pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0081868**
Facility Type	**Non-Municipal**	APS ID	**884467**
Major / Minor	**Minor**	Authorization ID	**1311581**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**PA American Water Co.**	Facility Name	**American Water Co. Fairview Township North STP**
Applicant Address	852 Wesley Drive	Facility Address	55 Fairview Road
	Mechanicsburg, PA 17055-4436		New Cumberland, PA 17070-2404
Applicant Contact	Jon Prawdzik	Facility Contact	Jon Prawdzik
Applicant Phone	(717) 774-1404	Facility Phone	(717) 774-1404
Client ID	87712	Site ID	257964
Ch 94 Load Status	Not Overloaded	Municipality	Fairview Township
Connection Status	No Limitations	County	York
Date Application Received	March 11, 2020	EPA Waived?	No
Date Application Accepted	June 2, 2020	If No, Reason	Significant CB Discharge

Purpose of Application: Renewal of existing NPDES permit

Summary of Review

The PA American Water Corporation has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit for the Fairview North STP. The permit was last reissued to Fairview Township on September 22, 2015 and became effective on October 1, 2015. The permit was transferred to PA American on August 17, 2016. The permit expired on September 30, 2020 but the terms and conditions of the permit have been administratively extended since that time.

Based on the review outlined in this fact sheet, it is recommended that the permit be drafted, and a notice of the draft permit be published in the *Pennsylvania Bulletin* for public comments for 30 days. A file review of documents associated with the discharge or permittee may be available at the PA DEP southcentral regional office (SCRO), 909 Elmerton Avenue, Harrisburg, PA 17110. To make an appointment for file reviews, contact the SCRO file review coordinator at 717.705.4700.

Sludge use and disposal description and location(s): Fairview Township South WWTP

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*

Approve	Deny	Signatures	Date
x		*Aaron Baar* Aaron Baar / Permits Section	November 28, 2021
x		*Maria D. Bebenek for Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	November 30, 2021

Summary of Review
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)	.726
Latitude	40º 13' 34.21"	Longitude	-76º 51' 31.17"
Quad Name	Steelton	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Susquehanna River	Stream Code	06685
NHD Com ID	56404313	RMI	68.3
Drainage Area	24320 mi^2	Yield (cfs/mi^2)	0.1086
Q_{7-10} Flow (cfs)	2640	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	291	Slope (ft/ft)	
Watershed No.	7-E	Chapter 93 Class.	
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	**pH**		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Wrightsville Water Supply Company		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	2717
PWS RMI	43.57	Distance from Outfall (mi)	24.73

Changes Since Last Permit Issuance

- Ownership of the facility was transferred in August of 2016 to the PA American Water Corp. No upgrades to the facility have been undertaken since the last renewal.
- Since the last renewal cycle, the WWTP serving the Meadowbrook Mobile Home Park was decommissioned and the flows were routed to the Fairview North WWTP. Nutrient Credits and CAP load adjustments resulting from this flow transfer are proposed below as requested by PA American.
- The Low-Flow Yield of the Susquehanna River has changed from 0.1328 cfs/mi^2 in the last renewal cycle to 0.1086 cfs/mi^2 based on the most recent Q7-10 from the USGS StreamStats application. It is noted that the Q7-10 two renewal cycles ago was documented to be 0.1085 cfs/mi^2.
- Chlorine has been eliminated as a back-up disinfection alternative.

Discharge Point

Outfall 001 is located at confluence of Susquehanna River and Yellow Breeches Creek. This outfall is currently owned by Lower Allen Township (NPDES Permit no. PA0027189) and is used by both Lower Allen and Fairview Townships.

Drainage Area

The discharge is to the Susquehanna River at RMI 68.3. A drainage area upstream of the discharge point is estimated to be 24,320 mi^2 according to USGS PA StreamStats application.

Stream Flow

According to the past fact sheet, one-fourth of Q7-10 of the river was historically used for modeling conventional pollutants because of the width of the river. This is a reasonable approach since DEP water quality model assumes

instantaneous complete mixing between the discharge and the river, which is usually a poor assumption on large streams. Accordingly, streamflow is adjusted as follows:

LFY = 2,640 cfs / 24,320 sq. mi = 0.1086 cfs/sq.mi
Q7-10 @ Outfall 001 = 0.1086 cfs/ sq.mi x 24,320 sq.mi = 3227.7 cfs / 4 = 660 cfs

303(d) List: The Susquehanna River is assessed as impaired for pH according to the 2020 PA Integrated Monitoring and Assessment Report. A Total Maximum Daily Load (TMDL) has not been developed but is required for abovementioned impairments. pH was considered in developing effluent limitations and monitoring requirements for this renewal. Effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected.

Public Water Supply Intake

The nearest downstream public water supply intake is the Wrightsville Water Supply Company intake located on the Susquehanna River. Considering the distance and nature of the discharge, the discharge is not expected to significantly affect the water supply.

Class A Wild Trout Streams

The receiving stream is not a Class A Wild Trout stream.

Treatment Facility Summary

Treatment Facility Name: Fairview Township North STP

WQM Permit No.	Issuance Date
6788449	2016 (transfer)

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge	Ultraviolet	0.726

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.206	1740	Not Overloaded	Aerobic Digestion	Other WWTP

Other Comments: The original facility was designed and approved in 1960s (permit no. 564S33). The upgrade and expansion of the facility was proposed and approved in 1980s (permit no. 6788149). The facility does not receive any industrial/commercial wastewater and has an annual average flow of 0.726 MGD and hydraulic design capacity of 1.206 MGD. The treatment system, according to Department records, is as follows:

Screening/Distribution → Aeration basins (2) → Clarifiers (2) → UV → Outfall 001

A UV system is utilized for disinfection. Sodium Aluminate is added as a coagulant to facilitate phosphorus removal. Sludge holding tanks, a gravity thickener and a digester are available for sludge processing. Sludge is transported to Fairview Township South treatment facility for additional process prior to landfill disposal.

Compliance History	
Summary of DMRs:	A summary of past DMR data is presented on the next page.
Summary of Inspections:	Since the last NPDES permit renewal, there are no records in the Department's File Room that the facility has been inspected.

Other Comments: A records review revealed that there are 12 Clean Water open violations associated with this permitee as of November 29, 2021. None of the violations are associated with the Fairview North WWTP.

Compliance History

DMR Data for Outfall 001 (from October 1, 2020 to September 30, 2021)

Parameter	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20
Flow (MGD) Average Monthly	0.5108	0.2969	0.3005	0.2862	0.2798	0.308	0.3367	0.2998	0.2687	0.2825	0.2456	0.2488
Flow (MGD) Daily Maximum	1.7839	0.4175	0.4362	0.4824	0.3431	0.483	0.6205	0.7009	0.3719	0.7147	0.3391	0.3492
pH (S.U.) Minimum	7.3	7.2	7.2	7.1	6.4	6.9	6.9	6.9	6.8	7.0	7.0	7.0
pH (S.U.) Instantaneous Maximum	7.7	7.6	7.6	7.4	7.5	8.2	7.3	7.6	8.3	7.9	8.2	7.7
DO (mg/L) Minimum	6.8	6.4	6.3	6.8	7.2	8.0	8.3	9.3	8.4	8.1	7.5	7.3
CBOD5 (lbs/day) Average Monthly	10	12	< 16	12	9	7	9	14	< 10	< 6	< 5	< 6
CBOD5 (lbs/day) Weekly Average	12	17	25	15	13	11	14	24	26	9	5	9
CBOD5 (mg/L) Average Monthly	3	5	< 7	5	4	3	3	5	< 5	< 3	< 2	< 3
CBOD5 (mg/L) Weekly Average	3	7	12	7	6	5	4	8	11	4	3	4
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	251	269	286	251	254	283	280	405	342	291	215	235
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	310	312	367	274	446	344	321	596	401	402	255	280
BOD5 (mg/L) Raw Sewage Influent Average Monthly	77	114	119	112	107	117	103	161	161	134	111	123
TSS (lbs/day) Average Monthly	< 20	< 13	43	< 21	< 20	< 15	20	22	< 16	< 13	< 11	< 10
TSS (lbs/day) Raw Sewage Influent Average Monthly	241	238	239	158	166	202	388	177	269	195	176	114

TSS (lbs/day) Raw Sewage Influent Daily Maximum	375	275	321	410	277	313	9890	302	425	325	355	207
TSS (lbs/day) Weekly Average	26	18	123	50	27	20	31	29	22	21	14	< 11
TSS (mg/L) Average Monthly	< 6	< 5	7	< 9	< 9	< 6	7	9	< 8	< 6	< 6	< 5
TSS (mg/L) Raw Sewage Influent Average Monthly	77	101	98	75	69	82	126	78	132	88	90	61
TSS (mg/L) Weekly Average	8	7	9	23	12	8	9	11	9	9	8	< 5
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 1	< 2	< 2	< 1	2	< 4	< 12	10	< 4	< 2	< 2
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2	1	3	5	5	2	37	31	23	9	7	5
UV Transmittance (%) Minimum	79.3	77.2	69.1	72.9	66.2	71.5	71.4	71.6	65	73.3	73.3	73.3
Nitrate-Nitrite (mg/L) Average Monthly	20.5	30.4	29.5	33.3	33.6	31.4	28.8	34.6	35.2	34.5	33.2	35.6
Nitrate-Nitrite (lbs) Total Monthly	2506.2	2283.7	2236.8	2273.2	2286.4	2312.9	2515.3	2288.3	2285.6	2662.2	1944.3	2263.4
Total Nitrogen (mg/L) Average Monthly	< 21.49	< 31.43	< 30.5	< 34.3	< 34.6	< 32.8	< 29.8	< 35.6	< 36.3	< 35.7	< 34.2	< 36.6
Total Nitrogen (lbs) Effluent Net Total Monthly	< 2633.9	< 2358.2	< 2312.7	< 2341.5	< 2354.8	< 2415.3	< 2604.5	< 2361.3	< 2358.3	< 2749.8	< 2002.8	< 2327.1
Total Nitrogen (lbs) Total Monthly	< 2633.9	< 2358.2	< 2312.7	2341.5	< 2354.8	< 2415.3	< 2604.5	< 2361.3	< 2358.3	< 2749.8	< 2002.8	< 2327.1
Ammonia (lbs/day) Average Monthly	< 0.7	< 0.3	< 0.3	< 0.3	< 0.5	< 0.5	< 0.6	< 10.4	0.4	< 0.2	< 0.2	< 0.2
Ammonia (mg/L) Average Monthly	< 0.199	< 0.104	< 0.13	< 0.136	< 0.219	< 0.18	< 0.223	< 0.152	0.179	< 0.103	< 0.116	< 0.11
Ammonia (lbs) Total Monthly	< 21	< 8	< 10	< 10	< 15	< 14	< 20	< 10.4	12	< 8	< 7	< 7
TKN (mg/L) Average Monthly	< 1	0.99	< 1	< 1	< 1	< 1.4	< 1	< 1.1	< 1.1	< 1.2	< 1	< 1
TKN (lbs) Total Monthly	< 127.7	< 74.6	< 75.9	< 68.3	< 68.3	< 102.4	< 89.1	< 73	< 72.7	< 87.6	< 58.5	< 63.7

Total Phosphorus (lbs/day) Average Monthly	3	3	3	< 3	3	3	3	2	2	3	2	3
Total Phosphorus (mg/L) Average Monthly	0.69	1.3	1.24	< 1.2	1.3	1.2	0.96	0.95	0.99	1.09	1.2	1.4
Total Phosphorus (lbs) Effluent Net Total Monthly	87.2	99	93	< 85	89	89	84	63.7	69.8	84	69	87.8
Total Phosphorus (lbs) Total Monthly	87	99	93	< 85	89	89	84	64	66	79	69	87.8

Existing Effluent Limits

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
CBOD5	151	242 Wkly Avg	XXX	25	40	50	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Suspended Solids	182	272 Wkly Avg	XXX	30	45	60	1/week	8-Hr Composite
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia-Nitrogen	Report	XXX	XXX	Report	XXX	Report	2/week	8-Hr Composite
Total Phosphorus	12	XXX	XXX	2.0	XXX	4.0	2/week	8-Hr Composite
Ammonia---N	XXX	Report	XXX	Report	XXX	2/week	8-hr comp	Ammonia---N
Kjeldahl-N	XXX	Report	XXX	Report	XXX	2/week	8-hr comp	Kjeldahl-N
Nitrate-Nitrite as N	XXX	Report	XXX	Report	XXX	2/week	8-hr comp	Nitrate-Nitrite as N
Total Nitrogen	XXX	Report	XXX	Report	XXX	1/month	Calculation	Total Nitrogen
Total Phosphorus	XXX	Report	XXX	Report	XXX	2/week	8-hr comp	Total Phosphorus
Net Total Nitrogen	Report	13,333	XXX	XXX	XXX	1/month	Calculation	Net Total Nitrogen
Net Total Phosphorus	Report	1,778	XXX	XXX	XXX	1/month	Calculation	Net Total Phosphorus

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .726
Latitude 40º 13' 33.30" **Longitude** -76º 51' 31.00"
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
$CBOD_5$	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: These standards apply, subject to water quality analysis and BPJ where applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)

WQM 7.0 version 1.0b is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges.

Considering the size and location of the facility, a multiple discharge analysis was performed. Upstream POTWs including New Cumberland Borough STP (PA0026654) and Lemoyne Borough STP (PA0026441) are included in the analysis. Lower Allen Township STP (PA0027189) is also included in the analysis as Outfall 001 also receives treated sewage from this facility. Point source dischargers located other side of the river are excluded from this analysis. The model output showed that existing limits are still adequate to protect water quality standards in the receiving stream.

The monitoring frequency and sample type for CBOD5, DO and ammonia are proposed to remain unchanged.

Toxics

There are no industrial contributions to this facility. DEP's NPDES permit application for minor sewages (less than 1.0 MGD) does not require sampling for heavy metals including Total Copper, Total Lead, and Total Zinc.

Best Professional Judgment (BPJ) Limitations

Total Phosphorus & Total Nitrogen

The reviewer notes that the existing permit limits and monitoring requirements for Total Phosphorus and Total Nitrogen are consistent with Department guidance and in conformity with other Chesapeake Bay Phase 1 permits issued in the region.

Ultraviolet Disinfection

The existing UV system is equipped with a transmittance sensor; therefore, UV transmittance is proposed to be continued as the monitoring parameter for the UV system.

Additional Considerations

Annual Fee

The following clause has been added to Part A of the proposed permit in conformity with 25 Pa. Code § 92a.62.

D. Annual Fee (25 Pa. Code § 92a.62)

Permittees shall pay an annual fee in accordance with 25 Pa. Code § 92a.62. As of the effective date of this permit, the facility covered by the permit is classified in the Minor Sewage Facility >=0.05 and <1 MGD fee category, which has an annual fee of $1,000.

Invoices for annual fees will be mailed to permittees approximately three months prior to the due date. In the event that an invoice is not received, the permittee is nonetheless responsible for payment. Permittees may contact the DEP at 717-787-6744 with questions related to annual fees. The fee identified above is subject to change if DEP publishes changes to 25 Pa. Code § 92a.62.

Payment for annual fees shall be remitted to DEP at the address below or through DEP's electronic payment system (www.depgreenport.state.pa.us/NPDESpay) by the due date specified on the invoice. Checks, if used for payment, should be made payable to the Commonwealth of Pennsylvania.

PA Department of Environmental Protection
Bureau of Clean Water
Re: Chapter 92a Annual Fee
P.O. Box 8466
Harrisburg, PA 17105-8466

Flow Monitoring

The requirement to monitor the volumetric flow of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Chesapeake Bay TMDL

The Department formulated a strategy in April 2007, to comply with the EPA's and Chesapeake Bay Foundation's 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 received annual loading caps based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. Phase 4 (0.2 -0.4mgd) and Phase 5 (below 0.2mdg) facilities were 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).

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, Phase 2 in March 2012 and Phase 3 in December 2019. In accordance with the Phase 3 WIP, 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.

The Phase 3 WIP categorizes this facility as a phase 1 significant sewage facility and provides the following table:

NPDES Permit No.	Facility	Latest Permit Issuance Date	Permit Expiration Date	Cap Load Compliance Start Date	TN Cap Load (lbs/yr)	TP Cap Load (lbs/yr)

PA0081868	Fairview Township	8/17/2016	9/30/2020	10/1/2010	13,333	1,778

As reference above, since the last renewal cycle the WWTP serving the Meadowbrook Mobile Home Park was decommissioned and the flows were routed to the Fairview North WWTP. Prior to being decommissioned, 92 homes with failing onlot systems were connected to the MHP's treatment plant; PA American sought connection credits for these homes as well. Nutrient Credits and CAP load adjustments resulting from this flow transfer were requested by PA American. An analysis was performed by the Department's Zach Steckler, who made the following determination:

> "Based on the DMR data, the actual loading for the MHP was approximately 484 lb/yr TP. The estimated TN loading of 1,723 lbs/yr was a bit high compared to their actual flow rate. Using an average flow of .013 MGD and a loading of 25 mg/L, I got a value of 989 lbs/yr TN.
>
> So, for their permit they would be looking at a CAP load increase of 989 lb/yr TN and 484 lb/yr TP for taking on the additional flow, and offsets of 7,375 lb/yr TN for the on-lot systems that were eliminated."

With the CAP load adjustment and offsets, the following new CAP loads are proposed in this permit.

TN Cap Load (lbs/yr)	TP Cap Load (lbs/yr)
21,697	2,262

Monitoring Frequency and Sample Type

The facility currently is required to collect weekly grab effluent samples for CBOD5, TSS, and fecal parameters and biweekly samples for all TN and TP related parameters. This monitoring frequency is consistent with Table 6-3 of DEP's technical guidance no. 362-0400-001 and will remain unchanged in this permit.

Antidegradation Requirements

All effluent limitations and monitoring requirements 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.

Anti-backsliding Requirement

All effluent limits proposed in this fact sheet are as stringent as effluent limits specified in the existing permit renewal. This approach is in accordance with 40 CFR §122.44(l(1).

Mass Loading Limitations

All effluent mass loading limits are based on the formula: design flow x concentration limit x conversion factor of 8.34. The reviewer notes that the facility is no longer a POTW, but previously permitted mass limits have been left intact due to anti-backsliding requirements.

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	Instantaneous 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	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	151	242	XXX	25	40	50	1/week	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS	182	272	XXX	30	45	60	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs) Effluent Net	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia	Report	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/week	8-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	12	XXX	XXX	2.0	XXX	4	2/week	8-Hr Composite
Total Phosphorus (lbs) Effluent Net	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen (lbs) Effluent Net	XXX	21697 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs) Effluent Net	XXX	2262 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: Outfall 001


250413 - DISCHARGE POINT
Lemoyne
New Cumberland
Redbuds Island
Hess Island
Stucker Island
Memorial Park
Cumberland
Dauphin
Simpson Ferry Rd
Brandt Ave
Bridge St
Maple Aly
Walton St
Carol St
Westover Dr
Bailey St
Oak Ln
Swarthmore Rd
Brookhaven Rd
Terrace Dr
Park Ave
Sharon St
Locust St
Elkwood Dr
Barbara St
Sherwood Rd
Linwood St
Coolidge St
Beckley Dr
Haldeman Ave
Maple St
Elm St
Anna St
Warren St
Kathryn St
Charles St
Carol Pl
Clark St
Lowther St
S 3rd St
Plum St
Herman Ave
Bosler Ave
Apple St
Hummel Ave
Peach St
2nd St
S 4th St
S 5th St
S 6th St
N 3rd St
N 4th St
Shoreham Rd
Norman Rd
Warwick Rd
Stratford Rd
W Shore Dr
Aromore Cir
Carol Cir
7th St
15th St
16th St
12th St
11th St
10th St
9th St
8th St
7th St
6th St
5th St
4th Aly
Brandt Ave
Geary Ave
Hill Rd
Allen St
Water St
Walnut Aly
Market St
Locust Aly
2nd Aly
Evergreen St
Pine St
Hanover St
Magnolia St
Pigeon St
Allison St
Elliot St
S Cameron St
S 12th St
S 13th St
S 14th St
S 19th St
Cameron Park Dr
Ivey Ln
Harrisburg
Gibson St
Steelton
Steelton and Highspire
N River Aly
2nd Aly
3rd Aly
Franklin St
Eleanor St
Jefferson St
Canal Aly
Amtrak
Christian St
Hobali Dr
Agnes
581
83
230

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Toxics Screening Analysis Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☒	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☒	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Downstream Reach

StreamStats Report

Region ID: PA
Workspace ID: PA20211127180836252000
Clicked Point (Latitude, Longitude): 40.22460, -76.84005
Time: 2021-11-27 13:09:04 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	24300	square miles
PRECIP	Mean Annual Precipitation	39	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.75	miles per square mile
ROCKDEP	Depth to rock	4.5	feet
CARBON	Percentage of area of carbonate rock	6.07	percent
ELEV	Mean Basin Elevation	1378	feet

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3870	ft^3/s
30 Day 2 Year Low Flow	4720	ft^3/s
7 Day 10 Year Low Flow	2680	ft^3/s
30 Day 10 Year Low Flow	3290	ft^3/s
90 Day 10 Year Low Flow	4230	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

Outfall 001

StreamStats Report

Region ID: PA
Workspace ID: PA20211127181421408000
Clicked Point (Latitude, Longitude): 40.22799, -76.85750
Time: 2021-11-27 13:14:50 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	24100	square miles
PRECIP	Mean Annual Precipitation	39	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.76	miles per square mile
ROCKDEP	Depth to rock	4.5	feet
CARBON	Percentage of area of carbonate rock	5.81	percent
ELEV	Mean Basin Elevation	1384	feet

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3820	ft^3/s
30 Day 2 Year Low Flow	4660	ft^3/s
7 Day 10 Year Low Flow	2640	ft^3/s
30 Day 10 Year Low Flow	3250	ft^3/s
90 Day 10 Year Low Flow	4170	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

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
68.300	Fairview/Lower	11.23	50	11.23	50	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
68.300	Fairview/Lower	1.37	25	1.37	25	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)		
68.30	Fairview/Lower	25	25	25	25	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
68.300	9.486	24.891	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
556.808	1.267	439.307	0.956
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
2.50	0.307	0.54	1.020
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.172	8.755	Tsivoglou	6
Reach Travel Time (days)			
0.083			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.008	2.49	0.54	7.55
0.017	2.48	0.53	7.55
0.025	2.48	0.53	7.55
0.033	2.47	0.53	7.55
0.042	2.46	0.52	7.55
0.050	2.45	0.52	7.55
0.058	2.45	0.51	7.55
0.066	2.44	0.51	7.55
0.075	2.43	0.50	7.55
0.083	2.42	0.50	7.55

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

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)
68.300	Fairview/Lower	PA0081868	9.486	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5

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	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07K	6685	SUSQUEHANNA RIVER

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												
68.300	660.00	0.00	660.00	14.6748	0.00175	1.267	556.81	439.31	0.96	0.083	24.89	7.00
Q1-10 Flow												
68.300	422.40	0.00	422.40	14.6748	0.00175	NA	NA	NA	0.75	0.106	24.83	7.00
Q30-10 Flow												
68.300	897.60	0.00	897.60	14.6748	0.00175	NA	NA	NA	1.13	0.070	24.92	7.00

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
07K	6685	SUSQUEHANNA RIVER	68.300	291.00	24320.00	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	0.100	0.00	660.00	0.000	0.000	0.0	0.00	0.00	25.00	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
Fairview/Lower	PA0081868	9.4860	9.4860	9.4860	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

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.1, October 2020

Discharge Information

Instructions | Discharge | Stream

CLEAR PROJECT | CLEAR FORM | CALCULATE

Facility: **PA American - Fairview North** NPDES Permit No.: **PA0081868** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Domestic Wastewater**

Discharge Characteristics

Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.726	100	7.8						

	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc (0 if left blank)	Stream Conc	Daily CV (0.5 if left blank)	Hourly CV	Stream CV (0 if left blank)	Fate Coeff	FOS	Criteria Mod (1 if left blank)	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		832									
	Chloride (PWS)	mg/L		300									
	Bromide	mg/L											
	Sulfate (PWS)	mg/L		50.2									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L		0.018									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L		0.052									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										

☑ ***Recommended WQBELs & Monitoring Requirements***

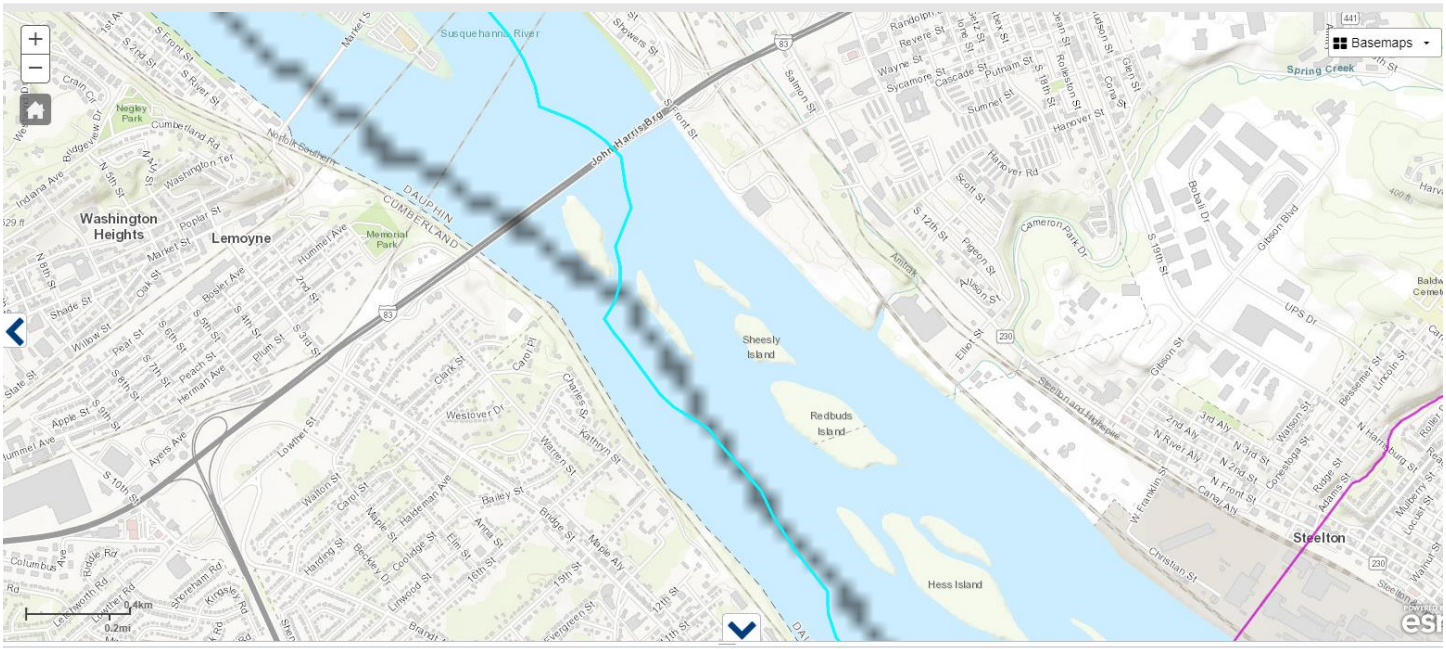
No. Samples/Month: 4

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)		mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)		mg/L	Discharge Conc ≤ 10% WQBEL
Sulfate (PWS)		mg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	293	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	2,506	µg/L	Discharge Conc ≤ 10% WQBEL



Streams - All

Zoom Clear Export

Assessme ID:	Assessed Use Category:	Assessment Determination:	Categor	NHD Flowline COMID:	Stream Name:	Length (miles):	Designated Use:	ATTAINS ID:	ATTAINS Name:	Impairment Source:	Impairment Cause:	Date Listed As Impaired:	TMDL
21500	Aquatic Life	Impaired	5	57464755	Susquehanna	0.693	WWF(WARM	PA-SCR-57464755	Susquehanna River-57464755	SOURCE	PH	2018	NA