pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0248185**
Facility Type	**Municipal**	APS ID	**583487**
Major / Minor	**Minor**	Authorization ID	**1222777**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Jackson Township Authority**	Facility Name	**Jackson Township STP**
Applicant Address	60 N Ramona Road	Facility Address	60 N Ramona Road
	Myerstown, PA 17067-2149		Myerstown, PA 17067-2149
Applicant Contact	Dean Wagner	Facility Contact	Dean Wagner
Applicant Phone	7178664771	Facility Phone	7178664771
Client ID	248329	Site ID	672092
Ch 94 Load Status	Not Overloaded	Municipality	Jackson Township
Connection Status	No Limitations	County	Lebanon
Date Application Received	February 27, 2018	EPA Waived?	Yes
Date Application Accepted	April 4, 2018	If No, Reason	

Purpose of Application: Renewal of NPDES permit 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 sewage from a wastewater treatment plant that serves Jackson Township. Jackson Township Authority (Authority) owns, maintains and operates the wastewater treatment plant located in Jackson Township, Lebanon County. The treatment system is sequential batch reactor (SBR) treatment system. The collection system has no combined sewers and no bypasses or overflows are authorized in the collection system. The facility has a design annual average flow/hydraulic design capacity of 0.5 MGD. The Authority received planning approval for a discharge of up to 1MGD if needed. Portions of the Township's flow still go to Myerstown Borough sewage Treatment plant. The organic design capacity is 1,042lbs/day. The SBR discharges treated municipal wastewater to an unnamed tributary to Tulpehocken Creek which is classified for Cold Water Fishes (CWF). The existing NPDES permit was issued on August 29, 2013 with an effective date of September 1, 2013 and expiration date of August 31, 2018. The applicant submitted an administratively complete NPDES renewal application to the Department on time and is currently operating under the terms and conditions in the existing permit under administrative extension provisions pending Department action on the renewal application.

Topographical Map showing the discharge location is presented in attachment A

1.1 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-

Approve	Deny	Signatures	Date
X		J. Pascal Kwedza, P.E. / Environmental Engineer	October 2, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E./ Program Manager	

Summary of Review

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.

1.2 Changes to the existing Permit

- UV Transmittance monitoring will be required in the permit.
- Total Nitrogen monitoring has been added

1.3 Existing Permit Limits and Monitoring Requirements

Discharge Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Monthly Average	Weekly Average	Minimum	Monthly Average	Weekly Average	Instantaneous 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 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	104	167	XXX	25	40	50	1/week	24-Hr Composite
CBOD5 May 1 - Oct 31	67	104	XXX	16	25	32	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	125	187	XXX	30	45	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Ammonia Nov 1 - Apr 30	21	XXX	XXX	5.1	XXX	10.2	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	7.1	XXX	XXX	1.7	XXX	3.4	1/week	24-Hr Composite
Total Phosphorus	4.1	XXX	XXX	1.0	XXX	2	1/week	24-Hr Composite

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	.5
Latitude	40º 22' 2"	Longitude	-76º 20' 21"
Quad Name	Richland	Quad Code	1635
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary to Tulpehocken Creek (CWF)	Stream Code	01974
NHD Com ID	25993498	RMI	0.45
Drainage Area	2.3 sq. mi	Yield (cfs/mi^2)	0.22
Q_{7-10} Flow (cfs)	0.51	Q_{7-10} Basis	USGS Gage Station
Elevation (ft)	465	Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture, erosion from derelict land (barren land)		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Western Berks Water Auth		
PWS Waters	Tulpehocken Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	30

Changes Since Last Permit Issuance:

Other Comments:

1.4.1 Water Supply Intake

The nearest water supply intake is 30 miles downstream at Lower Heidelberg, Sinking Springs on Tulpehocken Creek by the Western Berks Water Authority. No impact is expected from this discharge

Discharge, Receiving Waters and Water Supply Information

Outfall No.	Secondary receiving stream	Design Flow (MGD)	0
Latitude		Longitude	
Quad Name		Quad Code	
Wastewater Description:	Sewage effluent		
Secondary Receiving Waters	Tulpehocken Creek (TSF)	Stream Code	01846
NHD Com ID	25993498	RMI	35.8
Drainage Area	9.8	Yield (cfs/mi^2)	0.22
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation, nutrients		
Source(s) of Impairment	Agriculture, erosion from derelict land (barren land)		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments: Tulpehocken Creek is impaired due to Siltation, and before reaching Blue Marsh Reservoir, Tulpehocken Creek also impaired for nutrients. TMDL development is pending.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	101	Design Flow (MGD)	0
Latitude	40º 22' 10.62"	Longitude	-76º 20' 27.10"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to Tulpehocken Creek (CWF)	Stream Code	
NHD Com ID	25993498	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-C	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture, erosion from derelict land (barren land)		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake			
PWS Waters	Tulpehocken Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	20

Changes Since Last Permit Issuance:

Other Comments:

The stormwater is directed to a holding basin whose outfall is connected to the STP's outfall. This outfall has been included in the existing permit and will continue with BMP conditions in Part C. See stormwater section of the report for additional information.

Treatment Facility Summary				
Treatment Facility Name: Jackson Township Authority				
WQM Permit No.	**Issuance Date**			
3806404	07/24/2007			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia And Phosphorus	Sequencing Batch Reactor	Ultraviolet	0.5
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.5	1,042	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments:

2.1 Treatment Facility Description

The treatment system consists of an influent pump station with comminutor and bypass bar screen, two SBR reactors, two aerobic digesters, a post-SBR flow equalization tank, and two UV disinfection system each capable of treating 1.2 mgd of flow. Aluminum Sulfate is used for Total Phosphorus removal and Soda Ash is used for pH adjustment.

Compliance History

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

Parameter	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18
Flow (MGD) Average Monthly	0.173	0.207	0.231	0.197	0.248	0.241	0.276	0.275	0.297	0.192	0.322	0.383
Flow (MGD) Daily Maximum	0.292	0.582	0.431	0.328	0.655	0.363	0.456	0.584	0.458	0.276	0.772	0.82
pH (S.U.) Minimum	7.28	7.16	7.17	7.08	7.15	7.04	7.01	7.16	6.72	6.67	7.05	6.85
pH (S.U.) Inst Maximum	7.84	7.89	7.75	7.8	7.8	7.46	7.68	7.87	7.67	7.67	8.01	7.95
DO (mg/L) Minimum	5.64	6.02	6.19	6.87	8.13	7.7	7.89	8.33	7.07	7.27	5.6	7.1
CBOD5 (lbs/day) Average Monthly	7	< 6	< 5	4	5	4	6	< 5	< 6	5	30	21
CBOD5 (lbs/day) Weekly Average	9	8	9	6	5	6	9	7	8	7	95	43
CBOD5 (mg/L) Average Monthly	4.6	< 3.6	< 3.3	2.9	3	2.4	3.1	< 2.9	< 2.7	3.8	6.5	5.9
CBOD5 (mg/L) Weekly Average	5.3	5.4	5.1	3.3	3.4	3.2	5.2	4.3	3.3	5.5	14.8	10.5
BOD5 (lbs/day) Raw Sewage Influent Ave. Monthly	234	194	234	277	250	194	231	154	211	171	219	259
BOD5 (mg/L) Raw Sewage Influent Ave. Monthly	157.8	123.2	124.2	186	147	109	126.1	94.6	83.2	122.1	83.9	82.9
TSS (lbs/day) Average Monthly	< 7	< 7	9	6	< 7	< 8	< 9	< 8	< 12	< 11	28	28
TSS (lbs/day) Raw Sewage Influent Ave. Monthly	262	182	295	310	359	192	256	223	540	292	435	463
TSS (lbs/day) Weekly Average	8	11	13	7	< 8	12	14	10	22	13	59	42
TSS (mg/L) Average Monthly	< 5.2	< 4.4	6.2	4.3	< 4.4	< 4.6	< 5	< 4.6	< 5.1	< 7.7	7.8	8.4
TSS (mg/L) Raw Sewage Influent Ave. Monthly	182	120	153	216	200	107.8	142	139	184	208	144	146

TSS (mg/L) Weekly Average	6.4	5.6	10.4	4.5	5.6	6.4	8	6.4	8.4	9.2	11.2	11.2
Total Dissolved Solids (lbs/day) Ave. Monthly		596			650			568			652	
Total Dissolved Solids (mg/L) Ave. Monthly		376			426			370			452	
Fecal Coliform (CFU/100 ml) Geometric Mean	23	9	< 3	12	7	17	< 3	3	10	43	6	< 8
Fecal Coliform (CFU/100 ml) Inst. Maximum	88	20	36	67	32	61	32	9	60	4900	39	77
Ammonia (lbs/day) Average Monthly	< 0.1	< 0.2	< 0.2	< 0.1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.1	< 0.3	< 0.4
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.12
Total Phosphorus (lbs/day) Ave. Monthly	0.9	0.9	0.9	0.7	0.4	0.6	0.5	0.5	0.5	0.6	1.0	2.0
Total Phosphorus (mg/L) Ave. Monthly	0.61	0.53	0.55	0.46	0.27	0.35	0.27	0.28	0.22	0.45	0.35	0.49

3.2 Summary of DMRs:

Discharge Monitoring Reports (DMRs) review for the facility for the last 12 months of operation presented on the table above indicate permit limits have been met consistently. No permit violation noted on DMRs during the period reviewed.

3.3 Summary of Inspections:

The facility has been inspected 6 times during last permit cycle. No effluent violations doted during plant inspections. Two pollution incidents were noted: Raw sewage overflow from a manhole within the collection system on 4/17/17 and sewage sludge was discharge to the stream on 12/18/14. Two notices of violations were sent for the two incidents. The facility is operated and maintained well.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .5
Latitude 40º 22' 2.00" **Longitude** -76º 20' 21.00"
Wastewater Description: Sewage Effluent

4.1 Basis for Effluent Limitations

In general, the Clean Water Act (AWA) 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

4.1.1 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 limitation not required, the facility utilizes UV for disinfection.

4.2 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 Water Quality-Based Limitations

4.3.1 Receiving Stream

The receiving stream is Unnamed Tributary to Tulpehocken Creek. According to 25 PA § 93.9f, this stream is protected for Cold Water Fishes (CWF). It is located in Drainage List F and State Watershed 3-C. It has been assigned stream code 01974. According to the Department's *Integrated Water Quality Monitoring and Assessment Report*, this segment of the stream is impaired and not attaining its designated uses due to siltation from agricultural activities and pathogens fron unknown sources

4.3.2 Stream flows

Streamflows flows were determined by correlating with the yield of USGS gage station No. 01471000 on Tulpehocken Creeek near Reading. The Q_{7-10} and drainage area at the gage is 46.8ft^3/s and 211mi^2 respectively. The resulting yields are as follows:

- Q_{7-10} = (46.8ft^3/s)/211 mi^2 = 0.22 $ft^3/s/ mi^2$
- Q_{30-10} / Q_{7-10} = 1.23
- Q_{1-10} / Q_{7-10} = 0.84

The drainage area at discharge taken from the previous permit= 2.3 mi^2

The Q_{7-10} at discharge = 2.31 mi^2 x 0.22 $ft^3/s/mi^2$ = 0.5 ft^3/s.

Note: The previous factsheet used a Q_{7-10} design low flow for UNT Tulpehocken determined from PA Streamstats (USGS) as 0.12 cfs. However, the drainage area upstream of the discharge is less than the minimum drainage area required for calculations in Streamstats.

4.3.3 NH_3N Calculations

NH_3N calculations will be 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 attached model result of the stream:

STP pH	=	6.85 (DMR median from July-September.)
STP Temp	=	25°C (Default)
Stream pH	=	7.0 (Default)
Stream Temp	=	20°C (Default)
Background NH_3N	=	0 mg/l (Assumed)

4.3.4 WQM Model

The WQM 7.0 model was run with Myerstown STP due to its proximity to Jackson's STP. The discharges are on two different stream segments with different stream codes for Tulpehocken Creek and the unnamed tributary. The stream code for Tulpehocken Creek 01846 was used to run the model since the model does not accept 2 stream codes in one run. Myerstown STP is located at 32.5 RMI on Tulpehocken.Creek and Jackson Township is assumed at 36.2 RMI on Tulpehocken Creek (35.8 RMI is the confluence of UNT 01974 with Tulpehocken. Creek. + 0.4 RMI on the UNT 01974)

4.3.5 $CBOD_5$

The attached results of WQM 7.0 stream model (attachments B &C) indicate that a monthly average limit (AML) of 16mg/l CBOD5 for summer months and an AML of 25mg/l for winter months are required to protect the water quality of the stream. These limits are consistent with the existing permit. Past DMRs and inspection reports show the STP has been consistently achieving below these limitations. Therefore, an AML of 16mg/l, a weekly average limit (AWL) of 22mg/l and instantaneous maximum (IMAX) of 32mg/l is required for summer months. For winter months AML of 25mg/l, AWL of 40mg/l and IMAX of 50mg/l is required. Mass limits are calculated for AMLs and AWLs following the formula listed in section 4.2 above.

4.3.6 NH_3-N

The attached results of the WQM 7.0 stream model (attachment B&C) also indicate that a summer limitation of mg/l 2.84 NH_3-N and winter limitation of mg/l 6.46 NH_3-N as AMLs are necessary to protect the aquatic life from toxicity effects. These limits are slightly less stringent than the existing summer limit of 1.7mg/l, and winter limit of 5.1mg/l. Due to anti-backsliding restrictions, the existing limits will remain in the permit. DMR and inspection reports indicate the facility is meeting the limitation. Associated mass limits are calculated following the formula listed in section 4.2 above.

4.3.7 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 per DEP guidance.

4.3.8 Phosphorus

The Phosphorus limits in the existing permit was as a result of a 1987 PA DEP study of the Blue Marsh Reservoir. It was recommended that a phosphorus limit of 1.0 mg/l be included in all permits for facilities which discharged upstream of the Reservoir. The limit will be continued in the current permit renewal.

4.3.9 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 in % will be required in the permit to ensure efficiency of the UV unit.

4.3.10 Total Suspended Solids (TSS):

There is no water quality criterion 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) with associated mass limit.

4.3.11 Toxics

The facility treats mainly domestic sewage, there are no parameters of concern associated with this discharge.

4.3.12 Nutrient Monitoring

Quarterly monitoring of Total Nitrogen is included in the current permit to obtain data for discharges to Delaware River watershed. The discharge is located outside of the Chesapeake Bay watershed, therefore no Chesapeake Bay TMDL requirement was considered.

4.3.13 Delaware River Basin Commission (DRBC) Requirements

DRBC regulations and policies are applicable to all NPDES permits for facilities within the Delaware River basin. The requirements of the most recent Docket No. D-2007-004 CP-3 for this facility which was approved on March 14, 2018 with expiration date of August 31, 2023, will be applied to the permit. All parameters required in the Docket in were in included in the existing permit and will continue during the current permit renewal. The facility is not a direct discharger to the Schuylkill River: PCB monitoring is not required. A copy of the draft permit will be forwarded to DRBC.

4.3.14 TDS, Chloride, Sulfate, Bromide, and 1,4-dioxane

Under the authority of §92a.61, DEP has determined it should implement increased monitoring in NPDES permits for TDS, sulfate, chloride, bromide, and 1,4-dioxane. The following approach will be implemented for point source discharges upon issuance or reissuance of an individual NPDES permit:

- Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.

- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.

- Where the concentration of 1,4-dioxane (CAS 123-91-1) in a discharge exceeds 10 µg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for 1,4-dioxane. Discharges of 0.1 MGD or less should monitor and report for 1,4-dioxane if the concentration of 1,4-dioxane in the discharge exceeds 100 µg/L.

The maximum daily TDS discharge results submitted with the application is 500 mg/L which is equivalent to 2025 lbs/day based on the permitted flow of 0.5 MGD. The discharge level for TDS is below the minimum 1000 mg/l and 20,000lbs/day, to require monitoring, therefore no monitoring of TDS, Chloride, Sulfate, and Bromide will be required in the permit. There is no data for 1,4-dioxane, therefore no monitoring is required for 1,4-dioxane at this time. However, the existing permit limit of 1000mg/l TDS required by DRBC will remain in the permit.

4.3.15 Influent BOD and TSS Monitoring

The permit will include influent BOD5 and TSS monitoring at the same frequency as is done for effluent in order to implement Chapter 94.12 and assess percent removal requirements, per DEP policy.

4.3.16 Industrial Users

Jackson Township's STP does not receive wastewater from any significant industrial users.

4.3.17 Pretreatment Requirements

The design annual average flow of the treatment plant is 0.5 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:

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

5.2 Stormwater

There is a stormwater outfall in the permit identified as outfall 101. Stormwater was from the treatment plant site is directed to a holding basin whose outfall is connected to the STP's outfall. The facility does not meet the requirement for stormwater monitoring requirement located in 40CFR 122.26(b)(14)(ix) at this, however the outfall will remain in the permit with BMP conditions in Part C. BMPs and conditions includes: a Preparedness, Prevention and Contingency (PPC) Plan, annual visual inspection at a minimum, and the completion of DEP's Annual Inspection Form

5.3 Biosolids Management

Digested sludge is hauled off site periodically by a license hauler.

5.4 Anti-backsliding

Not applicable to this permit

5.5 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.

5.6 Class A Wild Trout Fisheries:

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

5.7 303d listed stream

The discharge is located on a 303d listed stream segment. The receiving stream unnamed tributary of Tulpehocken creek is impaired due to siltation from agricultural activities, erosion from derelict land and pathogens from unknown source. The secondary receiving stream Tulpehocken Creek is also impaired due to Siltation and nutrients. TMDL development is pending. A total phosphorus limit of 1mg/l has been established to protect Blue Mash reservoir untill TMDL is developed. The facility has been complying with the phosphorus limitation.

5.8 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).

5.9 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.

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	Weekly Average	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 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	104	167	XXX	25	40	50	1/week	24-Hr Composite
CBOD5 May 1 - Oct 31	67	104	XXX	16	25	32	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	125	187	XXX	30	45	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Ammonia Nov 1 - Apr 30	21	XXX	XXX	5.1	XXX	10.2	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	7.1	XXX	XXX	1.7	XXX	3.4	1/week	24-Hr Composite
Total Phosphorus	4.1	XXX	XXX	1.0	XXX	2	1/week	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ultraviolet Light Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Total Dissolved Solids	XXX	XXX	XXX	1,000 Avg Qtly	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen*	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Calculation

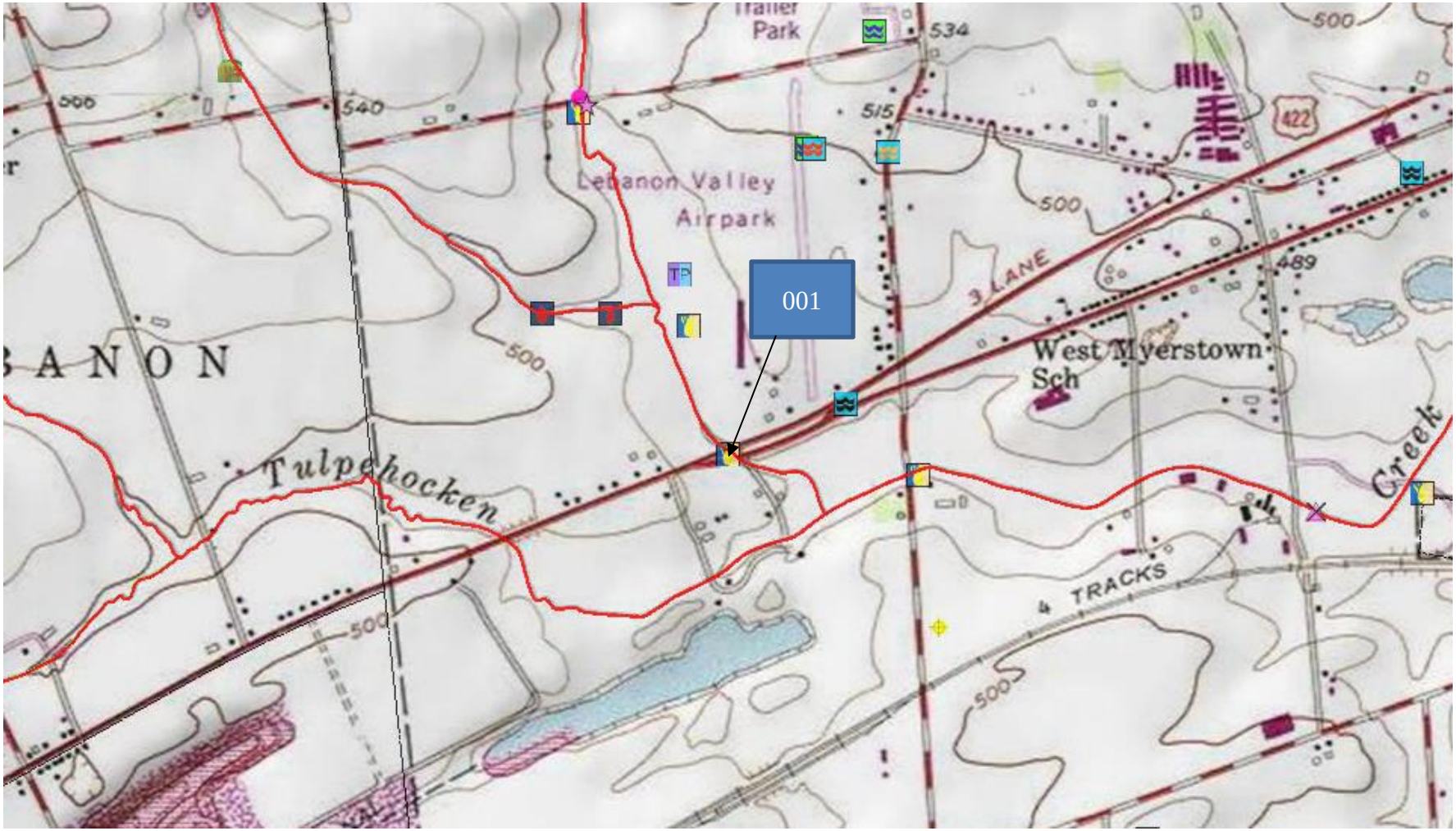
Compliance Sampling Location: Outfall 001

* Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **B &C**)
☐	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: Establishing effluent limitation for individual sewage permit
☐	Other:

Attachments

A. Topographical Map



B. WQM Model Results (Summer Months)

Summer Limits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
03C	1846	TULPEHOCKEN 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)
36.200	Jackson Twp	PA0248185	0.500	CBOD5	16.09		
				NH3-N	2.84	5.68	
				Dissolved Oxygen			5

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)
32.500	Myerstown Boro	PA0021075	2.000	CBOD5	25		
				NH3-N	5.92	11.84	
				Dissolved Oxygen			5

Permit No. PA0248185

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
03C	1846	TULPEHOCKEN CREEK	**36.200**	465.00	2.31	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	0.220	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
Jackson Twp	PA0248185	0.5000	0.5000	0.5000	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

Permit No. PA0248185

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
03C	1846	TULPEHOCKEN CREEK	**32.500**	415.00	27.80	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	0.220	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
Myerstown Boro	PA0021075	2.0000	2.0000	2.0000	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

Permit No. PA0248185

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
03C	1846	TULPEHOCKEN CREEK	**25.200**	354.00	62.00	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	0.220	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	0.00	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

Permit No. PA0248185

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
03C	1846	TULPEHOCKEN 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												
36.200	0.51	0.00	0.51	.7735	0.00256	.531	12.71	23.96	0.19	1.190	23.02	7.00
32.500	6.12	0.00	6.12	3.8675	0.00158	.731	40.98	56.06	0.33	1.338	21.94	7.00
Q1-10 Flow												
36.200	0.43	0.00	0.43	.7735	0.00256	NA	NA	NA	0.18	1.235	23.22	7.00
32.500	5.14	0.00	5.14	3.8675	0.00158	NA	NA	NA	0.31	1.418	22.15	7.00
Q30-10 Flow												
36.200	0.63	0.00	0.63	.7735	0.00256	NA	NA	NA	0.20	1.134	22.77	7.00
32.500	7.52	0.00	7.52	3.8675	0.00158	NA	NA	NA	0.36	1.243	21.70	7.00

Permit No. PA0248185

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	0.84	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.23	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

Permit No. PA0248185

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
03C	1846	TULPEHOCKEN 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
36.200	Jackson Twp	7.67	11.9	7.67	11.9	0	0
32.500	Myerstown Boro	8.44	22.46	8.28	22.46	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
36.200	Jackson Twp	1.57	2.84	1.57	2.84	0	0
32.500	Myerstown Boro	1.73	5.92	1.7	5.92	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)		
36.20	Jackson Twp	16.09	16.09	2.84	2.84	5	5	0	0
32.50	Myerstown Boro	25	25	5.92	5.92	5	5	0	0

Permit No. PA0248185

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
03C	1846	TULPEHOCKEN CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
36.200	0.500	23.017	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
12.714	0.531	23.958	0.190
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
10.50	0.827	1.71	0.883
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.286	4.962	Tsivoglou	5
Reach Travel Time (days)			
1.190			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.119	9.38	1.54	5.50
0.238	8.37	1.39	5.25
0.357	7.48	1.25	5.29
0.476	6.68	1.13	5.47
0.595	5.96	1.01	5.71
0.714	5.33	0.91	5.96
0.833	4.76	0.82	6.22
0.952	4.25	0.74	6.46
1.071	3.79	0.67	6.68
1.190	3.39	0.60	6.88

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
32.500	2.500	21.937	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
40.975	0.731	56.055	0.333
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
9.31	0.972	1.91	0.813
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.063	5.248	Tsivoglou	5
Reach Travel Time (days)			
1.338			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.134	8.07	1.71	6.00
0.268	7.00	1.54	5.71
0.402	6.07	1.38	5.78
0.535	5.27	1.24	6.00
0.669	4.57	1.11	6.27
0.803	3.96	1.00	6.55
0.937	3.44	0.89	6.81
1.071	2.98	0.80	7.04
1.205	2.59	0.72	7.26
1.338	2.24	0.64	7.45

Permit No. PA0248185

C. WQM Model Results (Winter Months)

Winter limits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
03C	1846	TULPEHOCKEN 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)
36.200	Jackson Twp	PA0248185	0.500	CBOD5	25		
				NH3-N	6.46	12.92	
				Dissolved Oxygen			5

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)
32.500	Myerstown Boro	PA0021075	2.000	CBOD5	25		
				NH3-N	9.09	18.18	
				Dissolved Oxygen			5

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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
03C	1846	TULPEHOCKEN CREEK	**36.200**	465.00	2.31	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	0.220	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
Jackson Twp	PA0248185	0.5000	0.5000	0.5000	0.000	5.00	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

Permit No. PA0248185

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
03C	1846	TULPEHOCKEN CREEK	**32.500**	415.00	27.80	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	0.220	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
Myerstown Boro	PA0021075	2.0000	2.0000	2.0000	0.000	5.00	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

Permit No. PA0248185

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
03C	1846	TULPEHOCKEN CREEK	**25.200**	354.00	62.00	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	0.220	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	0.00	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

Permit No. PA0248185

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
03C	1846	TULPEHOCKEN 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												
36.200	0.51	0.00	0.51	.7735	0.00256	.531	12.71	23.96	0.19	1.190	10.95	7.00
32.500	6.12	0.00	6.12	3.8675	0.00158	.731	40.98	56.06	0.33	1.338	14.19	7.00
Q1-10 Flow												
36.200	0.43	0.00	0.43	.7735	0.00256	NA	NA	NA	0.18	1.235	10.33	7.00
32.500	5.14	0.00	5.14	3.8675	0.00158	NA	NA	NA	0.31	1.418	13.56	7.00
Q30-10 Flow												
36.200	0.63	0.00	0.63	.7735	0.00256	NA	NA	NA	0.20	1.134	11.70	7.00
32.500	7.52	0.00	7.52	3.8675	0.00158	NA	NA	NA	0.36	1.243	14.91	7.00