

Application Type Renewal
 Facility Type Non-Municipal
 Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0033391
 APS ID 618063
 Authorization ID 1221251

Applicant and Facility Information

Applicant Name	<u>Pine Manor LLC</u>	Facility Name	<u>Pine Manor MHP</u>
Applicant Address	<u>PO Box 677</u> <u>Morgantown, PA 19543-0677</u>	Facility Address	<u>3857 E Harrisburg Pike</u> <u>Middletown, PA 17057-4622</u>
Applicant Contact	<u>James Perano</u>	Facility Contact	<u>James Perano</u>
Applicant Phone	<u>(610) 286-0490</u>	Facility Phone	<u>(610) 286-0490</u>
Client ID	<u>257233</u>	Site ID	<u>245775</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Londonderry Township</u>
Connection Status		County	<u>Dauphin</u>
Date Application Received	<u>February 15, 2018</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>April 4, 2018</u>	If No, Reason	
Purpose of Application	<u>.</u>		

Summary of Review

1.0 General Discussion

This fact sheet supports the reissuance of an existing NPDES permit for a discharge of treated domestic sewage from an existing mobile home known as Pine Manor Mobile Home Park. Pine Manor LLC. owns the wastewater treatment plant that provides sanitary services for the mobile home park. The plant has a design capacity of 0.02 mgd, and discharges to an unnamed tributary of Lynch Run which is classified for Trout Stocking (TSF) and Migratory Fishes (MF). The existing NPDES permit was issued on September 24, 2013 with an effective date of October 1, 2013 and expiration date of September 30, 2018. The applicant submitted a timely permit renewal application to the Department and is currently operating under the terms and conditions in the existing permit under administrative extension provisions pending Department action on the renewal application. A topographic map showing the discharge location is presented in attachment A

1.1 Enforcement Actions

This facility and other facilities owned by the applicant and related parties are subject to a Consent Decree No. 12 5553, entered on January 30, 2013 in the matter of United States of America and Commonwealth of Pennsylvania v. GSP Management Co. The Consent Decree requires the permittee and related parties to conduct comprehensive environmental audits, identify areas of noncompliance and take corrective necessary to ensure permit compliance. The Consent Decree requires the permittee to self-report permit violations and noncompliance with the Consent Decree and pay stipulated penalty for permit violations and noncompliance with the terms of the Consent Decree. The permittee is in compliance with the Consent Decree and continue paying stipulated penalties for any permit violations and noncompliance that occur at the site.

Approve	Deny	Signatures	Date
X		J. Pascal Kwedza, P.E. / Environmental Engineer	October 24, 2019
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E. / Program Manager	

Summary of Review

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.

1.1 Changes to the existing Permit

- Semi-annual monitoring of Total Nitrogen, TKN and nitrate-Nitrite have been added
- TRC limit is more stringent

1.3 Existing Permit Limits and Monitoring Requirements

DISCHARGE LIMITATIONS							MONITORING REQUIREMENTS	
Discharge Parameter	Mass Units (lbs/day)		Concentrations (mg/l)				Monitoring Frequency	Sample Type
	Average Monthly	Maximum Daily	Inst. Minimum	Average Monthly	Maximum Daily	Inst. Maximum		
Flow (mgd)	Monitor & Report	Monitor & Report	XXX	XXX	XXX	XXX	continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.47	XXX	1.55	1/day	Grab
Total Suspended Solids	XXX	XXX	XXX	25	XXX	50	2/month	8-hour comp
CBOD ₅	XXX	XXX	XXX	30	XXX	60	2/month	8-hour comp
Fecal Coliform (5/1 to 9/30)	XXX	XXX	XXX	200	XXX	1,000	2/month	Grab
Fecal Coliform (10/1 to 4/30)	XXX	XXX	XXX	2,000	XXX	10,000	2/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	3.0	XXX	6.0	2/month	8-hour comp
Ammonia May 1 - Oct 31	XXX	XXX	XXX	9.0	XXX	18	2/month	8-hour comp
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/yr	Calculation
Nitrate-Nitrite as N	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/yr	8-hour comp
Total Kjeldahl Nitrogen	XXX	XXX	XXX	Report Annl Avg	XXX	XXX	1/yr	8-hour comp
Total Phosphorus (lbs)	XXX	122 Total Annual	XXX	XXX	XXX	XXX	1/yr	Calculation

1.40 Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.02</u>
Latitude	<u>40° 10' 52.32"</u>	Longitude	<u>-76° 39' 52.37"</u>
Quad Name	<u>Middletown</u>	Quad Code	<u>1732</u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>Unnamed Tributary to Lynch Run (TSF, MF)</u>	Stream Code	<u>09235</u>
NHD Com ID	<u>56404777</u>	RMI	<u>0.44</u>
Drainage Area	<u>1.5</u>	Yield (cfs/mi ²)	<u>0.0307</u>
Q ₇₋₁₀ Flow (cfs)	<u>0.0461</u>	Q ₇₋₁₀ Basis	<u>USGS Gage Station 01573700</u>
Elevation (ft)	<u></u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>7-G</u>	Chapter 93 Class.	<u>TSF, MF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>Cause Unknown, Siltation, Turbidity</u>		
Source(s) of Impairment	<u>Agriculture, Other</u>		
TMDL Status	<u>Final</u>	Name	<u>Conewago Creek Watershed</u>
Background/Ambient Data		Data Source	
pH (SU)	<u></u>	<u></u>	
Temperature (°F)	<u></u>	<u></u>	
Hardness (mg/L)	<u></u>	<u></u>	
Other:	<u></u>	<u></u>	
Nearest Downstream Public Water Supply Intake	<u>Colombia Borough Water Company</u>		
PWS Waters	<u>Susquehanna River</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u>22.5</u>

Changes Since Last Permit Issuance:

Other Comments:

1.4.1 Water Supply Intake

The nearest downstream water supply intake is approximately 22.5 miles downstream by Columbia Borough Water Company on Susquehanna River in Columbia Borough, Lancaster County. No impact is expected from this discharge on the intake.

2.0 Treatment Facility Summary				
Treatment Facility Name: Pine Manor MHP				
WQM Permit No.		Issuance Date		
Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with ammonia and Phosphorus	Extended Aeration	Hypochlorite	0.02
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.02		Not Overloaded		

Changes Since Last Permit Issuance:

Other Comments:

2.1 Treatment facility

The treatment plant consists of a comminutor, influent pump station, EQ tank, an aeration tank, a clarifier, plate settler, 2 sand filter units with mud well, chlorine contact tank, De-chlorination, 2 polishing tanks (2nd chlorine tank and de-chlorination tank), flow meter pit and a sludge holding tank.

2.2 Chemicals

- Sodium Hypochlorite for disinfection
- Sodium Bisulfite for de-chlorination
- Poly Aluminum Chloride for Phosphorus removal
- Caustic Soda for pH adjustment

3.0 Compliance History

3.1 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	0.0183	0.0214	0.0229	0.0196	0.0232	0.0352	0.0349	0.0322	0.039	0.0207	0.0307	0.0231
Flow (MGD) Daily Maximum	0.0353	0.0318	0.0443	0.0346	0.0594	0.0694	0.0684	0.073	0.0642	0.0435	0.0768	0.0622
pH (S.U.) Minimum	7.2	7.33	7.02	7.6	7.04	7.3	7.31	7.0	7.3	7.3	7.4	7.2
pH (S.U.) Instant. Maximum	8.1	8.0	8.2	8.2	7.9	8.1	8.1	8.0	8.1	7.9	7.9	7.8
DO (mg/L) Minimum	6.05	5.37	5.29	6.49	6.37	8.05	7.44	7.47	7.55	5.45	5.14	5.32
TRC (mg/L) Average Monthly	< 0.03	< 0.03	< 0.03	< 0.02	< 0.05	< 0.04	< 0.03	< 0.04	< 0.05	< 0.04	< 0.04	< 0.02
TRC (mg/L) Inst. Maximum	0.11	0.11	0.13	0.10	0.14	0.12	0.15	0.15	0.14	0.12	0.13	0.09
CBOD5 (mg/L) Average Monthly	< 5	< 2.2	< 9.5	12.9	< 15.7	< 63.8	25.7	35.2	< 17.2	< 7.8	< 31.6	< 8
TSS (mg/L) Average Monthly	< 7.4	< 6.6	39.9	58.2	< 23.1	172.8	< 52.7	53	< 57.4	< 29.8	< 45.1	< 25
Fecal Coliform (CFU/100 ml) Geometric Mean	< 10	9	> 161	< 7	< 2	66	95	322	> 1107	> 286	3482	38
Fecal Coliform (CFU/100 ml) Inst. Maximum	8300	76	> 20000	5900	106	> 20000	204	> 20000	> 20000	> 20000	> 20000	> 20000
Nitrate-Nitrite (lbs/day) Annual Average								< 0.3				
Nitrate-Nitrite (mg/L) Annual Average								< 1				
Total Nitrogen (lbs/day) Annual Average								< 5				
Total Nitrogen (mg/L) Annual Average								< 15.4				
Total Nitrogen (lbs) Other Annual Final Effluent Total Annual								159				

Ammonia (mg/L) Average Monthly	< 0.7	< 0.1	< 1.23	< 12.96	11.89	8.93	8.07	6.45	< 2.5	< 2.3	10.24	< 2.47
TKN (lbs/day) Annual Average								5				
TKN (mg/L) Annual Average								14.4				
Total Phosphorus (lbs/day) Ave. Monthly	0.09	< 0.06	0.2	0.2	0.08	0.7	0.2	< 0.2	0.3	0.1	0.3	0.2
Total Phosphorus (mg/L) Ave. Monthly	0.57	< 0.31	0.68	0.81	0.37	2.12	0.55	< 0.76	0.8	0.56	1.02	0.86
Total Phosphorus (lbs) Total Monthly	3	< 2	5	5	3	20	6	< 7	9	4	8	6
Total Phosphorus (lbs) Other Annual Final Effluent Total Annual								73				

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

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
CBOD5	01/31/19	Avg Mo	25.7	mg/L	25	mg/L
CBOD5	01/31/19	Avg Mo	25.7	mg/L	25	mg/L
CBOD5	02/28/19	Avg Mo	< 63.8	mg/L	25	mg/L
CBOD5	09/30/18	Avg Mo	< 31.6	mg/L	25	mg/L
CBOD5	12/31/18	Avg Mo	35.2	mg/L	25	mg/L
TSS	11/30/18	Avg Mo	< 57.4	mg/L	30	mg/L
TSS	04/30/19	Avg Mo	58.2	mg/L	30	mg/L
TSS	05/31/19	Avg Mo	39.9	mg/L	30	mg/L
TSS	01/31/19	Avg Mo	< 52.7	mg/L	30	mg/L
TSS	12/31/18	Avg Mo	53	mg/L	30	mg/L

TSS	02/28/19	Avg Mo	172.8	mg/L	30	mg/L
TSS	11/30/18	Avg Mo	< 57.4	mg/L	30	mg/L
TSS	09/30/18	Avg Mo	< 45.1	mg/L	30	mg/L
TSS	01/31/19	Avg Mo	< 52.7	mg/L	30	mg/L
Fecal Coliform	09/30/18	Geo Mean	3482	CFU/100 ml	200	CFU/100 ml
Fecal Coliform	11/30/18	IMAX	> 20000	CFU/100 ml	10000	CFU/100 ml
Fecal Coliform	05/31/19	IMAX	> 20000	CFU/100 ml	1000	CFU/100 ml
Fecal Coliform	12/31/18	IMAX	> 20000	CFU/100 ml	10000	CFU/100 ml
Fecal Coliform	02/28/19	IMAX	> 20000	CFU/100 ml	10000	CFU/100 ml
Fecal Coliform	11/30/18	IMAX	> 20000	CFU/100 ml	10000	CFU/100 ml
Fecal Coliform	10/31/18	IMAX	> 20000	CFU/100 ml	10000	CFU/100 ml
Fecal Coliform	07/31/19	IMAX	8300	CFU/100 ml	1000	CFU/100 ml
Fecal Coliform	09/30/18	IMAX	> 20000	CFU/100 ml	1000	CFU/100 ml
Ammonia	09/30/18	Avg Mo	10.24	mg/L	3.0	mg/L
Ammonia	03/31/19	Avg Mo	11.89	mg/L	9.0	mg/L
Ammonia	04/30/19	Avg Mo	< 12.96	mg/L	9.0	mg/L
Total Phosphorus	02/28/19	Avg Mo	2.12	mg/L	2.0	mg/L

Discharge Monitoring Reports (DMRs) review for the facility for the last 12 months of operation presented on table 3.1 above indicates numerous permit limits exceedances. CBOD5, TSS, Ammonia, Total Phosphorus and Fecal Coliform limit violations noted on DMRs during for the period reviewed are presented on table 3.2. Stipulated penalty for these violations has been paid in accordance to the Consent Decree. The violations are being addressed in accordance with the requirements of the Consent Decree. The following paragraph will be added to the cover letter of the draft permit asking the permittee to address violations.

“According to DEP’s records, there are unresolved violation(s) at one or more facilities you own or operate. In accordance with DEP’s Clean Water Program standard operating procedures, an applicant’s compliance history is considered prior to making a final decision on any permit application. Please take the opportunity to address these violations during this draft comment period. DEP may not be able to issue a final permit until the violation(s) are resolved”

The violations appear to be operation related, if structural adjustment to the treatment unit is required to address the violations, the facility will be required to submit a corrective action plan to the Department for approval.

3.3 Summary of Inspections:

The facility was inspected 10 times during the past permit cycle. Other than operations and maintenance issues documented during inspections, no effluent violations were noted during inspections. The reports identified a series of operation and maintenance needed and made recommendations to the permittee to address them. The permittee has been conducting routine maintenance to address maintenance concerns of the Department.

4.0 Development of Effluent Limitations

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.02</u>
Latitude	<u>40° 10' 52.00"</u>	Longitude	<u>-76° 39' 53.00"</u>
Wastewater Description: <u>Sewage Effluent</u>			

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: Weekly averages for TSS and CBOD₅ are not applicable to this permit

4.2 Water Quality-Based Limitations

4.2.1 Streamflows

Streamflows for the water quality analysis were determined by correlating with the yield of USGS gauging station No 01573700 on Conewago Creek at Bellair. The Q₇₋₁₀ and drainage area at the gage is 0.6376ft³/s and 20.8 mi² respectively Q₃₀₋₁₀, will be calculated by 1.36 x Q₇₋₁₀. and Q₁₋₁₀ will be calculated using 0.64 x Q₇₋₁₀, which were derived the Department in the NH₃ Implementation Guidance. The resulting yields are as follows:

- $Q_{7-10} = (0.6376\text{ft}^3/\text{s})/20 \text{ mi}^2 = 0.0307\text{ft}^3/\text{s}/ \text{mi}^2$
- $Q_{30-10} / Q_{7-10} = 1.36$
- $Q_{1-10} / Q_{7-10} = 0.64$

The drainage area at the discharge point calculated by Streamstats = 1.5 mi²

The design streamflow (Q₇₋₁₀) at the discharge = 0.0307 x 1.5 = 0.046cfs

4.2.3 NH₃N Calculations

Pine Manor MHP is located in the same basin as Cedar Manor MHP and discharges to an adjacent tributary to Conewago Creek. The same stream characteristics will be used for modeling.

NH₃N 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 NH₃N criteria used in the attached computer model of the stream:

- STP pH = 7.2 (DMR Median July -Sept)
- STP Temperature = 20 ° C (default)
- Stream pH = 7.8 (from WQN station from surrounding streams)
- Stream Temperature = 20 ° C (from WQN station form surrounding streams & TSF classification F)
- Background NH₃-N = 0.0 (default)
- Design flow = 0.02MGD

4.2.4 CBOD₅:

The attached result of WQM 7.0 stream model (attachment B) indicates that, for a discharge of 0.020MGD, from Pine Manor STP, a limitation of 25 mg/l CBOD₅ as a monthly average limit (AML) and 50 mg/l as instantaneous maximum (IMAX) is adequate to protect the water quality of the stream. This limit is consistent with the existing permit and the STP has been complying with this limitation. Therefore, a limit of 25mg/l AML, and 50 mg/l IMAX is again recommended for this permit cycle.

4.2.5 NH₃-N:

The attached result of WQM 7.0 stream model (attachment B) also indicates that a summer limitation of 4.37mg/l NH₃-N as a monthly average is necessary to protect the aquatic life from toxicity effects. However, the existing monthly average summer limit of 3.0 mg/l is more stringent than the recommended limits and will remain in the permit due to anti-backsliding restrictions. Limit for winter months is 3 times the limit for summer months. (9.0 mg/l) The permittee has been complying with the limitation.

4.2.6 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.

4.2.7 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)

4.2.8 Total Residual Chlorine

The attached TRC calculation results 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 results presented in attachment C indicates that a water quality limit of 0.22 mg/l monthly average and IMAX of 0.74 mg/l would be needed to prevent toxicity concerns. The recommended limitation is more stringent than the existing permit limit but DMR and inspection reports indicate the facility can meet the recommended limitation.

4.2.9 Phosphorus & TMDL

The existing permit limit of 2mg/l based on the Department's Implementation Guidance for Phosphorus Discharges to Free-Flowing Streams (ID #391-2000-018) will remain in the permit due anti-backsliding restrictions. A TMDL was developed for

Conewago Creek Basin dated March 2, 2001 and revised on June 27, 2006. The TMDL set phosphorus limitations for Pine Manor based on 2.0 mg/l and design flow of 0.02MGD resulting in a total load of 122 lbs/yr. Pine Manor has been complying with the annual load limit. See details on the TMDL in 303d listed stream section 5.6 of the report.

4.2.10 Chesapeake Bay Strategy:

The Department formulated a strategy in April 2007, to comply with the EPA and Chesapeake Bay Foundation 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 Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive 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) will be required to monitor and report TN and TP during permit renewal at a monitoring frequency following Table 6-3 of DEP's Technical Guidance for Development and Specification of effluent Limitations (No. 362-0400-001). Any facility in Phases 4 and 5 that undergoes expansion is subjected to cap load right away.

EPA published the Chesapeake Bay Total Maximum Daily Load (TMDL) in December of 2010. Despite extensive restoration efforts during the past 25 years, the TMDL was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries.

In order to address the TMDL, Pennsylvania developed in addition to the Bay Strategy, a Chesapeake Watershed Implementation Plan (WIP) Phase 1 in January 2011 and Phase 2 in March 2012. In accordance with the Phase 2 WIP and its supplement, re-issuing permits for significant dischargers 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 renewal. This facility is, classified as a phase 5, has been monitoring Nitrate-Nitrite as N, Total Kjeldahl Nitrogen and Total Nitrogen and will be required to monitor Nitrate-Nitrite as N, Total Kjeldahl Nitrogen and Total Nitrogen semi-annually throughout the next permit cycle collect adequate data. Total Phosphorus monitoring is not required due to limitation on Total Phosphorus.

5.0 Other Requirements

5.1 Anti-backsliding

Not applicable to this permit

5.2 Stormwater:

No storm water outfall is associated with this facility

5.3 Biosolids Management

Sludge is hold up in a sludge holding tank and hauled out by a licensed hauler periodically.

5.4 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.

5.5 Class A Wild Trout Fisheries

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

5.6 303d Listed Streams:

The discharge is located on a 303d listed stream segment as impaired for aquatic life due to Turbidity and Siltation from agricultural activities. Portions of the watershed is impaired due to TSS, organic enrichment and low D.O from Municipal sources and the downstream stream Conewago Creek is listed for nutrients and siltation from agricultural sources. A TMDL was completed for the Conewago Watershed (Watershed B) on March 2, 2001 and revised in 2006 . The TMDL allocates a Total Phosphorus load of 122 lbs/year based on an effluent concentration of 2.0 mg/l and design flow of

0.02 MGD. The 2006 TMDL revision also incorporated other point dischargers that had been totally omitted in 2001. The stream's total loading did not increase. The revision allocated additional loading to the point sources by partially transferring loads from the Margin of Safety and other nonpoint sources. The facility is currently in compliance with the loading requirement.

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

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.

7.0 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” (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 Daily Min	XXX	9.0 Daily Max	XXX	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.22	XXX	0.74	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	8-Hr Composite
TSS	XXX	XXX	XXX	30	XXX	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	8-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
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	2/month	8-Hr Composite

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

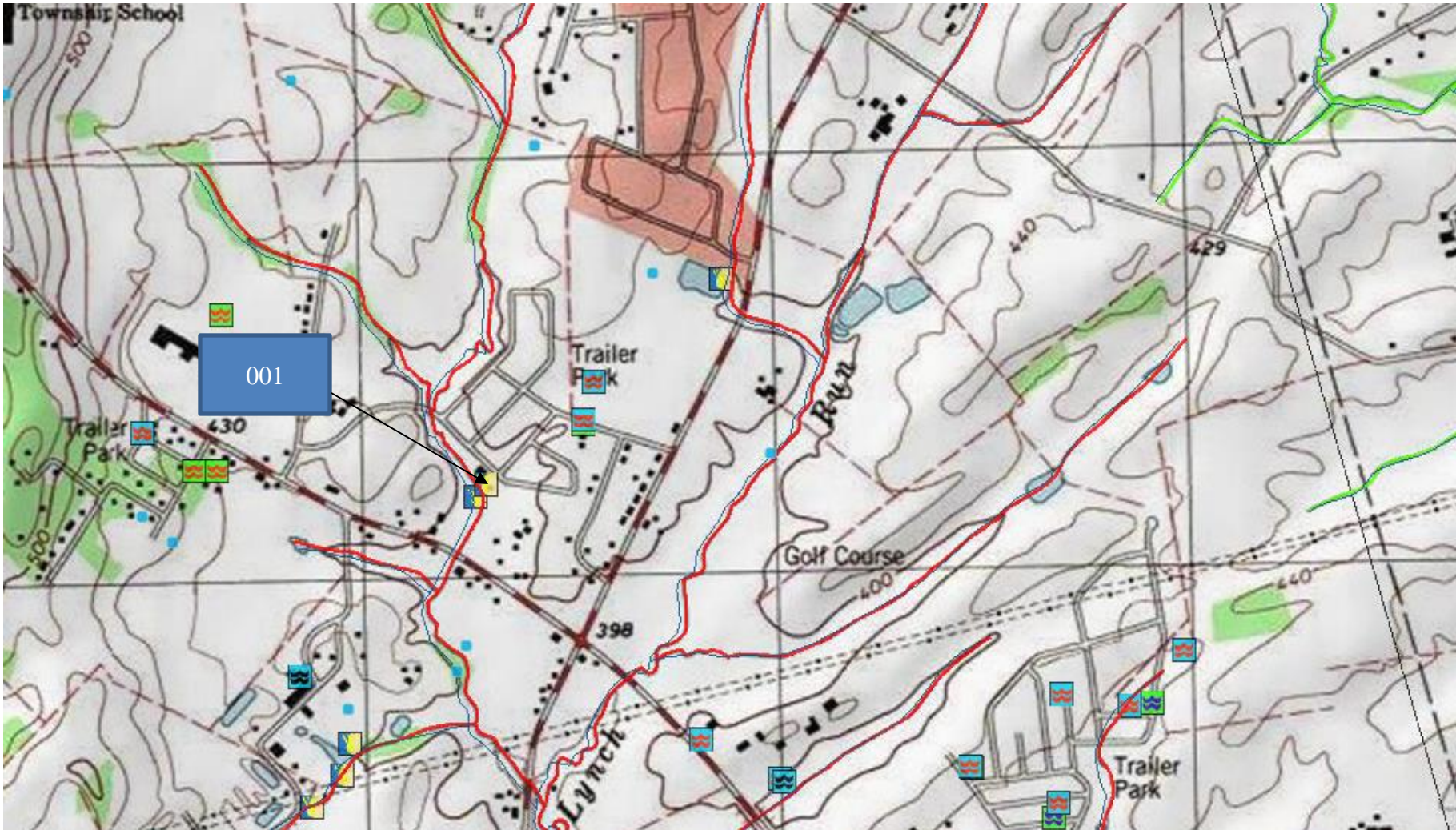
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
TKN	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/6 months	8-Hr Composite
Total Phosphorus	Report	XXX	XXX	2.0	XXX	4	2/month	8-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus (lbs)	XXX	122 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: At Outfall 001

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

9. Attachments

A. Topographical Map



B. WQM Model Results

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
07G		9235		Trib 09235 to Lynch Run			
<u>RMI</u>	<u>Name</u>	<u>Permit Number</u>	<u>Disc Flow (mgd)</u>	<u>Parameter</u>	<u>Effl. Limit 30-day Ave. (mg/L)</u>	<u>Effl. Limit Maximum (mg/L)</u>	<u>Effl. Limit Minimum (mg/L)</u>
0.440	Pine Minor MHP	PA0033391	0.020	CBOD5	25		
				NH3-N	4.37	8.74	
				Dissolved Oxygen			5

Permit No. PA0033391

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
07G	9235 Trib	09235 to Lynch Run	0.440	389.00	1.51	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	pH	Stream Temp	pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.031	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.80	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
Pine Minor MHP	PA0033391	0.0200	0.0200	0.0200	0.000	20.00	7.20

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

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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
07G	9235	Trib 09235 to Lynch Run	0.110	388.00	2.02	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary Temp	pH	Stream Temp	pH
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	(°C)		(°C)	
Q7-10	0.031	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.80	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
Londonderry I3	PA00000	0.0290	0.0290	0.0290	0.000	20.00	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

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WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
07G		9235				Trib 09235 to Lynch Run						
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
Q7-10 Flow												
0.440	0.05	0.00	0.05	.0309	0.00057	.365	5.55	15.2	0.04	0.526	20.00	7.46
Q1-10 Flow												
0.440	0.03	0.00	0.03	.0309	0.00057	NA	NA	NA	0.03	0.603	20.00	7.40
Q30-10 Flow												
0.440	0.06	0.00	0.06	.0309	0.00057	NA	NA	NA	0.04	0.471	20.00	7.50

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WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

Permit No. PA0033391

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
07G	9235	Trib 09235 to Lynch Run

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
0.440	Pine Minor MHP	6.65	13.09	6.65	13.09	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
0.440	Pine Minor MHP	1.43	4.37	1.43	4.37	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
0.44	Pine Minor MHP	25	25	4.37	4.37	5	5	0	0

Permit No. PA0033391

WQM 7.0 D.O. Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
07G	9235	Trib 09235 to Lynch Run		
<u>RMJ</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
0.440	0.020	20.000	7.460	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
5.551	0.365	15.200	0.038	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
11.15	1.268	1.74	0.700	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
6.952	15.737	Owens	5	
<u>Reach Travel Time (days)</u>	<u>Subreach Results</u>			
0.526	<u>TravTime (days)</u>	<u>CBOD5 (mg/L)</u>	<u>NH3-N (mg/L)</u>	<u>D.O. (mg/L)</u>
	0.053	10.43	1.68	7.27
	0.105	9.76	1.62	7.46
	0.158	9.13	1.56	7.60
	0.210	8.54	1.50	7.70
	0.263	7.99	1.45	7.79
	0.315	7.48	1.40	7.88
	0.368	6.99	1.34	7.95
	0.421	6.54	1.30	8.02
	0.473	6.12	1.25	8.09
	0.526	5.73	1.20	8.15

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C. TRC Calculations

Copy of TRC_CALC1

TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9					
0.046	= Q stream (cfs)			0.5	= CV Daily
0.02	= Q discharge (MGD)			0.5	= CV Hourly
30	= no. samples			1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream			1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge			15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value			720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)			0	= Decay Coefficient (K)
Source	Reference	AFC Calculations		Reference	CFC Calculations
TRC	1.3.2.iii	WLA_afc = 0.493		1.3.2.iii	WLA_cfc = 0.473
PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373		5.1c	LTAMULT_cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc = 0.184		5.1d	LTA_cfc = 0.275
Source	Effluent Limit Calculations				
PENTOXSD TRG	5.1f	AML_MULT = 1.231			
PENTOXSD TRG	5.1g	AVG_MON_LIMIT (mg/l) = 0.226			AFC
		INST_MAX_LIMIT (mg/l) = 0.740			
WLA_afc	$(.019/e^{-k \cdot AFC_tc}) + [(AFC_Yc \cdot Qs \cdot .019 / Qd \cdot e^{-k \cdot AFC_tc}) \dots + Xd + (AFC_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$				
LTAMULT_afc	$EXP((0.5 \cdot LN(cvh^2 + 1)) - 2.326 \cdot LN(cvh^2 + 1)^{0.5})$				
LTA_afc	wla_afc * LTAMULT_afc				
WLA_cfc	$(.011/e^{-k \cdot CFC_tc}) + [(CFC_Yc \cdot Qs \cdot .011 / Qd \cdot e^{-k \cdot CFC_tc}) \dots + Xd + (CFC_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$				
LTAMULT_cfc	$EXP((0.5 \cdot LN(cvd^2 / no_samples + 1)) - 2.326 \cdot LN(cvd^2 / no_samples + 1)^{0.5})$				
LTA_cfc	wla_cfc * LTAMULT_cfc				
AML_MULT	$EXP(2.326 \cdot LN((cvd^2 / no_samples + 1)^{0.5}) - 0.5 \cdot LN(cvd^2 / no_samples + 1))$				
AVG_MON_LIMIT	MIN(BAT_BPJ, MIN(LTA_afc, LTA_cfc) * AML_MULT)				
INST_MAX_LIMIT	$1.5 \cdot ((av_mon_limit / AML_MULT) / LTAMULT_afc)$				