pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0065048**
Facility Type	**Municipal**	APS ID	**554129**
Major / Minor	**Minor**	Authorization ID	**1322732**

Applicant and Facility Information

Applicant Name	**Nicholson Borough Authority**	Facility Name	**Nicholson Borough WWTP**
Applicant Address	PO Box 324	Facility Address	Lenape Lane
	Nicholson, PA 18446-0324		Nicholson, PA 18446
Applicant Contact	Dawn Bell	Facility Contact	Shaun Fortney, Operator
Applicant Phone	(570) 942-0405	Facility Phone	(570) 560-0115
Client ID	43170	Site ID	655621
Ch 94 Load Status	-	Municipality	Nicholson Township
Connection Status	-	County	Wyoming
Date Application Received	August 7, 2020	EPA Waived?	Yes
Date Application Accepted	August 10, 2020	If No, Reason	-

Purpose of Application: Application for renewal of an NPDES permit for discharge of treated sewage.

Summary of Review

The applicant is requesting the renewal of an NPDES permit to discharge up to 0.09 MGD of treated sewage into Tunkhannock Creek, a Trout Stocking, Migratory Fish (TSF, MF) receiving stream in State Water Plan Basin 4-F (Tunkhannock Creek). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. This discharge is not expected to affect public water supplies.

The permit renewal application and General Information Form (GIF) listed Outfall 001 as being located at 41º 37' 1.00", -75º 47' **00**". However, when these coordinates are entered into eMapPA or Google Maps it shows a location in the middle of the woods approximately 0.5 miles to the east of the treatment plant (further away from Tunkhannock Creek). The previous permit and previous fact sheet indicate Outfall 001 is located at 41º 37' 1.00", -75º 47' **34**". These previous coordinates show the outfall along Tunkhannock Creek, just north of the treatment plant. Therefore, the coordinates from the previous permit were carried over to this permit renewal.

Limitations for pH, $CBOD_5$, Total Suspended Solids (TSS), and Fecal Coliform are technology-based and carried over from the previous permit.

A 25.0 mg/L average monthly limit and 50.0 mg/L IMAX limit has been applied to this permit for Ammonia-Nitrogen from May-October. Monitoring/reporting for Ammonia-Nitrogen is required from November-April. A 2/month sampling frequency is being applied to be consistent with recommended frequencies.

A BPJ-based limitation for Dissolved Oxygen (DO) has also been added to the permit.

The Ammonia-Nitrogen and DO limitations will come into effect three (3) years after the permit effective date. Monitoring/ reporting will be required until the limitations become effective.

Approve	Deny	Signatures	Date
X		/s/ Allison Seyfried / Environmental Engineering Specialist	May 26, 2021
X		/s/ Amy M. Bellanca, P.E. / Environmental Engineer Manager	6-2-21

Summary of Review

As per PA Code 92a.47(a)(8) (which refers to PA Code 92a.48(b)(2)), a monthly average TRC facility-specific BAT effluent limit of 0.5 mg/L and an IMAX limit of 1.6 mg/L has been applied to this permit renewal. The TRC Calculation Spreadsheet did not recommend more stringent water quality-based limitations. Since these new limitations are technology-based and are being applied to all sewage permits across the state, the permittee will be required to meet the limits for TRC starting one year after the effective date of the permit. The eDMR data from April 2020 to March 2021 has been included in this fact sheet. This data shows that the facility is already very close to meeting the proposed limits.

The 2/month influent monitoring for BOD_5 has been changed to influent monitoring of $CBOD_5$ to better determine the removal percentages.

Sewage discharges now require monitoring and reporting for E. Coli. A monitoring frequency of 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD, 1/year for design flows of 0.002 – 0.05 MGD will be utilized.

WQM 7.0 did not recommend any stricter limits.

This is a Phase 5 Chesapeake Bay Facility. The annual monitoring/reporting for Total Nitrogen (TN), Total Phosphorus (TP), Total Kjeldahl Nitrogen (TKN), and Nitrate-Nitrite as N has been maintained in this permit.

Monitoring frequencies for all parameters with limitations have been updated to the recommended frequencies found in Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations (Document No. 362-0400-001).

The previous permit used Stream Gage 01534000 – Tunkhannock Creek near Tunkhannock, PA to model the discharge. The stream gage generated a Low Flow Yield (LFY) of 0.0515 cfs/mi^2 and a $Q_{7\text{-}10}$ of 12.4 cfs. Since this stream gage is approximately 10 miles downstream from the discharge, USGS StreamStats was also used during this permit review to model the discharge. For modeling inputs for both methods, RMI values were obtained using the "PA Historic Streams" feature of eMapPA, drainage areas were delineated using USGS's StreamStats Interactive Map, and elevations were obtained using the elevation profile feature of StreamStats. Neither modeling recommended stricter limitations.

The existing permit expired on January 31, 2021. The application for renewal was received on July 7, 2020.

A Water Management System Inspection query indicated that on January 19, 2017 a Compliance Evaluation was performed.

There are currently three open violations for this client in the Safe Drinking Water Program that may need to be resolved before issuance of the final permit:

1. 03/25/2021 - Violation ID 911544 – Violation Code D4A – Failure of a community water system to prepare and/or maintain a monthly operating report (Safe Drinking Water - Program Specific ID: 2660011).

2. 03/25/2021 - Violation ID 911545 – Violation Code C4A – Failure to operate and maintain the water system (Safe Drinking Water - Program Specific ID: 2660011).

3. 03/25/2021 - Violation ID 911546 – Violation Code D4A – Failure of a community water system to prepare and/or maintain a monthly operating report (Safe Drinking Water - Program Specific ID: 2660011).

Sludge use and disposal description and location(s): As per the permittee's Sewage Sludge / Biosolids Production and Disposal Supplemental Report, sludge is hauled to Rural Septic in Dallas Township, Luzerne County, PA by Rural Septic.

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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.09
Latitude	41º 37' 3.84"	Longitude	-75º 47' 35.28"
Quad Name	Factoryville	Quad Code	0639
Wastewater Description:	Sewage Effluent		
Receiving Waters	Tunkhannock Creek (TSF)	Stream Code	28784
NHD Com ID	66402477	RMI	14.44
Drainage Area	241 mi^2	Yield (cfs/mi^2)	0.053
Q_{7-10} Flow (cfs)	12.8	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	705	Slope (ft/ft)	-
Watershed No.	4-F	Chapter 93 Class.	TSF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-
Nearest Downstream Public Water Supply Intake	Danville Borough Water Authority		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	-
PWS RMI	122.58	Distance from Outfall (mi)	~ 95.4

Treatment Facility Summary

Treatment Facility Name: Nicholson Borough Authority WWTP

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Recirculating sand filtration	Chlorination	0.0361 (2017-2019)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.09	113	-	-	Hauled

Compliance History

DMR Data for Outfall 001 (from April 1, 2020 to March 31, 2021)

Parameter	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20
Flow (MGD) Average Monthly	0.04276	0.03696	0.03371	0.0389	0.03706	0.03871	0.03775	0.03629	0.03417	0.03216	0.03418	0.03204
Flow (MGD) Daily Maximum	0.05038	0.04539	0.03719	0.1127	0.04341	0.04658	0.04327	0.0448	0.04574	0.03602	0.06413	0.03860
pH (S.U.) Minimum	6.69	6.67	6.68	6.54	6.44	6.44	6.29	6.34	6.29	6.47	6.53	6.58
pH (S.U.) Maximum	6.81	6.81	6.82	6.78	6.69	6.77	6.71	6.71	6.53	6.81	6.77	6.76
TRC (mg/L) Average Monthly	0.5	0.7	0.7	0.7	0.7	0.7	0.6	0.53	0.61	0.44	0.29	0.34
TRC (mg/L) Instantaneous Maximum	0.55	1.15	0.98	1.05	0.98	0.99	0.81	0.65	0.81	0.85	0.68	0.71
CBOD5 (lbs/day) Average Monthly	< 2.0	< 1.0	< 1.0	< 1.0	< 0.9	< 1.0	< 2.0	< 2.0	< 0.8	< 1.0	1.0	1.0
CBOD5 (lbs/day) Weekly Average	< 3.0	< 1.0	< 1.0	< 1.0	1.0	< 1.0	3.0	3.0	< 0.8	2.0	2.0	2.0
CBOD5 (mg/L) Average Monthly	< 6.0	< 4.0	< 4.0	< 4.0	< 3.0	< 4.0	< 6.0	< 6.4	< 3.0	< 4.9	5.1	5.1
CBOD5 (mg/L) Weekly Average	8.0	< 4.0	< 4.0	< 4.0	4.0	< 4.0	8.0	8.7	< 3.0	6.7	6.2	5.4
BOD5 (mg/L) Influent Average Monthly	200	226	191	178	29.0	84.0	80.0	60.0	107	99.0	146	145
TSS (lbs/day) Average Monthly	< 1.0	< 0.6	< 1.0	< 1.0	0.9	< 2.0	< 2.0	< 1.0	< 1.0	1.0	< 1.0	< 5.0
TSS (lbs/day) Weekly Average	< 2.0	0.7	< 1.0	< 2.0	2.0	< 2.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	8.0
TSS (mg/L) Average Monthly	< 4.0	< 2.0	< 5.0	< 5.0	3.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 19.0
TSS (mg/L) Influent Average Monthly	27	24.0	30	51	124	42.0	20.0	81.0	43	47.0	50.0	56.0
TSS (mg/L) Weekly Average	< 5.0	3.0	< 5.0	< 5.0	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	32.0
Fecal Coliform (CFU/100 ml) Geo Mean	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	4.0	2.0

Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	1.0	< 1.0	2.0	2.0	9.7	4.1
Nitrate-Nitrite (lbs/day) Annual Average				8.5								
Nitrate-Nitrite (mg/L) Annual Average				30.2								
Total Nitrogen (lbs/day) Annual Average				< 10.25								
Total Nitrogen (mg/L) Annual Average				< 36.4								
TKN (lbs/day) Annual Average				< 1.78								
TKN (mg/L) Annual Average				< 6.19								
Total Phosphorus (lbs/day) Annual Average				2.0								
Total Phosphorus (mg/L) Annual Average				6.53								

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.09
Latitude 41º 37' 1.00" **Longitude** -75º 47' 34.00"
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
Flow (MGD)	Report	Maximum Daily	-	92a.27, 92a.61
$CBOD_5$	25.0	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40.0	Average Weekly	-	-
	50.0	IMAX	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30.0	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45.0	Average Weekly	-	-
	60.0	IMAX	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	-	
	1.6	IMAX		
E. Coli (No./100 ml)	Report	IMAX	-	92a.61
Ammonia-Nitrogen Nov 1 - Apr 30	Report	Average Monthly	-	BPJ
Ammonia-Nitrogen May 1 - Oct 31	25.0	Average Monthly		
	50.0	IMAX		
Dissolved Oxygen	5.0	Minimum	-	BPJ

Anti-Backsliding

No limitations were made less stringent.

Modeling Using Stream Gage:

Stream Gage: USGS Stream Gage 153400 – Tunkhannock Creek near Tunkhannock, PA

- Drainage Area = 383 mi²
- $Q_{7\text{-}10}$ = 19.7 ft³/sec

$$Low\ Flow\ Yield\ using\ Stream\ Gage = \frac{19.7\ ft^3/sec}{383\ mi^2} = \mathbf{0.0514}\ \frac{\boldsymbol{ft^3/sec}}{\boldsymbol{mi^2}}$$

$$Stream\ Flow\ at\ Outfall\ 001\ using\ Stream\ Gage = 0.515\ \frac{ft^3/sec}{mi^2} \times 241 mi^2\ = \mathbf{12.4}\ \frac{\boldsymbol{ft^3}}{\boldsymbol{sec}}$$

Modeling Using USGS StreamStats:

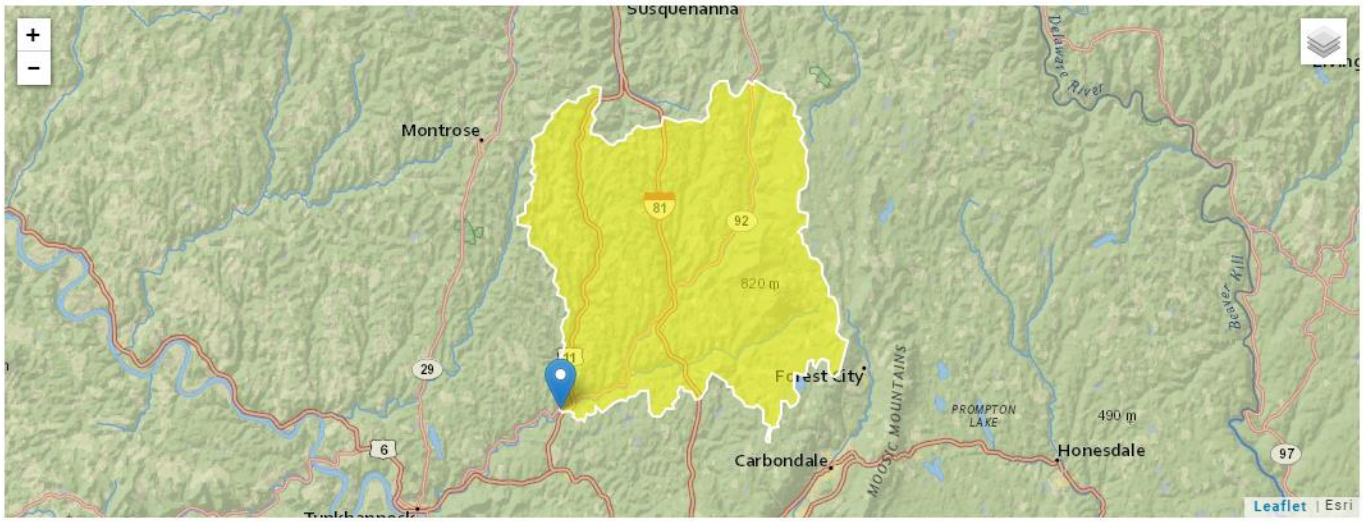
At Outfall 001 on Tunkhannock Creek:

RMI	Elevation (ft)	Drainage Area (mi²)	$Q_{7\text{-}10}$ Flow (cfs)
14.44	705	241	12.8

$$Low\ Flow\ Yield\ using\ StreamStats = \frac{12.8\ ft^3/sec}{241\ mi^2} = \mathbf{0.053}\ \frac{\boldsymbol{ft^3/sec}}{\boldsymbol{mi^2}}$$

StreamStats Report

Region ID: PA
Workspace ID: PA20210524164431646000
Clicked Point (Latitude, Longitude): 41.61762, -75.79337
Time: 2021-05-24 12:44:49 -0400



Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	241	square miles

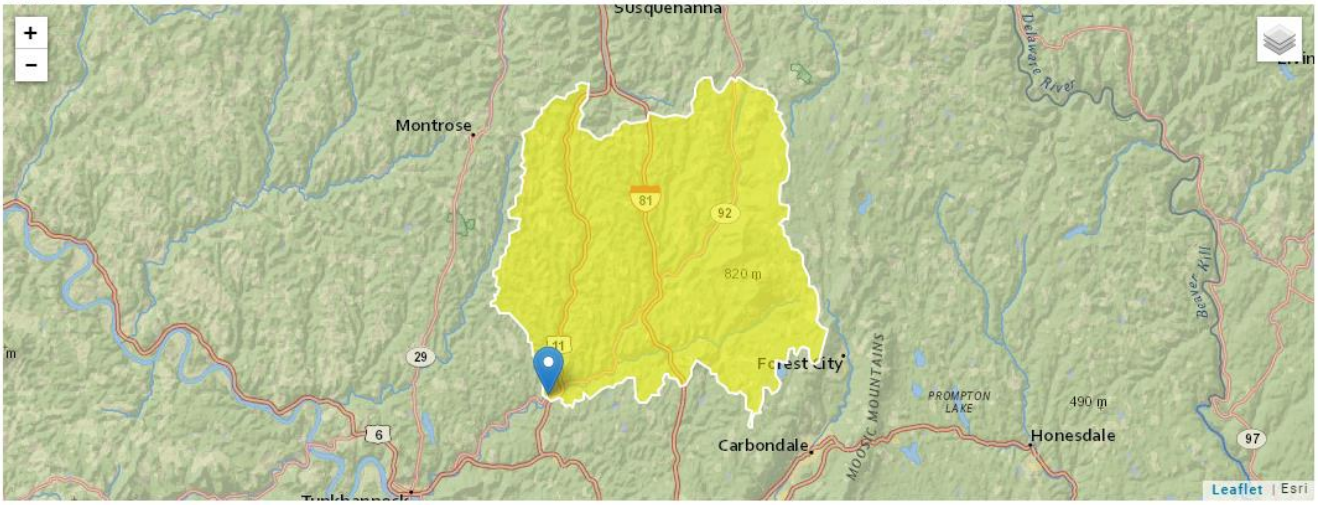
Statistic	Value	Unit	SE	SEp
7 Day 2 Year Low Flow	26.8	ft^3/s	38	38
30 Day 2 Year Low Flow	35.7	ft^3/s	33	33
7 Day 10 Year Low Flow	12.8	ft^3/s	57	57

At confluence with Horton Creek (28925):

RMI	Elevation (ft)	Drainage Area (mi^2)
14.38	704.8	258

StreamStats Report

Region ID:	PA
Workspace ID:	PA20210524165155904000
Clicked Point (Latitude, Longitude):	41.61706, -75.79406
Time:	2021-05-24 12:52:14 -0400



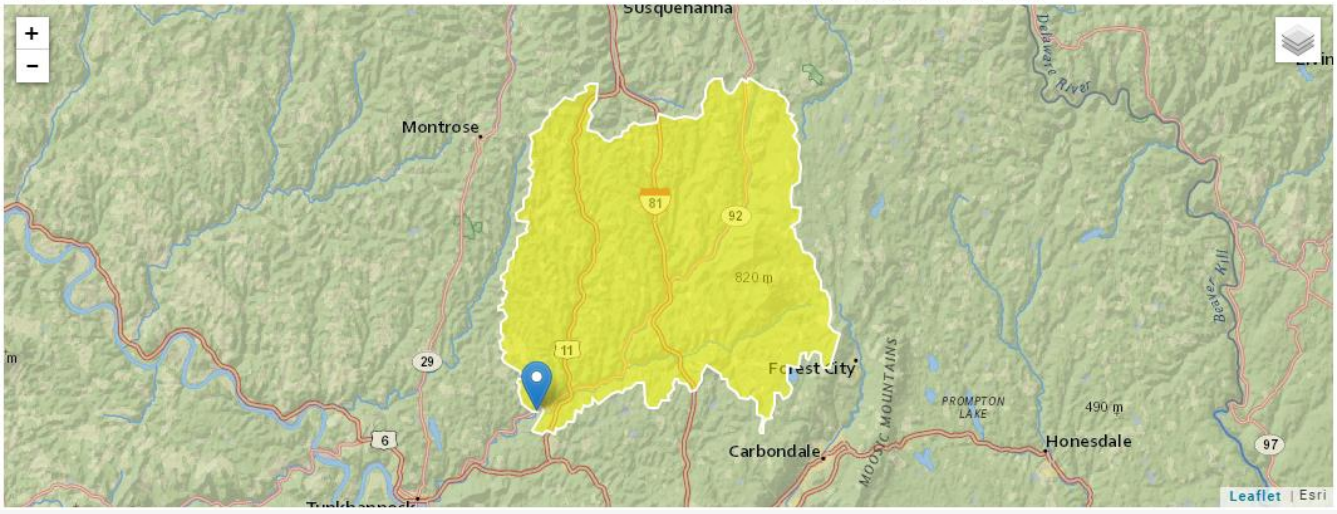
Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	258	square miles

At confluence with Unnamed Tributary 28915 to Tunkhannock Creek:

RMI	Elevation (ft)	Drainage Area (mi^2)
12.47	684.5	269

StreamStats Report

Region ID:	PA
Workspace ID:	PA20210524170712957000
Clicked Point (Latitude, Longitude):	41.60944, -75.81689
Time:	2021-05-24 13:07:32 -0400



Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	269	square miles

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

12.4	= Q stream (cfs)	0.5	= CV Daily
0.09	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	28.430	1.3.2.iii	WLA cfc =	27.709
PENTOXSD TRG	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TRG	5.1b	LTA_afc=	10.594	5.1d	LTA_cfc =	16.109

Source		Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML MULT =	1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) =	0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) =	1.635	

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
04F	28784	TUNKHANNOCK 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)
14.440	Nicholson Boro	PA0065048	0.090	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3