGS Gage Station #01576500 on the Conestoga River. The Q_{7-10} and drainage area at the gage are 38.6 cfs and 324 mi^2, respectively. These values are taken from the USGS document "Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania". The Q_{7-10} runoff rate at the gage station was calculated as follows:

Yield = (38.6 cfs)/ 324 mi^2 = 0.12 cfs/mi^2

The drainage area at the discharge point, taken from USGS PA StreamStats = 0.13 mi^2

The Q_{7-10} at the discharge point = 0.13 mi^2 x 0.12 cfs/mi^2 = 0.0156 cfs

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Extended Aeration With Solids Removal	Hypochlorite	0.0076
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.0076	20	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: The treatment process is as follows: Equalization, Anoxic Tank, Aeration Tank, Clarification, Tertiary Filtration, Chlorination, De-Chlorination, Post Aeration, Sludge Holding Tank, Outfall 001 to UNT 08015 to Chiques Creek

Other Comments: None

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet
Summary of Inspections:	5/14/2013: A routine inspection was conducted by Bob Haines, DEP Water Quality Specialist. Field tests were conducted for pH, D.O., and TRC. All results were within permitted limits. The effluent was clear. Most treatment units were operational at the time of inspection. The plant went online 5/2/13. The mixed liquor in the aeration tank was thin, but the operator reported that solids were still building in the WWTP. Settling was ok. The clarifier weir needed cleaned out. There were no de-chlor tabs in the de-chlorinator. The operator stated he was waiting on the fecal coliform results to see if de-chlor would be needed. The outfall area was inspected and looked good. 1/5/2015: A routine inspection was conducted by Bob Haines. Field tests were conducted for pH, D.O., and TRC; all results were within permitted limits. The outfall area was checked and appeared clear. Overall treatment appeared to be good based on field test results and visual observation. The mixed liquor concentration in the aeration tank appeared thin. The bar screen was under water. The clarifier weir and channel were clear, with good settling. The de-chlor tablet dispenser is hard to access; it is about 8 feet down in the post aeration tank. It was recommended that the tablet dispenser be used as designed, for ease of use. A review of records showed that several parameters were not being reported, and incorrect supplemental forms were being used. 10/14/2015: An inspection was conducted by Andrew Hall, DEP Water Quality Specialist. The bar screen was cleaned, and solids were stored in a bucket. The EQ tank looked fine. The anoxic tank mixer appeared to not be working, and there was a light buildup of rags. The aeration tank had good mixing. The clarifier was hazy, with visible solids in the water. There was solids accumulation in the effluent trough. The skimmer was completely submerged, and there was uneven flow over the weirs. At the time of inspection a backwash was occurring in the tertiary filters. It was short and appeared to be ineffective. The effluent looked clear, with light solids present in a sample pulled at the effluent weir. An access path was not available to the outfall; it was noted that this is a permitted treatment unit, and access must be made available upon inspection. The operator, Barry Bracken, was interviewed regarding samples taken between January 2014 and May 2015. He admitted to collecting samples that were not representative, and taking grab samples when composites were required.

Other Comments: There are currently no open violations associated with the permittee or the facility.

Compliance History

DMR Data for Outfall 001 (from August 1, 2018 to July 31, 2019)

Parameter	AUG-18	SEP-18	OCT-18	NOV-18	DEC-18	JAN-19	FEB-19	MAR-19	APR-19	MAY-19	JUN-19	JUL-19
Flow (MGD) Average Monthly	0.00357	0.00319	0.00215	0.00245	0.00246	0.00218	0.00184	0.0027	0.00228	0.00355	0.0033	0.00403
Flow (MGD) Daily Maximum	0.00797	0.00637	0.00389	0.00493	0.00578	0.00469	0.00336	0.00638	0.00375	0.00723	0.00682	0.00976
pH (S.U.) Minimum	7.66	7.58	7.69	7.72	7.71	7.61	7.56	7.49	7.65	7.7	7.35	7.44
pH (S.U.) Maximum	8.59	8.39	8.21	8.39	8.14	8.17	8.06	8.15	8.5	8.68	8.46	8.29
DO (mg/L) Minimum	7.05	7.09	6.79	8.5	8.83	9.4	8.87	7.0	5.87	5.25	6.62	6.11
TRC (mg/L) Average Monthly	< 0.03	< 0.03	< 0.04	< 0.03	< 0.03	< 0.04	< 0.05	< 0.03	< 0.04	< 0.04	< 0.03	< 0.04
TRC (mg/L) Instantaneous Maximum	0.05	0.07	0.07	0.05	0.09	0.08	0.10	0.08	0.14	0.09	0.09	0.18
CBOD5 (mg/L) Average Monthly	2.9	2.4	< 2.4	2.6	< 2.0	< 4.2	4.0	< 2.4	< 2.8	2.3	< 2.4	< 2.0
TSS (mg/L) Average Monthly	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.2	< 4.0	< 4.0
Fecal Coliform (No./100 ml) Geometric Mean	4	8	< 1	3	< 1	< 55	< 1	< 1	< 1	< 6	3	14
Nitrate-Nitrite (mg/L) Average Monthly	10.79	16.3	15.6	12.5	12.01	3.59	12.2	7.25	8.06	9.26	20.4	14.5
Nitrate-Nitrite (lbs) Total Monthly	13	11	10	8	5	2	4	3	5	9	22	13
Total Nitrogen (mg/L) Average Monthly	11.7	< 17	16.6	14.1	< 12.51	4.7	14.3	8.96	9.56	10.76	< 21.2	15.2
Total Nitrogen (lbs) Effluent Net Total Monthly	14	< 12	11	10	< 6	2	5	4	5	10	< 23	14
Total Nitrogen (lbs) Total Monthly	14	< 12	11	10	< 6	2	5	4	5	10	< 23	14
Total Nitrogen (lbs) Effluent Net Total Annual		< 0.000										
Total Nitrogen (lbs) Total Annual		< 77										

Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.93	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (lbs) Total Monthly	< 0.1	< 0.07	< 0.06	< 0.7	< 0.05	< 0.05	< 0.03	< 0.04	< 0.05	< 0.09	< 0.1	< 0.1
Ammonia (lbs) Total Annual		< 1										
TKN (mg/L) Average Monthly	0.88	< 0.69	1.06	1.56	< 0.5	1.06	2.15	1.7	1.49	1.47	< 0.81	0.75
TKN (lbs) Total Monthly	1	< 0.5	0.7	1	< 0.3	0.5	0.7	0.8	0.7	1	< 0.9	0.7
Total Phosphorus (mg/L) Average Monthly	0.94	1.02	0.71	0.88	0.82	0.81	1.15	1.05	1.18	1.36	1.34	0.99
Total Phosphorus (lbs) Effluent Net Total Monthly	1	0.7	0.5	0.6	0.4	0.4	0.4	0.5	0.6	1	1	1
Total Phosphorus (lbs) Total Monthly	1	0.7	0.5	0.6	0.4	0.4	0.4	0.5	0.6	1	1	1
Total Phosphorus (lbs) Effluent Net Total Annual		0.000										
Total Phosphorus (lbs) Total Annual		5										

Compliance History

Effluent Violations for Outfall 001, from: September 1, 2018 To: July 31, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Total Nitrogen	09/30/18	Total Annual	< 77.000	lbs	0.001	lbs
Total Phosphorus	09/30/18	Total Annual	5.000	lbs	0.001	lbs

Existing Effluent Limitations and Monitoring Requirements

The table below summarizes the effluent limits and monitoring requirements implemented in the existing NPDES permit.

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.28	XXX	0.92	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
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	27	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4.0	2/month	8-Hr Composite
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	XXX	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	2/month	Grab

Compliance Sampling Location: At discharge from facility

Outfall 001 Existing Limits (cont.)

Parameter	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs)		Concentration (mg/L)			Minimum Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia-N	Report	Report	XXX	Report	XXX	2/month	8-hour comp
Kjeldahl-N	Report	XXX	XXX	Report	XXX	2/month	8-hour comp
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	2/month	8-hour comp
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculate
Total Phosphorus	Report	Report	XXX	Report	XXX	2/month	8-hour comp
Net Total Nitrogen	Report	0	XXX	XXX	XXX	1/month	Calculate
Net Total Phosphorus	Report	0	XXX	XXX	XXX	1/month	Calculate

Compliance Sampling Location: At discharge from facility

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0076
Latitude 40º 13' 13" **Longitude** 76º 27' 1"
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)

Water Quality-Based Limitations

Pursuant to 40 CFR § 122.44(d)(1)(i), more stringent requirements should be considered when pollutants are discharged at the levels which have the reasonable potential to cause or contribute to excursions above water quality standards.

WQM 7.0 ver. 1.0b is a water quality model designed to assist DEP in determining appropriate water quality based effluent limits (WQBELs) for carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia (NH_3-N), and dissolved oxygen (D.O.). The model simulates two basic processes: In the NH_3-N module, the model simulates the 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. In the D.O. module, the model simulates the mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3-N and compares calculated instream D.O. concentrations to D.O. water quality criteria. The model then determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions. DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges.

The model was utilized for this permit application. The flow data used to run the model was acquired from USGS PA StreamStats, and USGS Gage # 01576500 on the Conestoga River, and is included in an attachment. Stream pH and temperature inputs for this model run were based on data acquired from the National Water Quality Monitoring Council website. Data was analyzed from the Water Quality Network (WQN) Station ID 206 on Chiques Creek from October 1998 to March 2019 for pH, and from October 1998 to October 2017 for temperature. DEP's Standard Operating Procedure (SOP) No. BPNPSM-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) recommends using the 90th percentile of long-term data for background and discharge characteristics when using WQM 7.0. A 90th percentile analysis was performed on the data and resulted in a Stream pH of 8.3 and a Stream Temperature of 21°C. The model output indicated a $CBOD_5$ average monthly limit of 25 mg/l, an NH_3-N average monthly limit of 3.56 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. The $CBOD_5$ limit is the same as the existing limit, and will remain in the permit. The NH_3-N limit is less stringent than the existing limit of 3.0 mg/l, so the existing limit will remain in the permit. The existing permit includes a wintertime NH_3-N limit of 9.0 mg/l. Instantaneous maximum (IMAX) limits are determined using a multiplier of 2 for conventional pollutants, which would result in a wintertime NH_3-N IMAX limit of 18 mg/l. This limit is more stringent than the existing IMAX permit limit of 27 mg/l, and will be included in the permit.

There are no industrial/commercial users contributing industrial wastewater to the system and Quail Creek does not currently have an EPA-approved pretreatment program. Accordingly, evaluating reasonable potential of toxic pollutants is not necessary as effluent levels of toxic pollutants are expected to be insignificant.

Best Professional Judgement (BPJ) Limitations

Total Residual Chlorine

The attached computer printout utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92, Section 92.2d (3) which establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT has been developed. The attached printout indicates that a water quality limit of 0.203 mg/l would be needed to prevent toxicity concerns. It is recommended that a TRC limit of 0.2 mg/l monthly average and 0.66 mg/l instantaneous maximum be applied this permit cycle, which is more stringent than the existing TRC limit. A review of the past year of DMRs verified that this more stringent limit can be met.

Additional Considerations

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the *Pennsylvania Chesapeake Watershed Implementation Plan* (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. The Phase 2 Supplement was most recently revised on September 6, 2017. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. For Phase 4 and 5 facilities, Cap Loads are not currently being implemented for renewed or amended permits for facilities that do not increase design flow. The Phase 2 Supplement also states "For new Phase 4 and 5 sewage discharges, in general DEP will issue new permits containing Cap Loads of "0" and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance, with the exception of small flow and single residence facilities."

This facility is considered a Phase 5 non-significant discharger with a design flow less than 0.2 MGD but greater than 0.002 MGD, and is considered a new discharge to a tributary to the Chesapeake Bay. Therefore, Cap Loads of "0" will remain in the permit for TN and TP. A Nutrient Credit Purchase Agreement was signed on July 14, 2008 between Chesapeake Nutrient Management, LLC, and Quail Creek Homeowners' Association to purchase 538 lbs of nitrogen credits and 40 lbs of phosphorus credits each year for a period of twenty (20) years. DEP no longer offers any tools to calculate monthly loads for Net TN and Net TP, and it is no longer needed since offsets and credits are applied annually. Therefore, the reporting requirement for monthly net TN and TP load is no longer needed and will be removed from the permit.

Chiques Creek Alternate Restoration Plan

This facility discharges to Chiques Creek. Chiques Creek was included on Pennsylvania's 1996 303(d) List of Impaired Waters due to nutrient impairments. A Total Maximum Daily Load (TMDL) for the Chiques Creek Watershed was approved by the United States Environmental Protection Agency (EPA) on April 9, 2001. Due to several deficiencies within the TMDL, it was withdrawn with approval from EPA on October 28, 2015. DEP, Susquehanna River Basin Commission (SRBC) and watershed stakeholders have been in the process of developing a large scale monitoring and restoration plan. The goal of this Alternate Restoration Plan (ARP) is to address impacts to the Chiques Creek Watershed due to suspended solids/siltation and nutrient pollution. During the ongoing ARP development, this discharge permit will be renewed to conform with existing guidance. This permit will include a Total Phosphorus (TP) limit of 2.0 mg/l. The TP limit of 2.0 mg/l is derived from 25 Pa. Code § 96.5(c). This section states that "when it is determined that the discharge of phosphorus, alone or in combination with the discharge of other pollutants, contributes or threatens to impair existing or designated uses in a free flowing surface water, phosphorus discharges from point source discharges shall be limited to an average monthly concentration of 2 mg/l." This is consistent with the existing limits in this permit.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. The instantaneous maximum fecal coliform limits have been included in the renewal permit.

Anti-Degradation (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.

303d Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is an aquatic life impairment for agriculture due to siltation, and a recreational impairment for pathogens due to an unknown source. The existing permit includes a fecal coliform limit.

Class A Wild Trout Fisheries

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

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions addressed by DEP in this fact sheet.

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	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.2	XXX	0.66	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 (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	8-Hr Composite
Total Phosphorus	XXX	XXX	XXX	2.0	XXX	4.0	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001

Other Comments: None

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)			Minimum Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Instant. Maximum		
Ammonia-N	Report	Report	XXX	Report	XXX	2/month	8-Hr Composite
Kjeldahl-N	Report	XXX	XXX	Report	XXX	2/month	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	2/month	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	2/month	8-Hr Composite
Net Total Nitrogen	XXX	0	XXX	XXX	XXX	1/year	Calculation
Net Total Phosphorus	XXX	0	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: Outfall 001

Other Comments: None

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other: