Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0088048**
Facility Type	**Municipal**	APS ID	**37502**
Major / Minor	**Minor**	Authorization ID	**1494347**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**New Morgan Borough - Berks County**	Facility Name	New Morgan Borough STP
Applicant Address	200 Bethlehem Drive, Suite 102 Morgantown, PA 19543-9771	Facility Address	99 Grace Boulevard Morgantown, PA 19543
Applicant Contact	Ashlyn Whittingham, Borough Manager*	Facility Contact	John Scully, Operator (per application)
Applicant Phone	(610) 286-9666 / awhittingham@newmorganboro.org	Facility Phone	(215) 766-2626 / jscully@pueinc.com
Client ID	117542	Site ID	517856
Ch 94 Load Status		Municipality	New Morgan Borough
Connection Status		County	Berks
Date Application Received	August 1, 2024	EPA Waived?	Yes
Date Application Accepted	August 5, 2024	If No, Reason	
Purpose of Application	Renewal of NPDES permit for sewage discharge		

*consultant: Richard Longcoy, Ebert Engineering, rlongcoy@ebertengineering.com , 610-584-6701, and Fred Ebert, Ebert Engineering, febert@ebertengineering.com

Summary of Review

The existing permit was issued January 30, 2020, with an expiration date of January 31, 2025. The renewal application was submitted using DEP's electronic upload system (Reference ID # 250385). The existing permit was administratively extended past its stated expiration date.

According to the renewal application, the Sewage Treatment Plant (STP) only serves New Morgan Borough.

Note: Because outfall 001 is located in Caernarvon Township (whereas the Sewage Treatment Plant is located in New Morgan Borough), a copy of the draft permit and Fact Sheet are being sent by DEP, via email, to Caernarvon Township Supervisors.

Design Flow

The renewal application's cover letter represented the Annual Average Design Flow as 0.20 MGD, the same as in the existing NPDES permit and in DEP's eFacts database. This design flow was used for the development of the limits in the renewal permit.

Discharge Monitoring Reports (DMRs) from June 1, 2022 through July 31, 2025 indicate the average monthly flow at 001 was 0.01 MGD while the daily maximum flow was 0.13 MGD. A summary of the DMRs' flow data is attached.

Approve	Deny	Signatures	Date
x		*Bonnie Boylan* Bonnie Boylan / Environmental Engineering Specialist	November 19, 2025
x		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	November 19, 2025

Summary of Review

The 2024 Chapter 94 Municipal Wasteload Report submitted to DEP indicated no existing or projected hydraulic overload. See attached spreadsheet.

Industrial Users (IU)

The permittee and their consultant reported that there were no industrial users. The facility's 2024 Chapter 94 Municipal Wasteload Report also states "The Authority has no industrial wastes discharged into its system."

EPA Pretreatment Program

Not Applicable.

Combined Sewer Overflows

None.

Variances

There were no variances [40 CFR 122.21(n)] requested in the application.

Hauled-in Wastes

When questioned by DEP about any hauled-in waste accepted, the permittee's consultant answered: "The WWTP only accepts holding tank wastewater from one tenant on the property. This is the weigh house for the landfill. They haul their wastewater to the WWTP because they did not want to get a permit for a force main across an environmentally sensitive area…"

Sludge use and disposal description and location(s)

The sludge is hauled and disposed off-site, such as at DELCORA or Hatfield WWTP.
According to DEP site inspections, they have 2 sludge drying beds which are not used. Their consultant confirmed that the sludge drying beds are not used.

Outstanding Violations

There are no outstanding violations for this client according to DEP's Compliance History Summary Report, by client.

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)	0.2 matches last permit
Latitude	40º 9' 34" per application (40º 9' 34.28" per last permit)	Longitude	75º 52' 39.4" per application (75º 52' 52.55" per last permit)
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	East Branch Conestoga River *	Stream Code	7548
NHD Com ID	57461727	RMI	61.3 (per eMapPA and lat/long provided in application)
Drainage Area	6.66 sq.mi.	Yield (cfs/mi^2)	0.084
Q_{7-10} Flow (cfs)	0.56	Q_{7-10} Basis	USGS PA Stream Stats StreamStats https://streamstats.usgs.gov/ss/
Elevation (ft)	515	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	none	Existing Use Qualifier	Not applicable
Exceptions to Use	none	Exceptions to Criteria	Not applicable
Assessment Status	Impaired for Aquatic Life and Recreational Use (assess. ID 23190 and 18715)		
Cause(s) of Impairment	Nutrients, Siltation, Pathogens		
Source(s) of Impairment	Potentially urban runoff/storm sewer, impoundments, agriculture, habitat modification		
TMDL Status	Final 4/9/2005 per EPA website	Name	Conestoga Headwaters TMDL

Secondary Receiving Water:
East Branch flows into Conestoga River (also impaired for recreational use and aquatic life, also WWF, MF) which flows into Susquehanna River

Background/Ambient Data		Data Source (No WQN stations nearby)
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	City of Lancaster (PWS ID 7360058)		
PWS Waters	Conestoga River	Flow at Intake (cfs)	
PWS RMI	Approx. 23	Distance from Outfall (mi)	Approx. 38 miles

According to DEP's eMapPA and the impairment assessment layers, the receiving water is listed as East Branch Conestoga River, yet, it is also identified with a stream code for Conestoga River which is 07548. The terms East Branch Conestoga River and Conestoga River will therefore be used interchangeably throughout this fact sheet. (The existing permit also identified the receiving water as 'East Branch Conestoga River' and the stream code as 07548.)

There are **no** Class A Streams or Trout Natural Reproduction streams between outfall 001 and the Susquehanna River

Other industrial wastewater dischargers in proximity: none

There is a POTW downstream, to include in WQM 7 modeling: Caernarvon Twp MUA, PA0070424, RMI 58.1, 0.7 MGD

Treatment Facility Summary				
Treatment Facility Name: New Morgan STP				
WQM Permit No.	**Issuance Date**			
0799403	12/28/1999			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary With Ammonia And Phosphorus	Sequencing Batch Reactor	Ultraviolet	0.2
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.2	400		Aerobic Digestion	Landfill

According to their application:

The metered wastewater enters the facility at the headworks where solids are removed. The flow then is conveyed to one of two (2) 100,000 gpd sequential batch reactors (SBRs). The flows receive post-equalization then are conveyed to an Ultraviolet (UV) system for disinfection prior to discharge.

DEP 4/3/2025 inspection:

Comminutor
Influent flow measured at parshall flume with ultrasonic sensor, and composite sampler
Chemical feed/pump from 55-gallon drum (alum for phosphorus removal)
Two SBRs, one typically on-line at a time, each with a mixer
Soda ash can be added for alkalinity boost, as needed
Aerated effluent tank
UV disinfection, 2 banks
Sludge holding tank
5 blowers: one for effluent holding tank, 3 for SBRs one for sludge holding tank

Treatment Units	Total	On-Line	Inoperable	Comments
Comminutor	1	1	----	Continuous.
Influent Screen	2	1	----	One used as a high flow bypass.
SBR	2	1	----	One offline due to low flows.
Other Effluent tank	1	1	----	----
UV Lights	2	1	1	One offline for repairs.
Other Sludge drying beds	2	0	----	Not used.

The effluent from New Morgan STP and from Conestoga Landfill (PA0055328) co-mingle, with the combined flow conveyed to Conestoga Creek.
(Confirmed by permit writer: outfall 001 of PA0055328 is shown as lat/long of 40º 9' 34.3" / -75º 52' 39.4" and RMI 61.2)

EXISTING PERMIT LIMITS:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) 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 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	38	56 Wkly Avg	XXX	23	34	46	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	50	75 Wkly Avg	XXX	30	45	60	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-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
Ammonia-Nitrogen Nov 1 - Apr 30	22.0	XXX	XXX	13.5	XXX	27	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	7.0	XXX	XXX	4.5	XXX	9	1/week	24-Hr Composite
Total Phosphorus	3.3	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite
Copper, Total (4)	XXX	Report	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite
Hardness, Total (as CaCO3) (4)	XXX	Report	XXX	XXX	Report Daily Max	XXX	1/month	24-Hr Composite

Continued……

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		
Ammonia—N [5]	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Kjeldahl—N [5]	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Nitrate-Nitrite as N [5]	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Nitrogen [5]	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	1218 [3]	XXX	Report	XXX	XXX	1/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

Footnotes:

(1) When sampling to determine compliance with mass effluent limitations, the discharge flow at the time of sampling must be measured and recorded.

(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events.

(3) The Compliance year for the Total Phosphorus Annual Load (in lbs) shall be the year-long period starting October 1st and ending September 30th.

(4) Total Copper and Total Hardness shall be measured in the same sample.

(5) See Part C.I of this permit for the definition.

Compliance History

DMR Data for Outfall 001 (from July 1, 2024 to June 30, 2025)

Parameter	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24
Flow (MGD) Average Monthly	0.006359	0.009525	0.006403	0.016611	0.019667	0.018051	0.020596	0.02205	0.010033	0.004208	0.006373	0.004414
Flow (MGD) Daily Maximum	0.016913	0.028422	0.02704	0.043246	0.0356	0.026994	0.046535	0.04005	0.040302	0.01034	0.038561	0.013368
pH (S.U.) Instantaneous Minimum	6.29	6.24	6.97	6.48	6.0	6.72	6.59	6.67	6.01	6.3	6.28	6.01
pH (S.U.) Instantaneous Maximum	8.87	7.93	8.97	8.84	8.65	8.79	8.5	8.08	8.06	8.78	8.23	8.2
DO (mg/L) Instantaneous Minimum	6.21	6.35	7.47	8.66	7.92	10.02	7.72	7.75	6.81	6.0	6.54	5.7
CBOD5 (lbs/day) Average Monthly	< 0.1	< 0.2	< 0.2	< 0.4	< 0.8	< 0.6	< 0.4	< 0.4	< 0.1	< 0.06	< 0.2	< 0.06
CBOD5 (lbs/day) Weekly Average	< 0.2	< 0.5	< 0.5	0.5	1	1	0.6	< 0.4	< 0.3	< 0.08	< 0.6	< 0.07
CBOD5 (mg/L) Average Monthly	< 2	< 2	< 2	< 3	< 4	< 4	< 2	< 2	< 2	< 2	< 2	< 2
CBOD5 (mg/L) Weekly Average	< 2	< 2	3	4	6	7	2	< 2	2	2	2	< 2
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	11	11	16	26	37	46	205	77	9	5	6	9
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	18	24	53	53	47	78	714	231	34	10	19	13
BOD5 (mg/L) Raw Sewage Influent Average Monthly	170	123.1	147	155	184	265.2	732	391.7	99.2	143.9	84	318
TSS (lbs/day) Average Monthly	< 0.9	0.7	0.6	< 0.6	2	1	2	1	0.9	0.5	1	< 0.08
TSS (lbs/day) Raw Sewage Influent Average Monthly	8	6	14	22	17	111	348	61	5	6	6	8

TSS (lbs/day) Raw Sewage Influent Daily Maximum	13	12	50	33	20	41	1289	184	19	16	23	10
TSS (lbs/day) Weekly Average	2	2	1	0.8	5	4	4	2	2	0.7	4	0.2
TSS (mg/L) Average Monthly	< 13	7	8	< 4	13	8	8	7	17	17	13	< 3
TSS (mg/L) Raw Sewage Influent Average Monthly	129	60	97	142	85	235	1182	311	57	170	63	260
TSS (mg/L) Weekly Average	17	14	13	6	27	20	13	10	29	22	19	7
Fecal Coliform (No./100 ml) Geometric Mean	< 2	< 2	< 3	< 10	< 8	< 2	< 3	< 3	< 7	< 7	< 3	< 3
Fecal Coliform (No./100 ml) Instantaneous Maximum	< 2	< 2	5	62	21	< 2	< 5	5	23	331	13	16
Nitrate-Nitrite (mg/L) Average Monthly	< 49.8	< 28.63	< 45.76	< 44	< 45.7	< 44.2	< 35.1	42.48	< 54.7	< 45.76	< 35.6	< 37
Nitrate-Nitrite (lbs) Total Monthly	< 94	< 105	< 121	< 214	< 265	< 232	< 7	< 244	< 122	< 40	< 81	< 32
Total Nitrogen (mg/L) Average Monthly	< 50.3	29.13	< 46.13	< 44.5	< 46.2	< 46.14	36.8	< 42.98	< 55.2	< 46.26	< 36.8	< 38.97
Total Nitrogen (lbs) Total Monthly	< 95	< 107	< 123	< 216	< 267	< 243	< 211	< 247	< 123	< 41	< 33	< 34
Total Nitrogen (lbs) Total Annual										< 562		
Ammonia (lbs/day) Average Monthly	< 0.01	0.02	0.006	0.02	0.07	0.08	< 0.1	0.02	< 0.009	< 0.0007	< 0.003	0.003
Ammonia (mg/L) Average Monthly	< 0.1	0.2	0.1	0.1	0.3	0.5	< 0.8	< 0.1	< 0.1	< 0.02	< 0.04	0.1
Ammonia (lbs) Total Monthly	< 0.3	0.7	0.2	0.5	2	2	< 4	0.5	< 0.3	< 0.02	< 0.1	0.09
Ammonia (lbs) Total Annual										< 3		
TKN (mg/L) Average Monthly	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.98	< 1.6	< 0.5	< 0.5	< 0.5	< 6.6	< 1.97
TKN (lbs) Total Monthly	< 0.9	< 0.005	< 1	< 2	< 3	< 11	< 7	< 3	< 1	< 0.4	< 6	< 2

Total Phosphorus (lbs/day) Average Monthly	0.04	0.05	0.04	0.007	0.1	0.2	0.08	0.08	0.05	0.02	0.04	0.006
Total Phosphorus (mg/L) Average Monthly	0.6	0.4	0.5	0.4	0.6	0.9	0.4	0.4	0.8	0.8	0.6	0.2
Total Phosphorus (lbs) Total Monthly	1.2	1.4	1.3	2.2	3.3	4.7	2.3	2.4	1.6	0.7	1.4	0.2
Total Phosphorus (lbs) Total Annual										8		
Total Copper (lbs/day) Daily Maximum	0.005	0.007	0.007	0.005	0.006	0.005	0.002	0.004	0.0007	0.002	0.003	0.0008
Total Copper (mg/L) Daily Maximum	0.056	0.03	0.029	0.033	0.029	0.029	0.015	0.027	0.031	0.062	0.058	0.04
Total Hardness (lbs/day) Daily Maximum	7	28	25	20	33	17	17	16	3	3	6	3
Total Hardness (mg/L) Daily Maximum	88.5	120	109	146	150	105	106	102	130	115	108	132

Compliance History

DEP's WMS Database:

Event Start Date	Event End Date	Parameter	Limit Type	Reported Value		Permit Limit	Unit	Sampling Point	Sampling Frequency	Sampling Type	Cause of NC	Corrective Action	External Comments
01/01/2024	01/31/2024	Fecal Coliform	Instantaneous Maximum	112000	>	10000	No./100 ml	Final Effluent (001)	1/week	Grab	Equipment malfunction/failure	Equipment repaired	
05/01/2023	05/31/2023	Fecal Coliform	Instantaneous Maximum	2100	>	1000	No./100 ml	Final Effluent (001)	1/week	Grab	Equipment malfunction/failure	Changed UV bulbs	
09/01/2021	09/30/2021	Fecal Coliform	Instantaneous Maximum	2700	>	1000	No./100 ml	Final Effluent (001)	1/week	Grab	Equipment malfunction/failure	Changed UV bulbs	

DEP Site Inspections

4/3/2025 – No violations noted. Inspector comments: Record all hauled waste on the Biosolids Supplemental Form and submit the completed form via eDMR. The facility must haul sludge at least once per year. Ensure all sludge wasting activities are documented. Notes: "Facility has such a large sludge holding tank compared to daily flows that has allowed the facility to go years without hauling out sludge."

10/9/2019 – No violations noted. Inspector comments: Please revise eDMR sludge hauling records to include offsite disposals within 30 days.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.2
Latitude 40º 9' 34" **Longitude** -75º 52' 39.4"
Wastewater Description: Sewage Effluent

DEP separately determines Technology-Based Effluent Limitations (TBELs), Best Professional Judgement limitations (BPJ), and Water Quality-Based Effluent Limitations (WQBELs), compares them to existing permit limits, and decides which to impose as permit limits for the renewal permit.

Technology-Based Effluent Limitations (TBELs)

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)

Best Professional Judgment (BPJ) Limitations:

None

Water Quality-Based Effluent Limitations (WQBELs)

Chesapeake Bay Total Maximum Daily Load (TMDL):

The Chesapeake Bay TMDL identifies the necessary pollution reductions from major sources of nitrogen, phosphorus and sediment across the Bay watershed and sets pollution limits necessary to meet water quality standards. The Chesapeake Bay TMDL was approved by EPA on December 29, 2010 but was preceded by Pennsylvania's Chesapeake Bay TMDL Strategy from 2004. Attachment B of the Phase 3 Watershed Implementation Plan (WIP) Wastewater Supplement dated April 2, 2025 states:

- New Morgan Borough STP (PA0088048) has planning approval to expand to 0.5 MGD, but has not submitted a Water Quality Management (WQM) permit application to construct upgraded facilities, and is currently discharging flows below the threshold for significant Chesapeake Bay dischargers (0.4 MGD). The submission of a WQM permit application and issuance of a WQM permit by DEP is required prior to an upgrade. New Morgan's WLAs of 9,132 lbs/yr TN and 1,218 lbs/yr TP have been moved from the Significant Sewage sector to the Non-Significant sector.

  (WLA = Wasteload Allocation)

Because the discharge is within the Chesapeake Bay watershed, the existing permit's requirement to monitor for nutrients and report the results to DEP will therefore remain in the permit. The existing permit's Part C condition will also be carried forward into the draft renewal permit:

> *If the permittee expands the treatment plant in the future in accordance with previous DEP approval granted under Act 537 Municipal Sewage Planning for 0.5 MGD design flow, Chesapeake Bay cap loads for nutrients will be included in this permit as follows:*
>
> *0.8 mg/l TP x 0.5 MGD discharge x 8.34 conversion factor x 365 days/year = 1218 lbs/yr Total Phosphorus (TP)*
> *6 mg/l TN x 0.5 MGD discharge x 8.34 conversion factor x 365 days/year = 9132 lbs/yr Total Nitrogen (TN)*
>
> *Also, a Water Quality Management (WQM) Permit from the DEP must first be obtained for the construction of new treatment plants or for expansions.*

The facility's Chesapeake Bay Supplemental DMR for Annual Nutrient Monitoring for Compliance Year 2024 (October 1, 2023 through September 30, 2024) –also called Annual CB Spreadsheet--reported <562 lbs of TN and 8 lbs of TP as the annual total mass loads. The same Supplemental DMR reported the average concentration for TN of <33.25 mg/l and 0.48 mg/l for TP.

The facility's Chesapeake Bay Supplemental DMR for Annual Nutrient Monitoring for Compliance Year 2023 (October 1, 2022 through September 30, 2023) reported <1194 lbs of TN and <11 lbs of TP as the annual total mass loads. The same Supplemental DMR reported the average concentration for TN of <46.7 mg/l and <0.35 mg/l for TP.

The facility's DMRs from June 1, 2022 through July 31, 2025 for TN and TP are also attached.

Conestoga Headwaters Total Maximum Daily Load (TMDL):

TMDL Search (https://www.ahs.dep.pa.gov/TMDL/)

Conestoga Headwaters TMDL		
Information	**Status**	**Links**
County: Berks **Category:** NONPOINT SOURCE **Cause:** DISSOLVED OXYGEN, EUTROPHICATION, PHOSPHORUS, ALGAE, CHLOROPHYLL-A, NUTRIENTS, BIOCHEMICAL OXYGEN DEMAND (BOD), ORGANIC ENRICHMENT **HUC:** 2040203, 2050306	EPA Approved 4/9/2005	**TMDL:** Conestoga Headwaters TMDL **Information:** Information Sheet for Conestoga Headwaters TMDL **Public Notice:** Public Notice for Conestoga Headwaters TMDL

Some stream segments of the Conestoga Headwaters were assessed as "impaired", i.e. not supporting their designated uses. As early as 1996, segments were listed on the 303(d) list of impaired waters that States report to EPA [in accordance with § 303(d) of the Clean Water Act]. In 2005, a TMDL was approved to address impairments identified for the Conestoga Headwaters watershed, namely nutrients. This TMDL assigned a Total Phosphorus Wasteload Allocation (WLA) for this facility of 1218 lbs/year based on a concentration limit of 2.0 mg/l and a design flow of 0.2 MGD.

The existing permit contains a total annual loading limit of 1,218 lbs/yr for Total Phosphorus and a monthly average concentration limit for Total Phosphorus of 2.0 mg/l. These limits will continue to be included in the draft renewal permit.

WQBELs other than TMDL:

DEP uses a model known as WQM 7.0 to determine appropriate limits for CBOD5, Ammonia (NH3-N), and Dissolved Oxygen (DO). DEP's Guidance document #386-2000-022 provides the methods and calculations contained in the WQM 7.0 model for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. For more explanation of the WQM 7.0 model, see Technical Reference Guide WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, document #386-2000-016.

The source of the River Mile Indices (RMI's) and elevations that were used in the WM 7.0 model (and TMS model discussed below) are DEP's eMapPA while the source of the Drainage Areas and stream design low-flows (Q_{7-10}) are the USGS PA Stream Stats online tool (see attached). Low Flow Yield (LFY) is calculated as stream low-flow Q_{7-10} divided by Drainage Area of the stream at a specified location.

DEP uses a model called the Toxics Management Spreadsheet (TMS) for toxic pollutants. It is a macro-enabled Excel version of DEP's former PENTOX model. It evaluates the reasonable potential for discharges to cause in-stream exceedances of water quality criteria for toxic parameters and recommends Water Quality-Based Effluent Limitations (WQBELs) as permit limits as needed or recommends monitoring requirements to better evaluate 'reasonable potential' for some parameters. For more explanation of the TMS / PENTOX model, see Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, document #386-2000-015.

When there are less than 10 effluent sample results, the *maximum* effluent concentration of the available data (such as from the permit application and from DMRs) is used by DEP as the discharge concentration input value in the TMS. In this case there were more than 10 effluent sampling results for Total Copper and for Hardness. Using the facility's Daily Effluent Supplemental DMR data from August 1, 2023 through July 31, 2025 in DEP's TOXCONC spreadsheet resulted in statistical averages with 99% probability and coefficients of variation (CVs) for both Total Copper and Hardness. These values were then entered in the TMS model as 'discharge concentration' and 'daily CV'. See the attached TOXCONC and TMS inputs and results.

The following results were determined through water quality modeling (see attached):

Parameter	Model Results (mg/l)	Statistical Base Code	Model
Ammonia	4.5 *	Average Monthly	WQM 7.0
Ammonia	9 *	Maximum	WQM 7.0
CBOD5	23 *	Average monthly	WQM 7.0
Dissolved Oxygen	5.0 *	Minimum	WQM 7.0
Total Copper	0.029	Average Monthly	Toxics Management Spreadsheet
Total Copper	0.047	Daily Maximum	Toxics Management Spreadsheet
Total Copper	0.072	Instant.Maximum	Toxics Management Spreadsheet

*The model did not calculate a more stringent WQBEL than the existing permit limit. The existing permit limits (WQBELs) are protective of the receiving water and have been carried forward.

For **Ammonia**, DEP often allows a less stringent Ammonia limit during cold months in recognition of the fact that Ammonia is less toxic to aquatic life in cold temperatures. The existing permit's Ammonia limits for both warm months (shown in above table) and for cool months (13.5 mg/l as a Monthly Average and 27 mg/l as a Maximum) have been carried forward into the draft renewal permit.

DEP's TMS model recommended the above WQBELs for Total Copper because a "Reasonable Potential" for the discharge to cause an exceedance of an in-stream water quality criteria for Total Copper was demonstrated. Because the Total Copper water quality criteria varies according to Hardness of the water, monitoring of the discharge Hardness has been continued.

Consistent with DEP's Standard Operating Procedure (SOP) "Establishing Water-Quality Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers', a Pre-draft Survey was sent to the permittee and their consultants on September 11, 2025. (See the attached.) The Survey was sent as an email attachment and delivery receipts were received. No response was received from the permittee or their consultants.

DEP's SOP 'Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers' also recommends that permittees be given the opportunity to forward site-specific data to replace any default values used in DEP's model simulations in order to refine the WQBELs. This option has been included in the Part C Conditions of the draft renewal permit. If the data is collected and forwarded to DEP, it will be reviewed and considered. Any changes to the permit limits would require a permit amendment, with due process: issuance of a draft permit, a public notice, a mandatory 30-day comment period, and issuance of a final permit.

Default values used in the TMS model in the absence of site-specific data include:

- Stream pH = 7 s.u.
- Discharge pH = 7 s.u.
- Stream Hardness = 100 mg/l
- Chemical translators for metals
- Background concentration of toxics = 0 mg/l

In addition, the TMS model estimates the stream width, depth, slope, velocity, and partial mix factors.

The facility's DMRs between June 1, 2022 and July 31, 2025 show a median concentration of Total Copper of 0.033 mg/l and an average of 0.047 mg/l. The same DMRs showed Total Copper in the effluent exceeding the proposed maximum limit of 0.047 mg/l eight months out of 38 months. (See the attached.) Because the permittee cannot immediately meet the new WQBELs, a compliance schedule has been included. The draft renewal permit includes a three-year compliance schedule for the permittee to meet the new WQBELs with interim progress reports submitted to DEP as required by federal regulations. A compliance schedule is considered appropriate because the sources of the Copper may be unknown and new treatment or other reduction/removal measures may be needed to achieve the new limits for Total Copper. DEP's workload and staffing levels were also considered in proposing three years as the compliance schedule.

Mass Loading Limits

Consistent with the Technical Guidance for the Development and Specification of Effluent Limitations, document #386-0400-001, and the SOP 'Establishing Effluent Limitations in Individual Sewage NPDES Permits', average monthly mass loading limits have been established for CBOD5, TSS, and NH3 at outfall 001, and average weekly mass loading limits have additionally been established for CBOD5 and TSS at outfall 001.

Anti-Backsliding

No limits in the draft renewal permit are less stringent than in the existing permit.

OTHER

Ultraviolet (UV) Monitoring

DEP's SOP 'Establishing Effluent Limitations in Individual Sewage NPDES Permits' recommends routine monitoring of Ultraviolet (UV) transmittance, dosage, or light intensity when the facility is utilizing an UV disinfection system in lieu of chlorination. It recommends UV monitoring at the same frequency that would be used for Total Residual Chlorine. According to their consultant (September 10, 2025 email from Fred Ebert of Ebert Engineering) and the existing permit's Fact Sheet, the facility's UV equipment does not include a display panel indicating transmittance, dosage, or light intensity. The current equipment only provides a green light for 'power on'. In such cases, when DEP allows the existing equipment to not be replaced, DEP includes the following requirement in the Part C Conditions of the NPDES permit:

> *The permittee shall report operation of the ultraviolet (UV) disinfection system on a daily basis using the Daily Effluent Monitoring Form and the parameter named "UV Functional" The permittee shall report values of "1" for Yes (i.e., the UV system is functional) and "< 1" for No (i.e., the UV system is not functional). The UV system shall be considered functional when all components that are necessary for disinfection to achieve effluent limitations in Part A of this permit are operating properly.*

If the facility increases its flow or upgrades its disinfection system or does not consistently meet its Fecal Coliform permit limits, the disinfection system should be retrofitted with a system that monitors (UV) transmittance, dosage, or light intensity. The NPDES permit and DMRs would be amended to reflect such change.

Note: DEP's SOP 'Establishing Effluent Limitations in Individual Sewage NPDES Permits' allows the Part C Condition shown above but encourages facilities to upgrade the monitoring equipment or UV system in the future to one that can report in units of % transmittance, mWs/cm2, mjoules/cm2, µW/cm2, mW/cm2, or to add a peripheral sampler.

Total Dissolved Solids (TDS) Monitoring

The application did not include any TDS sample results nor did the existing permit require TDS monitoring. The receiving water is not assessed as impaired for TDS, the facility is not expanding, no industrial wastewater is contributed to the STP, and the downstream Public Water Supply intake is more than 35 miles away. Therefore, no TDS limit or monitoring requirement has been added at this time.

For documentation, the 2012 application reported a maximum concentration of TDS of 580 mg/l. Title 25 Pa Code § 95.10 requires a monthly average TDS limit of 2000 mg/l for new discharges or those expanding their TDS load from that of August 20__ by greater than 5000 lbs/day, neither of which apply to this facility.

Sample Types and Monitoring Frequencies

Sample types and monitoring frequencies are consistent with the Technical Guidance for the Development and Specification of Effluent Limitations, document #386-0400-001, and/or carried forward from the previous permit.

Flow Monitoring

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

Influent BOD & TSS Monitoring

The existing influent monitoring reporting requirement for BOD5 and TSS will be maintained in the renewal permit, consistent with the permits of other municipal wastewater treatment facilities.

E. Coli Monitoring

Consistent with the SOP 'Establishing Effluent Limitations in Individual Sewage NPDES Permits' and due to the regulatory change in the State Water Quality Standards, 25 PA Code Chapter 93, E. Coli monitoring at outfall 001 has been included. The statutory basis for this requirement is provided at PA Code § 92a.61.

Total Nitrogen and Total Phosphorus Monitoring

In an effort to understand nutrient loading on PA streams, sewage dischargers with design flows greater than 2000 gpd are required, at a minimum, to monitor for Total Nitrogen (TN) and Total Phosphorus (TP) in new and reissued permits. Because the discharge is within the Chesapeake Bay watershed, monitoring and limits have previously been imposed to satisfy the Chesapeake Bay TMDL which addresses TN and TP. These have been carried forward into the draft renewal permit.

General Pretreatment Requirements Relating to PFAS

Standard language is now included in NPDES municipal sewage permits in Part B.I.D. as follows:

4. Each POTW without an approved Pretreatment Program shall, within six (6) months of the permit effective date, develop a list of Industrial Users (IUs) in industry categories expected or suspected of per- and polyfluoroalkyl substance (PFAS) discharges to the POTW and submit the list to EPA at EPA_R3_Pretreatment@epa.gov and to DEP at RA-EPNPDES_PERMITS@pa.gov. These industry categories shall include airports; centralized waste treatment; electroplating; electric and electronic components; fire training; landfills; leather tanning & finishing; metal finishing; organic chemicals, plastics & synthetic fibers (OCPSF); paint formulating; plastics molding & forming; pulp, paper & paperboard; **textile mills**; sites known or suspected of PFAS contamination; and any other sources expected or suspected of PFAS discharges. The list must contain the names, addresses, NAICS codes, and industry categories (as listed above) of any IUs identified.

Although the facility does not accept wastewater from IUs at this time, if it begins to in the future, DEP would have to be notified in compliance with Part A.III.C., Planned Changes to Waste Stream. DEP would determine if a permit amendment is needed. If EPA requests it, DEP will also inform EPA of known Publicly Owned Treatment Works (POTWs) with IUs suspected of per- and polyfluoroalkyl substance discharges when IUs are added beyond the deadline stated in Part B.I.D, as shown in above excerpt.

Class A Trout Fisheries

No Class A Trout Fisheries are impacted by this discharge.

Antidegradation

The permit limits and conditions are intended to protect the designated and existing uses of the receiving stream. No High Quality or Exceptional Value waters are impacted by this discharge.

Part C Permit Conditions

As with the existing permit's PART C Conditions, Part C of the draft renewal permit includes Chesapeake Bay Nutrient Requirements, standard requirements for minor sewage facilities including a restriction on accepting hauled-in wastes, the handling and disposal of sludge and solids, and a requirement that the permittee submit a Corrective Action Plan if DEP determines that the batch discharges cause impairment to aquatic life in the receiving stream.

STORMWATER

No stormwater outfalls were identified in the renewal application or in the existing permit or in the DEP inspection reports.

The facility is < 1 MGD.

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 as needed and BPJ. Instantaneous Maximum (IMAX) limits are generally 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" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Effective Date + 3 Years

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	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
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	38	56 Wkly Avg	XXX	23	34 Wkly Avg	46	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	50	75 Wkly Avg	XXX	30	45 Wkly Avg	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV Functional	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-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)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia Nov 1 - Apr 30	22.0	XXX	XXX	13.5	XXX	27	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	7.0	XXX	XXX	4.5	XXX	9	1/week	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Kjeldahl Nitrogen (TKN)	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	3.3	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Copper	XXX	Report	XXX	XXX	Report	XXX	1/month	24-Hr Composite
Total Hardness (as CaCO3)	XXX	Report	XXX	XXX	Report	XXX	1/month	24-Hr Composite

Compliance Sampling Location: at outfall 001

Comments:

- The permittee shall report operation of the ultraviolet (UV) disinfection system on a daily basis using the Daily Effluent Supplemental DMR and the parameter named “UV Functional”. The permittee shall report values of “1” for Yes (i.e., the UV system is functional) and “< 1” for No (i.e., the UV system is not functional). The UV system shall be considered functional when all components that are necessary for disinfection to achieve effluent limitations in Part A of this permit are operating properly.

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

-Total Copper and Total Hardness shall be measured in the same sample.

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 as needed and BPJ. Instantaneous Maximum (IMAX) limits are generally 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" (386-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date + 3 Years through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	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
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	38	56 Wkly Avg	XXX	23	34 Wkly Avg	46	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	50	75 Wkly Avg	XXX	30	45 Wkly Avg	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	24-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
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV Functional	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite as N	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-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)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	22.0	XXX	XXX	13.5	XXX	27	1/week	24-Hr Composite

Outfall 001, Effective Period: Permit Effective Date + 3 Years through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia May 1 - Oct 31	7.0	XXX	XXX	4.5	XXX	9	1/week	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Kjeldahl Nitrogen (TKN)	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	3.3	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Copper	0.048	0.078	XXX	0.029	0.047	0.072	1/week	24-Hr Composite
Total Hardness (as CaCO3)	XXX	Report	XXX	XXX	Report	XXX	1/week	24-Hr Composite

Compliance Sampling Location: at outfall 001

Comments:

- The permittee shall report operation of the ultraviolet (UV) disinfection system on a daily basis using the Daily Effluent Supplemental DMR and the parameter named “UV Functional”. The permittee shall report values of “1” for Yes (i.e., the UV system is functional) and “< 1” for No (i.e., the UV system is not functional). The UV system shall be considered functional when all components that are necessary for disinfection to achieve effluent limitations in Part A of this permit are operating properly.

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

-Total Copper and Total Hardness shall be measured in the same sample.

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 as needed and BPJ. Instantaneous Maximum (IMAX) limits are generally 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" (386-0400-001), SOPs and/or BPJ.

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

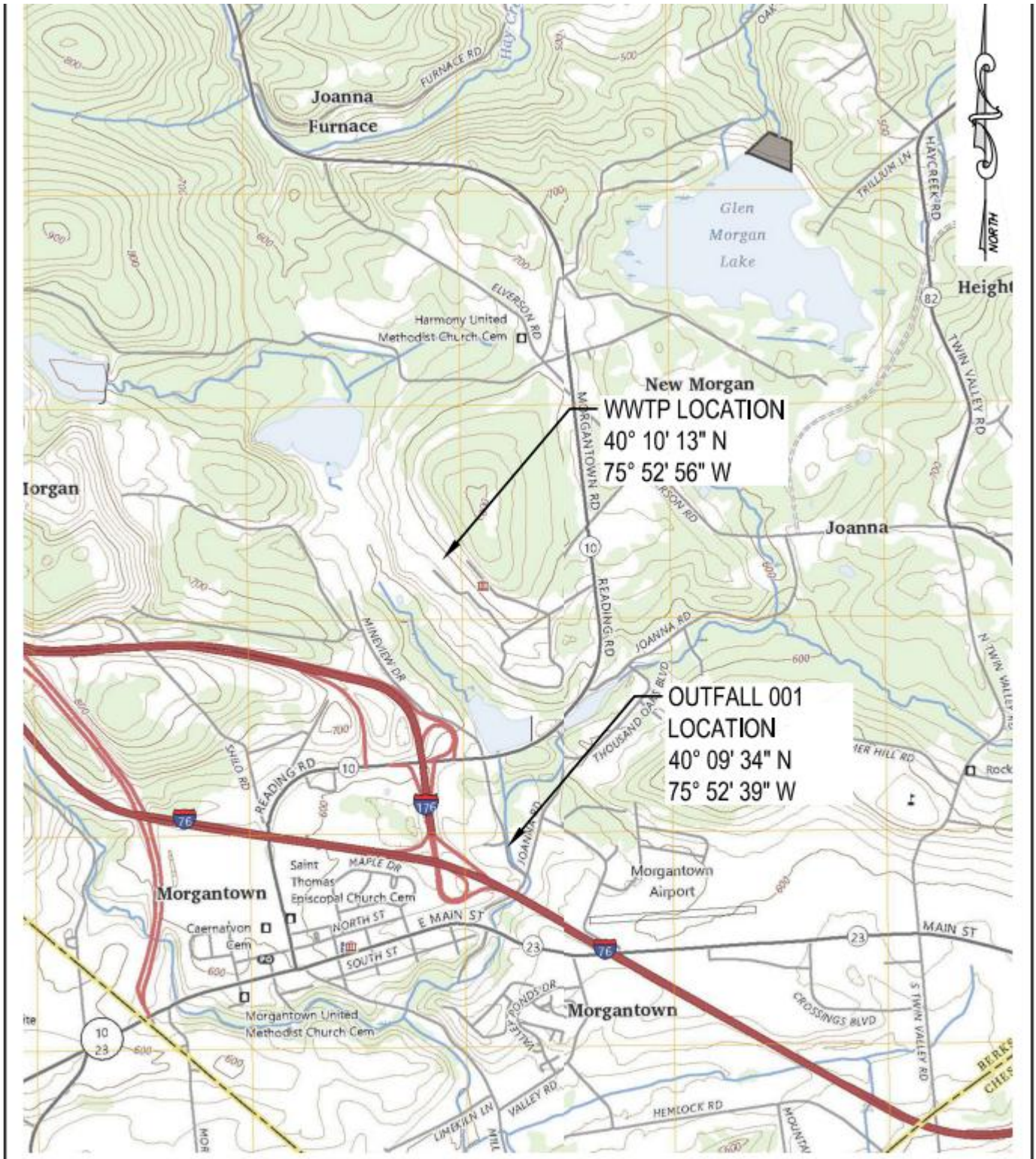
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia—N	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Kjeldahl—N	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	1218	XXX	Report	XXX	XXX	1/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001

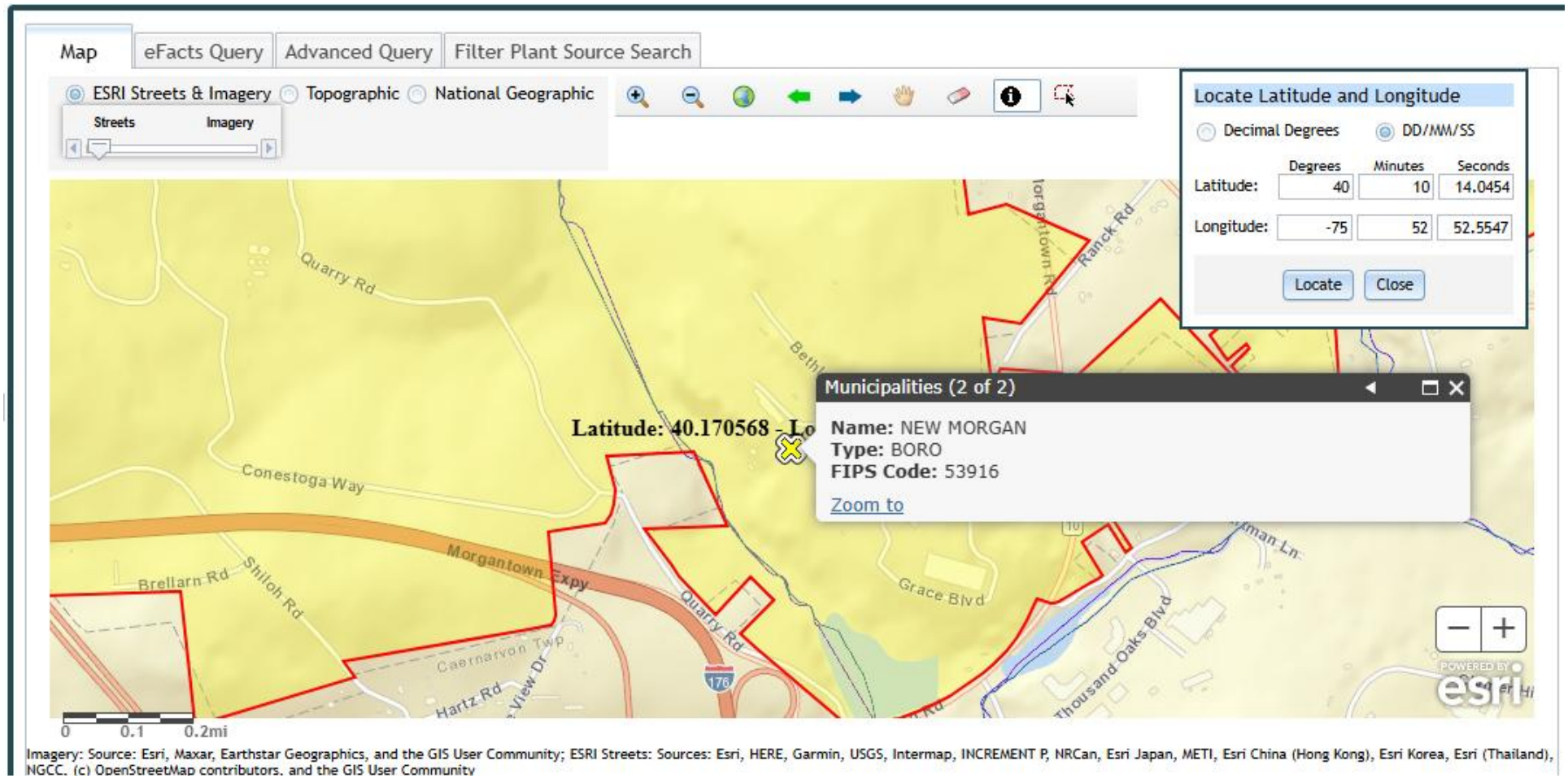
Comments: See Part C.I.A. of permit for Chesapeake Bay conditions.

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☒	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 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, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 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, 386-2000-010, 3/1999.
☒	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	EPA Technical Support Document for Water Quality-based Toxics Control (TSD), EPA/505/2-90-001, PB91-127415, March 1991.
☒	SOP: New and Reissuance Sewage Individual NPDES Permit Applications, Version 2.0, February 3, 2022
☒	SOP: Establishing Effluent Limitations in Individual Sewage NPDES Permits, Version 2.0, February 5, 2024
☒	SOP: Establishing Water-Quality Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers. Version 1.5, May 20, 2021.

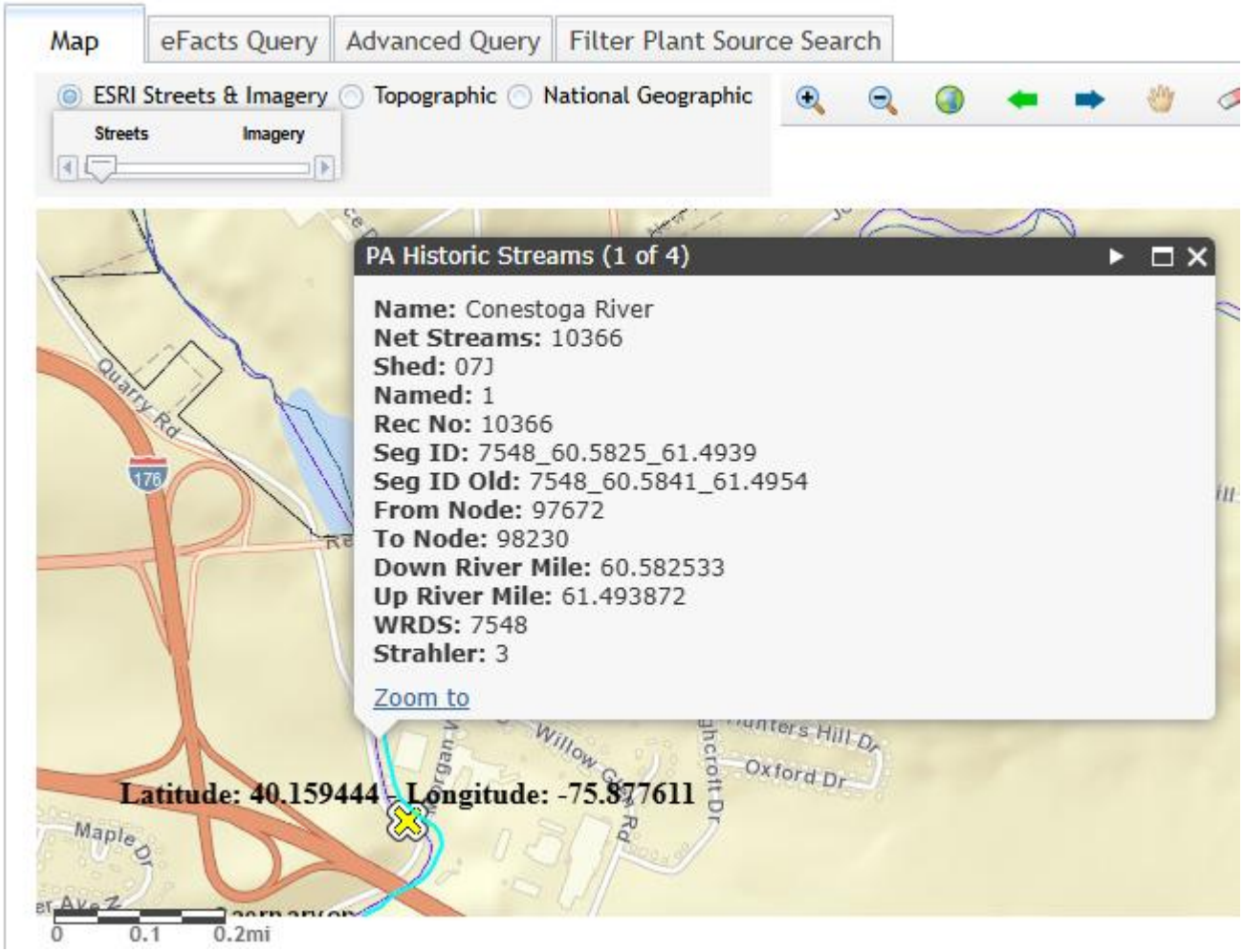


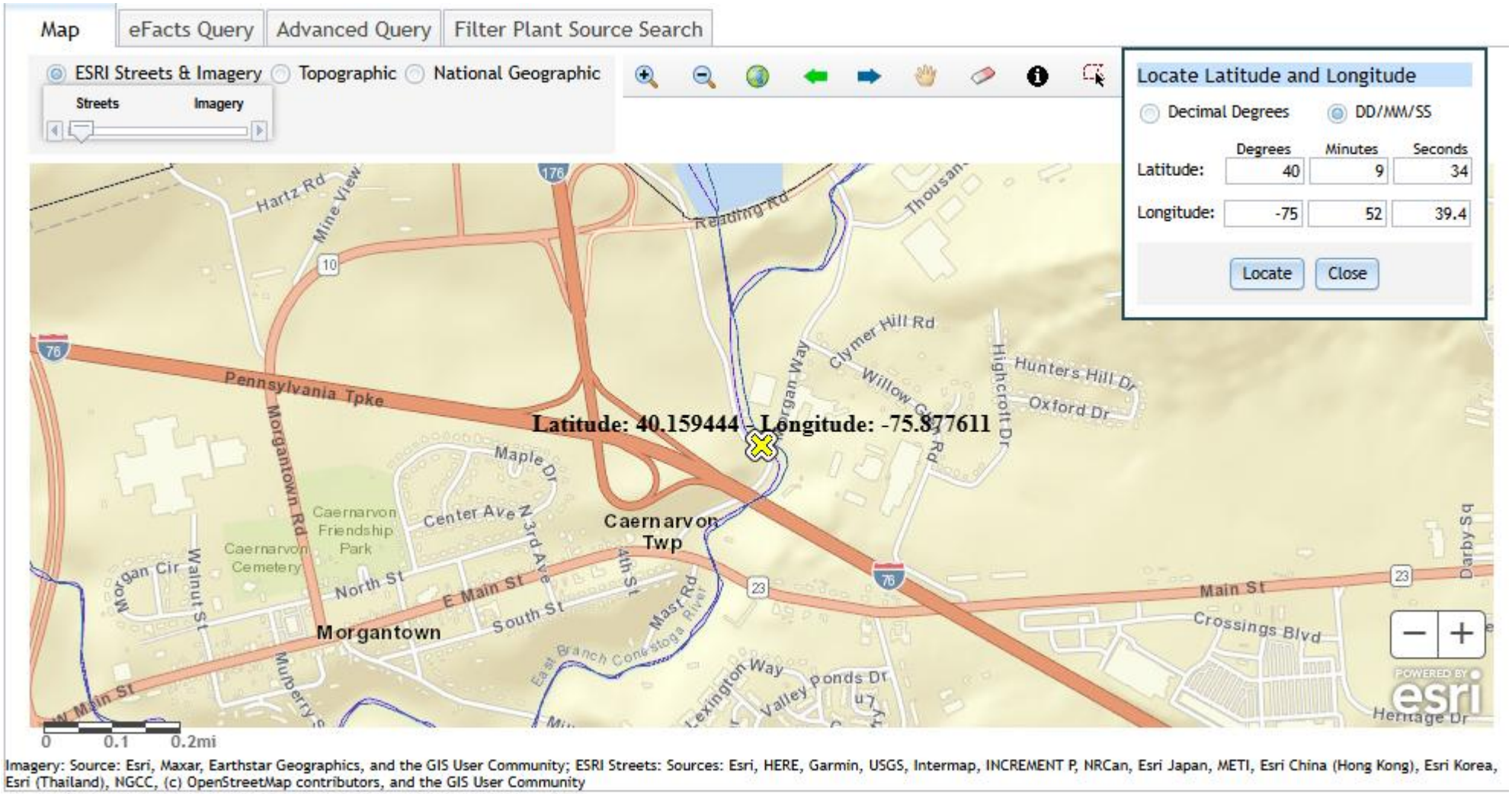
New Morgan Borough, Chester County, PA
Morgantown and Elverson Quadrangles
7.5 Min. Series Topographic
0' 2000' 4000' 6000'

Ebert Engineering, Inc.
Water and Wastewater Engineering
PO Box 540
4397 Skippack Pike
Skippack, PA 19474
Phone (610) 584 6701
Fax (610) 584 6704
E-mail febert@ebertengineering.com



DEP eFacts TP tab indicates the STP is in New Morgan Boro.


Map
eFacts Query
Advanced Query
Filter Plant Source Search
ESRI Streets & Imagery
Topographic
National Geographic
Streets
Imagery
PA Historic Streams (1 of 4)
Name: Conestoga River
Net Streams: 10366
Shed: 07J
Named: 1
Rec No: 10366
Seg ID: 7548_60.5825_61.4939
Seg ID Old: 7548_60.5841_61.4954
From Node: 97672
To Node: 98230
Down River Mile: 60.582533
Up River Mile: 61.493872
WRDS: 7548
Strahler: 3
Zoom to
Quarry Rd
176
Willow Grove Rd
Hunters Hill Dr
Oxford Dr
Maple Dr
Latitude: 40.159444 Longitude: -75.877611
0
0.1
0.2mi



Shows “East Branch Conestoga River” on map for this stretch of waterway.

eFacts NHD tab of DP tab for outfall 001 SF also labels as E. Branch Conestoga River.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreadsh
Sewage Treatment Plar

Reporting Year: 2024

Facility Name: NEW MORGAN BOROUGH WWTP

Permit No.: PA0088048

Persons/EDU: 3.5

Existing Hydraulic Design Capacity:	0.2	MGD		Existing Organic Design Capacity:	400	lbs BOD5/day	
Upgrade Planned in Next 5 Years?	NO	Year:	2024	Upgrade Planned in Next 5 Years?	NO	Year:	2024
Future Hydraulic Design Capacity:		MGD		Future Organic Design Capacity:		lbs BOD5/day	

Monthly Average Flows for Past Five Years (MGD)

Month	2020	2021	2022	2023	2024
January	0.01184	0.009	0.00718	0.01077	0.00969
February	0.01255	0.00949	0.01087	0.00637	0.00599
March	0.01251	0.01288	0.00944	0.00707	0.00711
April	0.01217	0.00574	0.00859	0.00713	0.00811
May	0.01072	0.0055	0.01196	0.00518	0.00544
June	0.00925	0.00593	0.00941	0.00694	0.00615
July	0.00784	0.0055	0.00976	0.00698	0.00441
August	0.00808	0.00682	0.00957	0.00598	0.00617
September	0.00779	0.00765	0.01313	0.00802	0.00421
October	0.00813	0.00761	0.01022	0.00422	0.01003
November	0.00696	0.0065	0.00925	0.00519	0.02143
December	0.00738	0.00605	0.01291	0.00975	0.02059
Annual Avg	0.009602	0.007387	0.01019	0.008965	0.00911
Max 3-Mo Avg	0.012407	0.010455	0.010972	0.010975	0.01735
Max : Avg Ratio	1.29	1.42	1.08	1.58	1.90
Existing EDUs	90.0	92.0	92.0	92.0	92.0
Flow/EDU (GPD)	106.7	80.3	110.8	75.7	99.0
Flow/Capita (GPD)	30.5	22.9	31.6	21.6	28.3
Exist. Overload?	NO	NO	NO	NO	NO

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2020	2021	2022	2023	2024
January	23	39	37	23	12
February	31	75	29	16	22
March	25	22	34	15	10
April	27	13	29	12	10
May	18	30	31	8	9
June	12	18	36	10	12
July	13	65	30	6	9
August	8	46	14	9	5
September	15	15	12	17	5
October	16	18	17	6	13
November	33	41	21	11	25
December	22	17	29	17	44
Annual Avg	20	33	27	13	15
Max Mo Avg	33	75	37	23	44
Max : Avg Ratio	1.63	2.26	1.39	1.84	3.00
Existing EDUs	90	92	92	92	92
Load/EDU	0.225	0.361	0.289	0.136	0.159
Load/Capita	0.064	0.103	0.083	0.039	0.046
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

	2025	2026	2027	2028	2029
New EDUs	25.0	153.0	125.0	100.0	125.0
New EDU Flow	0.0024	0.0145	0.0118	0.0094	0.0118
Proj. Annual Avg	0.01105	0.02555	0.03735	0.04675	0.05855
Proj. Max 3-Mo Avg	0.01606	0.03712	0.05427	0.06792	0.08507
Proj. Overload?	NO	NO	NO	NO	NO

Projected BOD5 Loads for Next Five Years (lbs/day)

	2025	2026	2027	2028	2029
New EDUs	25	153	125	100	125
New EDU Load	5.853	35.822	29.266	23.413	29.266
Proj. Annual Avg	27	63	92	116	145
Proj. Max Avg	55	128	187	234	294
Proj. Overload?	NO	NO	NO	NO	NO

MONITORING	MONITORING	OUTFALL	PARAMETE	LOAD_UNITS	LOAD_1_VA	LOAD_1_	LOAD_1_SB	LOAD_2_VA	LOAD_2_	LOAD_2_SI	SAMPLE_FI	SAMPLE_TYPE
6/1/2022	6/30/2022	001	Flow	MGD	0.009409	Monitor a	Average Mor	0.020869	Monitor	Daily Maxi	Continuou	Measured
7/1/2022	7/31/2022	001	Flow	MGD	0.009758	Monitor a	Average Mor	0.029191	Monitor	Daily Maxi	Continuou	Measured
8/1/2022	8/31/2022	001	Flow	MGD	0.009571	Monitor a	Average Mor	0.016935	Monitor	Daily Maxi	Continuou	Measured
9/1/2022	9/30/2022	001	Flow	MGD	0.013129	Monitor a	Average Mor	0.1313	Monitor	Daily Maxi	Continuou	Measured
10/1/2022	10/31/2022	001	Flow	MGD	0.010216	Monitor a	Average Mor	0.026626	Monitor	Daily Maxi	Continuou	Measured
11/1/2022	11/30/2022	001	Flow	MGD	0.009247	Monitor a	Average Mor	0.025939	Monitor	Daily Maxi	Continuou	Measured
12/1/2022	12/31/2022	001	Flow	MGD	0.012911	Monitor a	Average Mor	0.053035	Monitor	Daily Maxi	Continuou	Measured
1/1/2023	1/31/2023	001	Flow	MGD	0.010766	Monitor a	Average Mor	0.027668	Monitor	Daily Maxi	Continuou	Measured
2/1/2023	2/28/2023	001	Flow	MGD	0.006366	Monitor a	Average Mor	0.012252	Monitor	Daily Maxi	Continuou	Measured
3/1/2023	3/31/2023	001	Flow	MGD	0.007065	Monitor a	Average Mor	0.016391	Monitor	Daily Maxi	Continuou	Measured
4/1/2023	4/30/2023	001	Flow	MGD	0.007129	Monitor a	Average Mor	0.036298	Monitor	Daily Maxi	Continuou	Measured
5/1/2023	5/31/2023	001	Flow	MGD	0.005184	Monitor a	Average Mor	0.007678	Monitor	Daily Maxi	Continuou	Measured
6/1/2023	6/30/2023	001	Flow	MGD	0.006939	Monitor a	Average Mor	0.019471	Monitor	Daily Maxi	Continuou	Measured
7/1/2023	7/31/2023	001	Flow	MGD	0.00698	Monitor a	Average Mor	0.031236	Monitor	Daily Maxi	Continuou	Measured
8/1/2023	8/31/2023	001	Flow	MGD	0.005978	Monitor a	Average Mor	0.012866	Monitor	Daily Maxi	Continuou	Measured
9/1/2023	9/30/2023	001	Flow	MGD	0.008016	Monitor a	Average Mor	0.031924	Monitor	Daily Maxi	Continuou	Measured
10/1/2023	10/31/2023	001	Flow	MGD	0.004222	Monitor a	Average Mor	0.019931	Monitor	Daily Maxi	Continuou	Measured
11/1/2023	11/30/2023	001	Flow	MGD	0.005187	Monitor a	Average Mor	0.021717	Monitor	Daily Maxi	Continuou	Measured
12/1/2023	12/31/2023	001	Flow	MGD	0.009745	Monitor a	Average Mor	0.053703	Monitor	Daily Maxi	Continuou	Measured
1/1/2024	1/31/2024	001	Flow	MGD	0.009686	Monitor a	Average Mor	0.045327	Monitor	Daily Maxi	Continuou	Measured
2/1/2024	2/29/2024	001	Flow	MGD	0.005997	Monitor a	Average Mor	0.012613	Monitor	Daily Maxi	Continuou	Measured
3/1/2024	3/31/2024	001	Flow	MGD	0.007108	Monitor a	Average Mor	0.028375	Monitor	Daily Maxi	Continuou	Measured
4/1/2024	4/30/2024	001	Flow	MGD	0.008111	Monitor a	Average Mor	0.049187	Monitor	Daily Maxi	Continuou	Measured
5/1/2024	5/31/2024	001	Flow	MGD	0.005436	Monitor a	Average Mor	0.016104	Monitor	Daily Maxi	Continuou	Measured
6/1/2024	6/30/2024	001	Flow	MGD	0.006145	Monitor a	Average Mor	0.060159	Monitor	Daily Maxi	Continuou	Measured
7/1/2024	7/31/2024	001	Flow	MGD	0.004414	Monitor a	Average Mor	0.013368	Monitor	Daily Maxi	Continuou	Measured
8/1/2024	8/31/2024	001	Flow	MGD	0.006373	Monitor a	Average Mor	0.038561	Monitor	Daily Maxi	Continuou	Measured
9/1/2024	9/30/2024	001	Flow	MGD	0.004208	Monitor a	Average Mor	0.01034	Monitor	Daily Maxi	Continuou	Measured
10/1/2024	10/31/2024	001	Flow	MGD	0.010033	Monitor a	Average Mor	0.040302	Monitor	Daily Maxi	Continuou	Measured
11/1/2024	11/30/2024	001	Flow	MGD	0.02205	Monitor a	Average Mor	0.04005	Monitor	Daily Maxi	Continuou	Measured
12/1/2024	12/31/2024	001	Flow	MGD	0.020596	Monitor a	Average Mor	0.046535	Monitor	Daily Maxi	Continuou	Measured
1/1/2025	1/31/2025	001	Flow	MGD	0.018051	Monitor a	Average Mor	0.026994	Monitor	Daily Maxi	Continuou	Measured
2/1/2025	2/28/2025	001	Flow	MGD	0.019667	Monitor a	Average Mor	0.0356	Monitor	Daily Maxi	Continuou	Measured
3/1/2025	3/31/2025	001	Flow	MGD	0.016611	Monitor a	Average Mor	0.043246	Monitor	Daily Maxi	Continuou	Measured
4/1/2025	4/30/2025	001	Flow	MGD	0.006403	Monitor a	Average Mor	0.02704	Monitor	Daily Maxi	Continuou	Measured
5/1/2025	5/31/2025	001	Flow	MGD	0.009525	Monitor a	Average Mor	0.028422	Monitor	Daily Maxi	Continuou	Measured
6/1/2025	6/30/2025	001	Flow	MGD	0.006359	Monitor a	Average Mor	0.016913	Monitor	Daily Maxi	Continuou	Measured
7/1/2025	7/31/2025	001	Flow	MGD	0.007098	Monitor a	Average Mor	0.01692	Monitor	Daily Maxi	Continuou	Measured
					0.009255	Avg		0.1313	Max			
					0.02205	Max		0.0503	90th percentile			
					0.01704	90th percentile						

MONITORING	MONITORING	OUTFALL	PARAMETER	LOAD_UNITS	LOAD_1_VA	LOAD_1_LI	LOAD_1_S	LOAD_2_V	LOAD_2_L	LOAD_2_S	CONC_UNITS		CONC_2_VALUE	CONC_2	CONC_2_	CONC_3_V	SAMPLE_F	SAMPLE_TYPE
6/1/2022	6/30/2022	001	Total Nitrogen								mg/L	<	37.72	Monitor	Average Monthly		1/week	Calculation
7/1/2022	7/31/2022	001	Total Nitrogen								mg/L		40.27	Monitor	Average Monthly		1/week	Calculation
8/1/2022	8/31/2022	001	Total Nitrogen								mg/L	<	35.58	Monitor	Average Monthly		1/week	Calculation
9/1/2022	9/30/2022	001	Total Nitrogen								mg/L	<	31.32	Monitor	Average Monthly		1/week	Calculation
10/1/2022	10/31/2022	001	Total Nitrogen								mg/L	<	36.16	Monitor	Average Monthly		1/week	Calculation
11/1/2022	11/30/2022	001	Total Nitrogen								mg/L	<	31.89	Monitor	Average Monthly		1/week	Calculation
12/1/2022	12/31/2022	001	Total Nitrogen								mg/L	<	28.5	Monitor	Average Monthly		1/week	Calculation
1/1/2023	1/31/2023	001	Total Nitrogen								mg/L	<	34.16	Monitor	Average Monthly		1/week	Calculation
2/1/2023	2/28/2023	001	Total Nitrogen								mg/L	<	43.79	Monitor	Average Monthly		1/week	Calculation
3/1/2023	3/31/2023	001	Total Nitrogen								mg/L	<	48.13	Monitor	Average Monthly		1/week	Calculation
4/1/2023	4/30/2023	001	Total Nitrogen								mg/L	<	65.63	Monitor	Average Monthly		1/week	Calculation
5/1/2023	5/31/2023	001	Total Nitrogen								mg/L	<	56.49	Monitor	Average Monthly		1/week	Calculation
6/1/2023	6/30/2023	001	Total Nitrogen								mg/L	<	62.72	Monitor	Average Monthly		1/week	Calculation
7/1/2023	7/31/2023	001	Total Nitrogen								mg/L	<	59.58	Monitor	Average Monthly		1/week	Calculation
8/1/2023	8/31/2023	001	Total Nitrogen								mg/L	<	49.47	Monitor	Average Monthly		1/week	Calculation
9/1/2023	9/30/2023	001	Total Nitrogen								mg/L	<	43.16	Monitor	Average Monthly		1/week	Calculation
10/1/2023	10/31/2023	001	Total Nitrogen								mg/L	<	48	Monitor	Average Monthly		1/week	Calculation
11/1/2023	11/30/2023	001	Total Nitrogen								mg/L	<	54.96	Monitor	Average Monthly		1/week	Calculation
12/1/2023	12/31/2023	001	Total Nitrogen								mg/L	<	34.98	Monitor	Average Monthly		1/week	Calculation
1/1/2024	1/31/2024	001	Total Nitrogen								mg/L	<	31.5	Monitor	Average Monthly		1/week	Calculation
2/1/2024	2/29/2024	001	Total Nitrogen								mg/L	<	45.7	Monitor	Average Monthly		1/week	Calculation
3/1/2024	3/31/2024	001	Total Nitrogen								mg/L	<	37.1	Monitor	Average Monthly		1/week	Calculation
4/1/2024	4/30/2024	001	Total Nitrogen								mg/L	<	10.52	Monitor	Average Monthly		1/week	Calculation
5/1/2024	5/31/2024	001	Total Nitrogen								mg/L	<	3.06	Monitor	Average Monthly		1/month	Calculation
6/1/2024	6/30/2024	001	Total Nitrogen								mg/L	<	2.66	Monitor	Average Monthly		1/week	Calculation
7/1/2024	7/31/2024	001	Total Nitrogen								mg/L	<	38.97	Monitor	Average Monthly		1/week	Calculation
8/1/2024	8/31/2024	001	Total Nitrogen								mg/L	<	36.8	Monitor	Average Monthly		1/week	Calculation
9/1/2024	9/30/2024	001	Total Nitrogen								mg/L	<	46.26	Monitor	Average Monthly		1/week	Calculation
10/1/2024	10/31/2024	001	Total Nitrogen								mg/L	<	55.2	Monitor	Average Monthly		1/week	Calculation
11/1/2024	11/30/2024	001	Total Nitrogen								mg/L	<	42.98	Monitor	Average Monthly		1/week	Calculation
12/1/2024	12/31/2024	001	Total Nitrogen								mg/L		36.8	Monitor	Average Monthly		1/week	Calculation
1/1/2025	1/31/2025	001	Total Nitrogen								mg/L	<	46.14	Monitor	Average Monthly		1/week	Calculation
2/1/2025	2/28/2025	001	Total Nitrogen								mg/L	<	46.2	Monitor	Average Monthly		1/week	Calculation
3/1/2025	3/31/2025	001	Total Nitrogen								mg/L	<	44.5	Monitor	Average Monthly		1/week	Calculation
4/1/2025	4/30/2025	001	Total Nitrogen								mg/L	<	46.13	Monitor	Average Monthly		1/week	Calculation
5/1/2025	5/31/2025	001	Total Nitrogen								mg/L		29.13	Monitor	Average Monthly		1/week	Calculation
6/1/2025	6/30/2025	001	Total Nitrogen								mg/L	<	50.3	Monitor	Average Monthly		1/week	Calculation
7/1/2025	7/31/2025	001	Total Nitrogen								mg/L	<	43.9	Monitor	Average Monthly		1/week	Calculation
													40.43	Average				
													65.63	Maximum				

MONITORINC	MONITORIN(	OUTFALL	PARAMETER	LOAD_UNITS		LOAD_1_V/	LOAD_1_L	LOAD_1_S	LOAD_2_V	LOAD_2_L	LOAD_2_S	CONC_UN	CONC_1_'	CONC_1_	CONC_1_SBC		CONC_2_'	CONC_2_	CONC_2_	CONC_3_\	SAMPLE_F	SAMPLE_TYPE
6/1/2022	6/30/2022	001	Total Phosphorus	lbs/day		0.05	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
7/1/2022	7/31/2022	001	Total Phosphorus	lbs/day		0.03	3.3	Average Monthly				mg/L					0.3	2	Average Monthly		1/week	24-Hr Composite
8/1/2022	8/31/2022	001	Total Phosphorus	lbs/day		0.06	3.3	Average Monthly				mg/L					0.5	2	Average Monthly		1/week	24-Hr Composite
9/1/2022	9/30/2022	001	Total Phosphorus	lbs/day		0.01	3.3	Average Monthly				mg/L					0.2	2	Average Monthly		1/week	24-Hr Composite
10/1/2022	10/31/2022	001	Total Phosphorus	lbs/day		0.05	3.3	Average Monthly				mg/L					0.3	2	Average Monthly		1/week	24-Hr Composite
11/1/2022	11/30/2022	001	Total Phosphorus	lbs/day	<	0.005	3.3	Average Monthly				mg/L				<	0.1	2	Average Monthly		1/week	24-Hr Composite
12/1/2022	12/31/2022	001	Total Phosphorus	lbs/day		0.1	3.3	Average Monthly				mg/L					0.5	2	Average Monthly		1/week	24-Hr Composite
1/1/2023	1/31/2023	001	Total Phosphorus	lbs/day		0.03	3.3	Average Monthly				mg/L					0.3	2	Average Monthly		1/week	24-Hr Composite
2/1/2023	2/28/2023	001	Total Phosphorus	lbs/day		0.01	3.3	Average Monthly				mg/L					0.2	2	Average Monthly		1/week	24-Hr Composite
3/1/2023	3/31/2023	001	Total Phosphorus	lbs/day		0.02	3.3	Average Monthly				mg/L					0.2	2	Average Monthly		1/week	24-Hr Composite
4/1/2023	4/30/2023	001	Total Phosphorus	lbs/day		0.03	3.3	Average Monthly				mg/L					0.5	2	Average Monthly		1/week	24-Hr Composite
5/1/2023	5/31/2023	001	Total Phosphorus	lbs/day		0.02	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
6/1/2023	6/30/2023	001	Total Phosphorus	lbs/day		0.02	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
7/1/2023	7/31/2023	001	Total Phosphorus	lbs/day		0.02	3.3	Average Monthly				mg/L					0.3	2	Average Monthly		1/week	24-Hr Composite
8/1/2023	8/31/2023	001	Total Phosphorus	lbs/day		0.04	3.3	Average Monthly				mg/L					0.7	2	Average Monthly		1/week	24-Hr Composite
9/1/2023	9/30/2023	001	Total Phosphorus	lbs/day		0.03	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
10/1/2023	10/31/2023	001	Total Phosphorus	lbs/day		0.02	3.3	Average Monthly				mg/L					0.6	2	Average Monthly		1/week	24-Hr Composite
11/1/2023	11/30/2023	001	Total Phosphorus	lbs/day		0.02	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
12/1/2023	12/31/2023	001	Total Phosphorus	lbs/day		0.02	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
1/1/2024	1/31/2024	001	Total Phosphorus	lbs/day		0.03	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
2/1/2024	2/29/2024	001	Total Phosphorus	lbs/day		0.04	3.3	Average Monthly				mg/L					0.9	2	Average Monthly		1/week	24-Hr Composite
3/1/2024	3/31/2024	001	Total Phosphorus	lbs/day		0.02	3.3	Average Monthly				mg/L					0.5	2	Average Monthly		1/week	24-Hr Composite
4/1/2024	4/30/2024	001	Total Phosphorus	lbs/day		0.02	3.3	Average Monthly				mg/L					0.3	2	Average Monthly		1/week	24-Hr Composite
5/1/2024	5/31/2024	001	Total Phosphorus	lbs/day		0.01	3.3	Average Monthly				mg/L					0.3	2	Average Monthly		1/week	24-Hr Composite
6/1/2024	6/30/2024	001	Total Phosphorus	lbs/day		0.007	3.3	Average Monthly				mg/L					0.2	2	Average Monthly		1/week	24-Hr Composite
7/1/2024	7/31/2024	001	Total Phosphorus	lbs/day		0.006	3.3	Average Monthly				mg/L					0.2	2	Average Monthly		1/week	24-Hr Composite
8/1/2024	8/31/2024	001	Total Phosphorus	lbs/day		0.04	3.3	Average Monthly				mg/L					0.6	2	Average Monthly		1/week	24-Hr Composite
9/1/2024	9/30/2024	001	Total Phosphorus	lbs/day		0.02	3.3	Average Monthly				mg/L					0.8	2	Average Monthly		1/week	24-Hr Composite
10/1/2024	10/31/2024	001	Total Phosphorus	lbs/day		0.05	3.3	Average Monthly				mg/L					0.8	2	Average Monthly		1/week	24-Hr Composite
11/1/2024	11/30/2024	001	Total Phosphorus	lbs/day		0.08	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
12/1/2024	12/31/2024	001	Total Phosphorus	lbs/day		0.08	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
1/1/2025	1/31/2025	001	Total Phosphorus	lbs/day		0.2	3.3	Average Monthly				mg/L					0.9	2	Average Monthly		1/week	24-Hr Composite
2/1/2025	2/28/2025	001	Total Phosphorus	lbs/day		0.1	3.3	Average Monthly				mg/L					0.6	2	Average Monthly		1/week	24-Hr Composite
3/1/2025	3/31/2025	001	Total Phosphorus	lbs/day		0.007	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
4/1/2025	4/30/2025	001	Total Phosphorus	lbs/day		0.04	3.3	Average Monthly				mg/L					0.5	2	Average Monthly		1/week	24-Hr Composite
5/1/2025	5/31/2025	001	Total Phosphorus	lbs/day		0.05	3.3	Average Monthly				mg/L					0.4	2	Average Monthly		1/week	24-Hr Composite
6/1/2025	6/30/2025	001	Total Phosphorus	lbs/day		0.04	3.3	Average Monthly				mg/L					0.6	2	Average Monthly		1/week	24-Hr Composite
7/1/2025	7/31/2025	001	Total Phosphorus	lbs/day		0.05	3.3	Average Monthly				mg/L					0.8	2	Average Monthly		1/week	24-Hr Composite
						0.0388	Avg										0.45	Avg				
																	0.9	Max				

Outfall 001:

StreamStats Output Report					
State/Region ID	PA				
Workspace ID	PA20250828120546609000				
Latitude	40.15933				
Longitude	-75.87746				
Time	8/28/2025	8:06:08 AM			
Basin Characteristics					
Parameter Code	Parameter De	Value	Unit		
BSLOPD	Mean basin sl	3.8148	degrees		
DRNAREA	Area that drai	6.66	square miles		
ROCKDEP	Depth to rock	4.9	feet		
URBAN	Percentage of	3.9582	percent		
Low-Flow Statistics Pa	100.0 Percent	Low Flow Region 1			
Parameter Code	Parameter Na	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Sl	3.8148	degrees	1.7	6.4
DRNAREA	Drainage Area	6.66	square mil	4.78	1150
ROCKDEP	Depth to Rock	4.9	feet	4.13	5.21
URBAN	Percent Urbar	3.9582	percent	0	89
Low-Flow Statistics Flo	100.0 Percent	Low Flow Region 1			
Statistic	Value	Unit	SE	ASEp	
7 Day 2 Year Low Flow	1.26	ft^3/s	46	46	
30 Day 2 Year Low Flow	1.68	ft^3/s	38	38	
7 Day 10 Year Low Flow	0.562	ft^3/s	51	51	
30 Day 10 Year Low Flo	0.771	ft^3/s	46	46	
90 Day 10 Year Low Flo	1.29	ft^3/s	41	41	
USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards					
USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software ha					
USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorse					
Application Version: 4.29.2					
StreamStats Services Version: 1.2.22					
NSS Services Version: 2.2.1					

downstream…..

StreamStats Output Report						
State/Region ID	PA					
Workspace ID	PA20250828122711232000					
Latitude	40.14867					
Longitude	-75.88077					
Time	8/28/2025	8:27:33 AM				
Basin Characteristics						
Parameter Code	Parameter De	Value	Unit			
BSLOPD	Mean basin sl	4.02	degrees			
DRNAREA	Area that drai	11.5	square miles			
ROCKDEP	Depth to rock	4.9	feet			
URBAN	Percentage of	7.2323	percent			
Low-Flow Statistics Para	100.0 Percent Low Flow Region 1					
Parameter Code	Parameter Nai	Value	Units	Min Limit	Max Limit	
BSLOPD	Mean Basin Sl	4.02	degrees	1.7	6.4	
DRNAREA	Drainage Area	11.5	square mil	4.78	1150	
ROCKDEP	Depth to Rock	4.9	feet	4.13	5.21	
URBAN	Percent Urbar	7.2323	percent	0	89	
Low-Flow Statistics Flov	100.0 Percent Low Flow Region 1					
Statistic	Value	Unit	SE	ASEp		
7 Day 2 Year Low Flow	2.49	ft^3/s	46	46		
30 Day 2 Year Low Flow	3.26	ft^3/s	38	38		
7 Day 10 Year Low Flow	1.18	ft^3/s	51	51		
30 Day 10 Year Low Flow	1.57	ft^3/s	46	46		
90 Day 10 Year Low Flow	2.53	ft^3/s	41	41		
USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to						
USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (US						
USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only						
Application Version: 4.29.2						
StreamStats Services Version: 1.2.22						
NSS Services Version: 2.2.1						

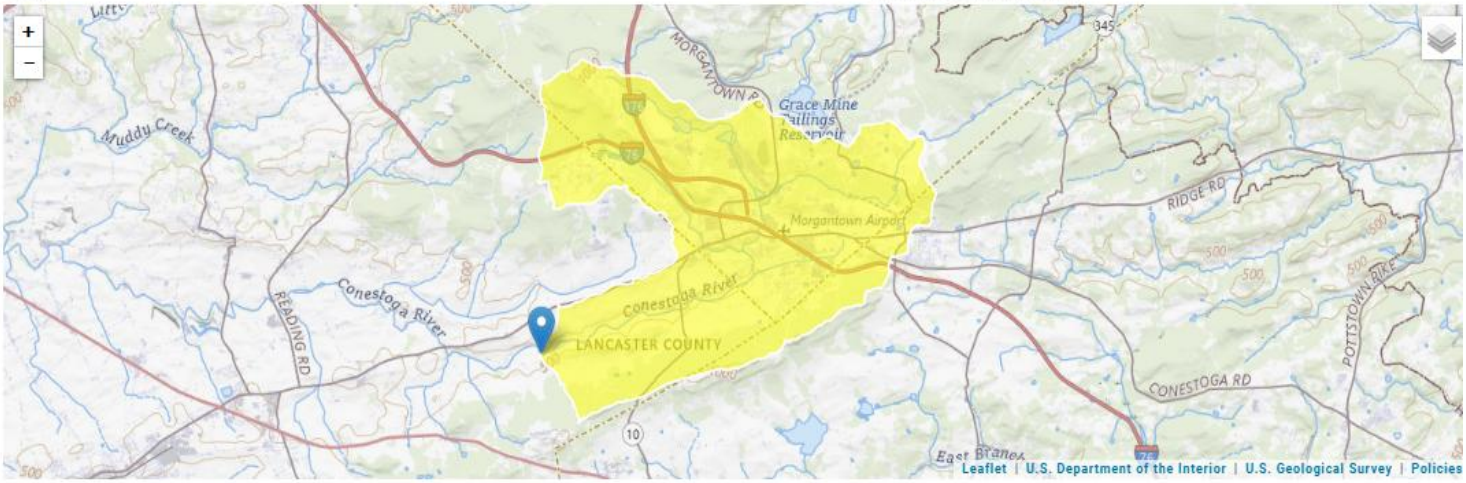
Further downstream on Conestoga River at Caernarvon STP, RMI 58.1:

StreamStats Output Report						
State/Region ID	PA					
Workspace ID	PA20250828130833343000					
Latitude	40.14611					
Longitude	-75.8827					
Time	8/28/2025	9:08:56 AM				
Basin Characteristics						
Parameter Code	Parameter Desc	Value	Unit			
BSLOPD	Mean basin slop	4.088	degrees			
DRNAREA	Area that drains	14.7	square miles			
ROCKDEP	Depth to rock	4.9	feet			
URBAN	Percentage of b	6.6204	percent			
Low-Flow Statistics Param	100.0 Percent Low Flow Region 1					
Parameter Code	Parameter Nam	Value	Units	Min Limit	Max Limit	
BSLOPD	Mean Basin Slo	4.088	degrees	1.7	6.4	
DRNAREA	Drainage Area	14.7	square mil	4.78	1150	
ROCKDEP	Depth to Rock	4.9	feet	4.13	5.21	
URBAN	Percent Urban	6.6204	percent	0	89	
Low-Flow Statistics Flow R	100.0 Percent Low Flow Region 1					
Statistic	Value	Unit	SE	ASEp		
7 Day 2 Year Low Flow	3.22	ft^3/s	46	46		
30 Day 2 Year Low Flow	4.2	ft^3/s	38	38		
7 Day 10 Year Low Flow	1.54	ft^3/s	51	51		
30 Day 10 Year Low Flow	2.05	ft^3/s	46	46		
90 Day 10 Year Low Flow	3.26	ft^3/s	41	41		
USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the p						
USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjecte						
USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S.						
Application Version: 4.29.2						
StreamStats Services Version: 1.2.22						
NSS Services Version: 2.2.1						

Next node downstream of Caernarvon STP per eMapPA, RMI 55.83, elev 455' approx.:

StreamStats Report

Region ID:	PA
Workspace ID:	PA20250828143325793000
Clicked Point (Latitude, Longitude):	40.13013, -75.94720
Time:	2025-08-28 10:33:49 -0400



Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	4.3475	degrees	1.7	6.4
DRNAREA	Drainage Area	20.7	square miles	4.78	1150
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	4.7975	percent	0	89

Low-Flow Statistics Flow Report [Low Flow Region 1]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	5.18	ft^3/s	46	46
30 Day 2 Year Low Flow	6.56	ft^3/s	38	38
7 Day 10 Year Low Flow	2.6	ft^3/s	51	51
30 Day 10 Year Low Flow	3.34	ft^3/s	46	46
90 Day 10 Year Low Flow	5.06	ft^3/s	41	41

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.

Low Flow Yield = Q7-10 / Drainage Area = 2.6 cfs / 20.7 sq. mi. = 0.126 cfs/sq.mi.

WQM 7.0 model:

Input Data WQM 7.0

General Data

General | Stream | Discharge and Parameters

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	LFY (cfsm)	Slope (ft/ft)	PWS With (mgd)	Apply FC
7548	61.300	515	6.7	0.084	0	0	☑
7548	58.100	500	14.7	0.105	0	0	☑
7548	55.800	455	20.7	0.126	0	0	☑

Add Record

Delete Record

Input Data WQM 7.0

Stream Data

General | Stream | Discharge and Parameters

Design Condition ◉ Q7-10 ○ Q1-10 ○ Q30-10

RMI	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (ºC)	Tributary pH	Stream Temp (ºC)	Stream pH
61.300	0.56	0.00	0.000	0.00	0	0.00	0.00	25.00	7.00	0.000	0.00
58.100	1.54	0.00	0.000	0.00	0	0.00	0.00	25.00	7.00	0.000	0.00
55.800	2.60	0.00	0.000	0.00	0	0.00	0.00	25.00	7.00	0.000	0.00

Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

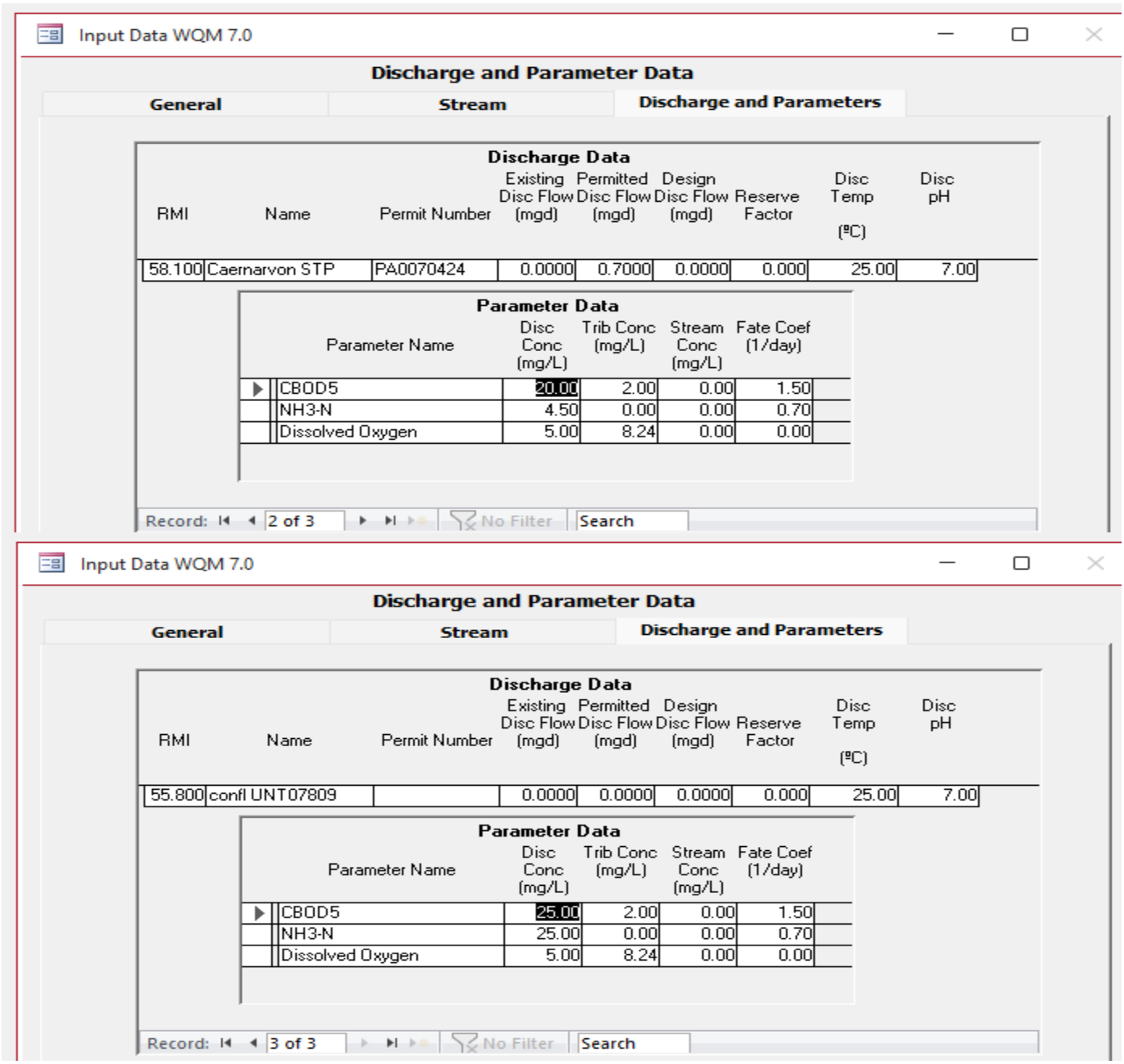
Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
61.300	New Morgan STP	PA0088048	0.0000	0.2000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	23.00	2.00	0.00	1.50
NH3-N	4.50	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 1 of 3 | No Filter | Search



Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

Discharge Data

RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
58.100	Caernarvon STP	PA0070424	0.0000	0.7000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	20.00	2.00	0.00	1.50
NH3-N	4.50	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

Record: 2 of 3 | No Filter | Search

Input Data WQM 7.0

Discharge and Parameter Data

General | Stream | Discharge and Parameters

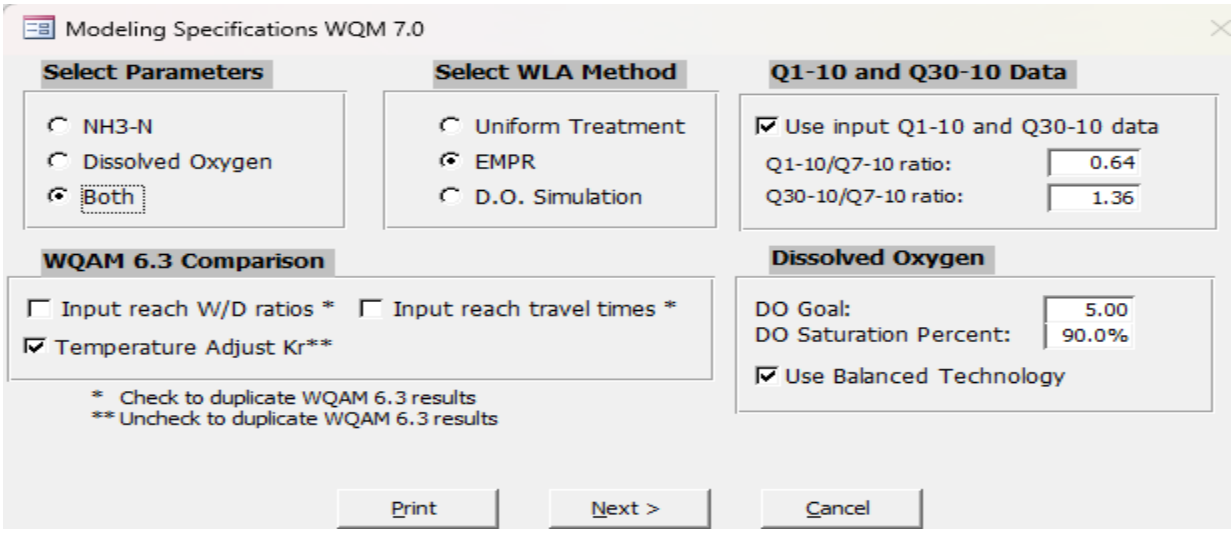
Discharge Data

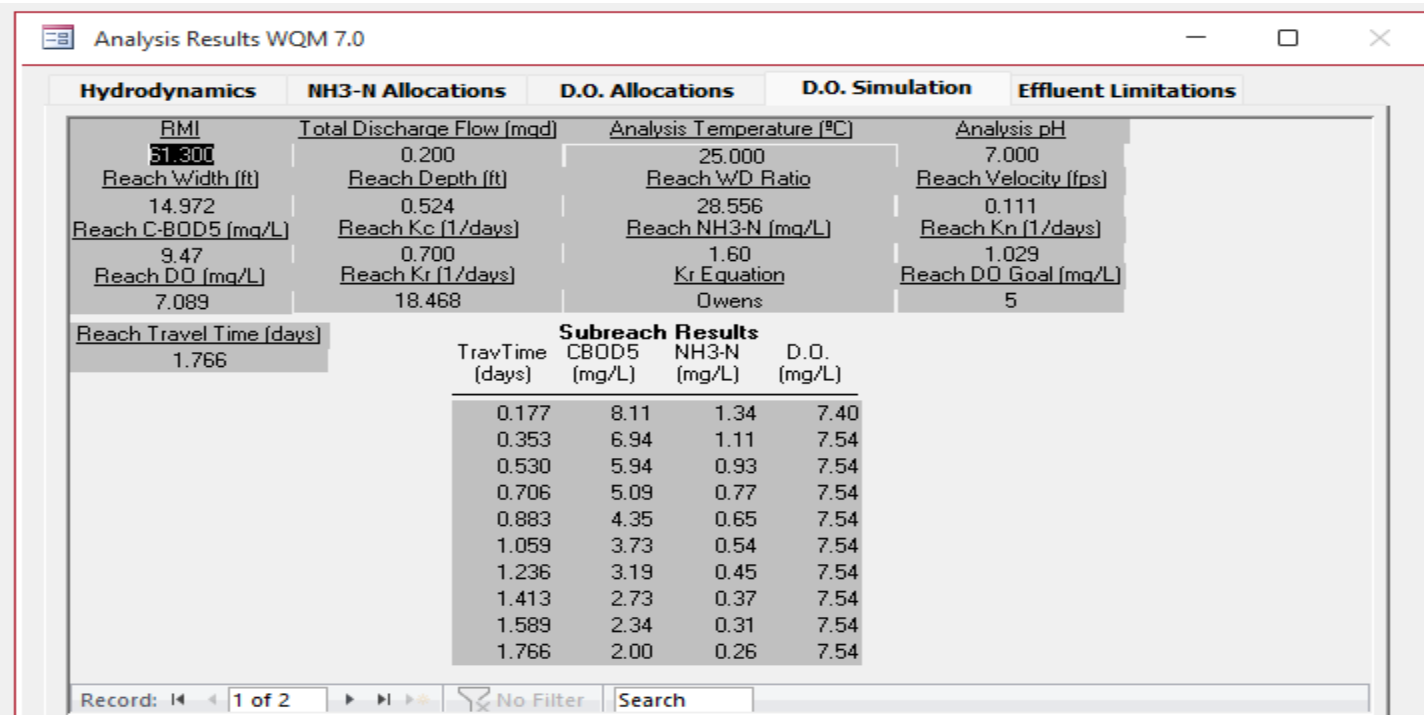
RMI	Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (ºC)	Disc pH
55.800	confl UNT07809		0.0000	0.0000	0.0000	0.000	25.00	7.00

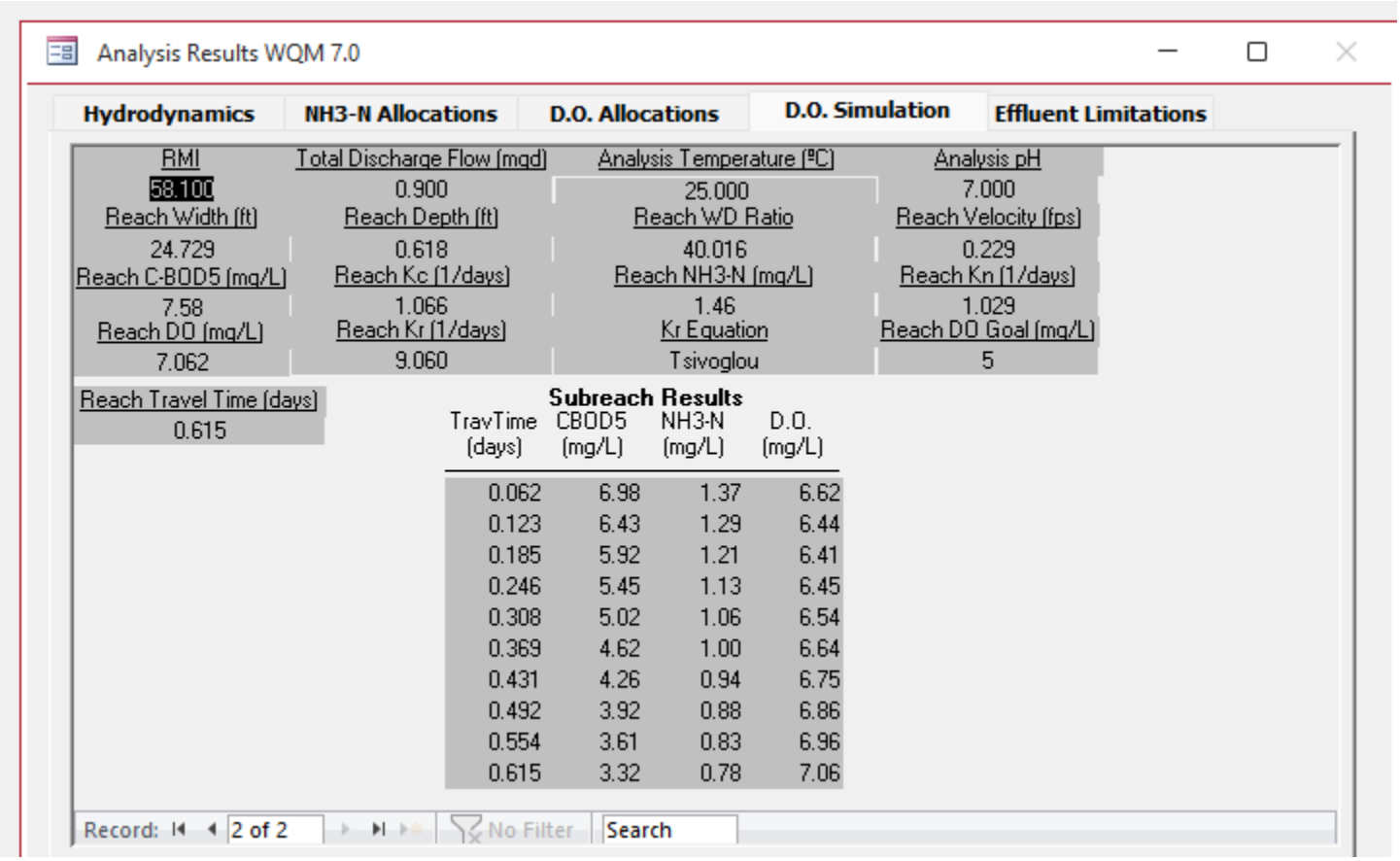
Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/day)
CBOD5	25.00	2.00	0.00	1.50
NH3-N	25.00	0.00	0.00	0.70
Dissolved Oxygen	5.00	8.24	0.00	0.00

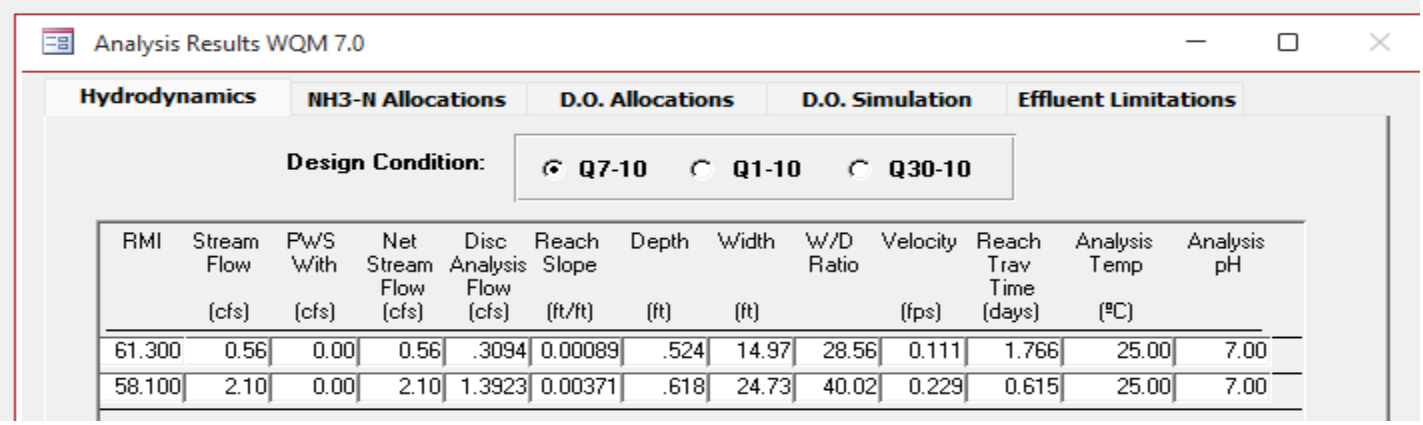
Record: 3 of 3 | No Filter | Search

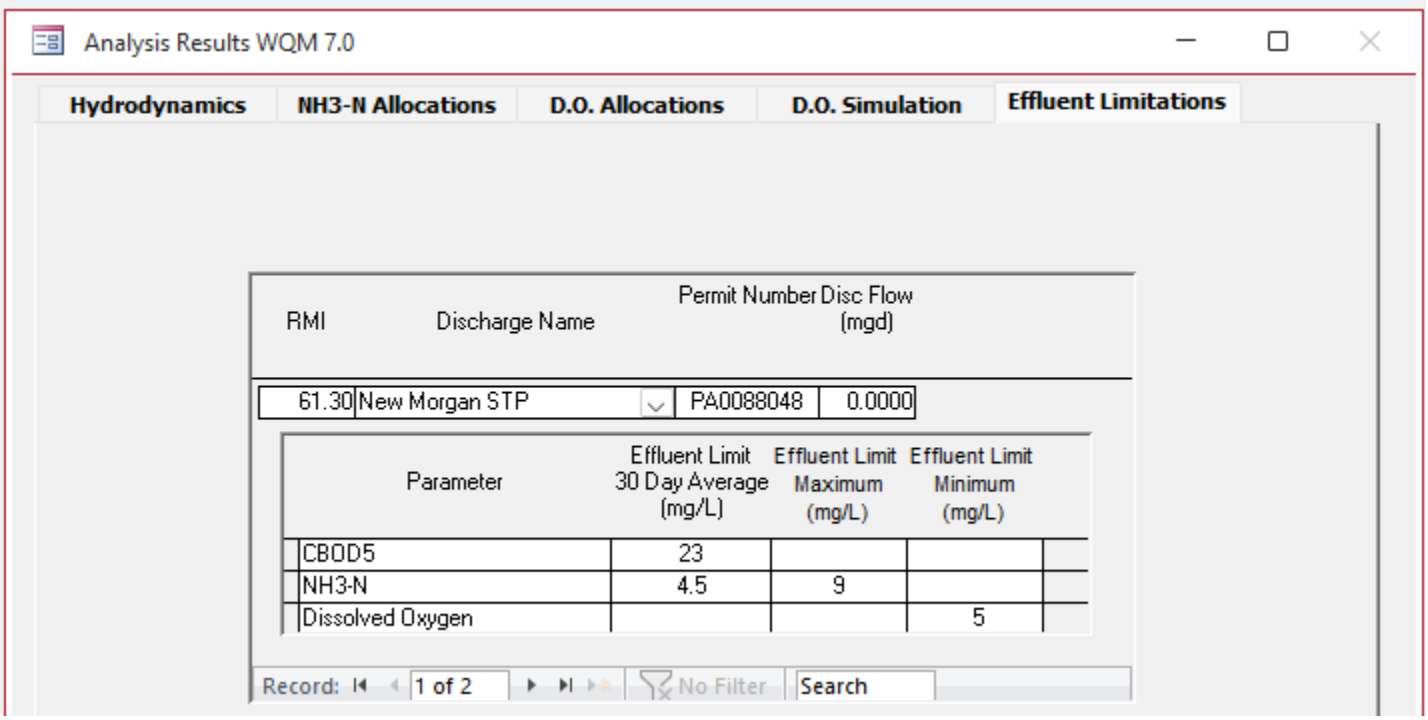

Modeling Specifications WQM 7.0
Select Parameters
NH3-N
Dissolved Oxygen
Both
Select WLA Method
Uniform Treatment
EMPR
D.O. Simulation
Q1-10 and Q30-10 Data
Use input Q1-10 and Q30-10 data
Q1-10/Q7-10 ratio: 0.64
Q30-10/Q7-10 ratio: 1.36
WQAM 6.3 Comparison
Input reach W/D ratios *
Input reach travel times *
Temperature Adjust Kr**
Dissolved Oxygen
DO Goal: 5.00
DO Saturation Percent: 90.0%
Use Balanced Technology
* Check to duplicate WQAM 6.3 results
** Uncheck to duplicate WQAM 6.3 results
Print
Next >
Cancel

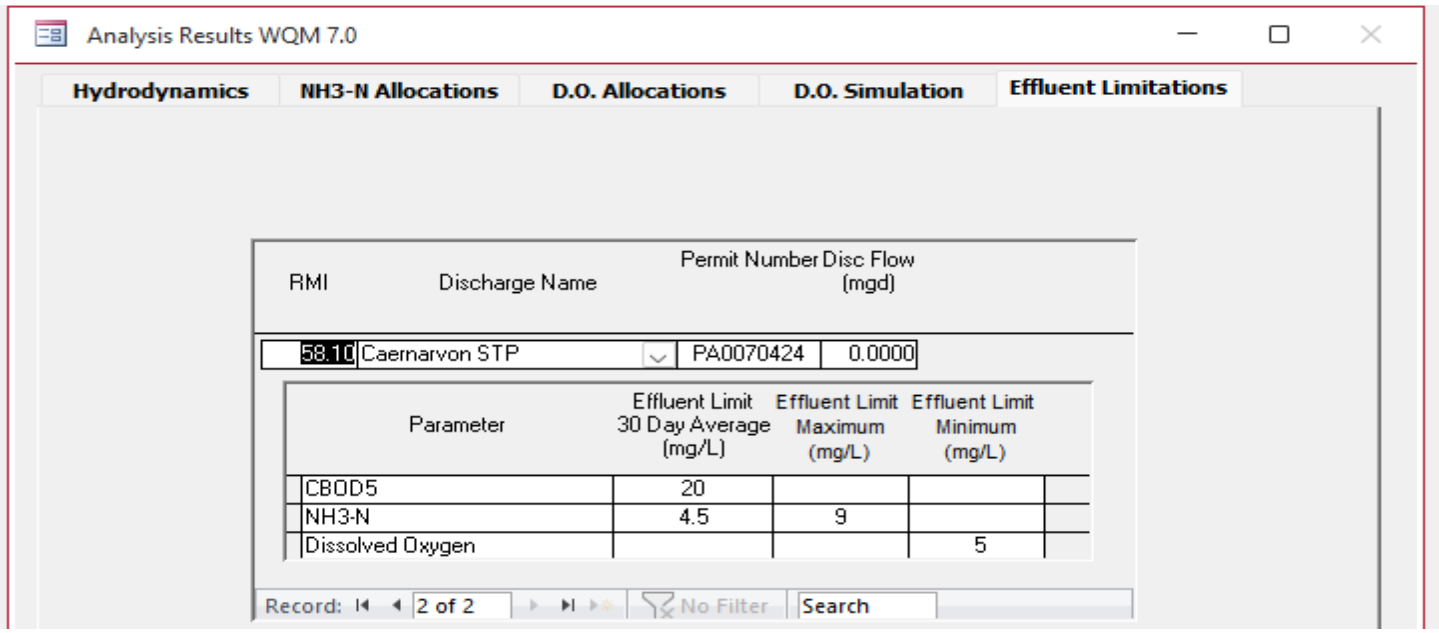

Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI 51.300
Total Discharge Flow (mgd) 0.200
Analysis Temperature (°C) 25.000
Analysis pH 7.000
Reach Width (ft) 14.972
Reach Depth (ft) 0.524
Reach WD Ratio 28.556
Reach Velocity (fps) 0.111
Reach C-BOD5 (mg/L) 9.47
Reach Kc (1/days) 0.700
Reach NH3-N (mg/L) 1.60
Reach Kn (1/days) 1.029
Reach DO (mg/L) 7.089
Reach Kr (1/days) 18.468
Kr Equation Owens
Reach DO Goal (mg/L) 5
Reach Travel Time (days) 1.766
Subreach Results
TravTime (days) CBOD5 (mg/L) NH3-N (mg/L) D.O. (mg/L)
0.177 8.11 1.34 7.40
0.353 6.94 1.11 7.54
0.530 5.94 0.93 7.54
0.706 5.09 0.77 7.54
0.883 4.35 0.65 7.54
1.059 3.73 0.54 7.54
1.236 3.19 0.45 7.54
1.413 2.73 0.37 7.54
1.589 2.34 0.31 7.54
1.766 2.00 0.26 7.54
Record: 1 of 2
No Filter
Search



DO has recovered




Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
61.30
New Morgan STP
PA0088048
0.0000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
23
NH3-N
4.5
9
Dissolved Oxygen
5
Record: 1 of 2
No Filter
Search


Analysis Results WQM 7.0
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
58.10
Caernarvon STP
PA0070424
0.0000
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
20
NH3-N
4.5
9
Dissolved Oxygen
5
Record: 2 of 2
No Filter
Search

TOXCONC, 2 years of Daily Effluent Supplemental DMR data:

	NPDES #:		PA0088048			
	Outfall No:		001			
	n (Samples/Month):		4			
	Reviewer/Permit Engineer:		B.Boylan			
Parameter Name	Total Copper	Hardness				
Units	mg/L	mg/L				
Detection Limit						
Sample Date	***When entering values below the detection limit, enter "ND" or use the < notation (eg. <0.02)***					
8/1-8/31/2024, 1 sample	0.058	108				
9/1-9/30/2024, 1 sample	0.062	115				
10/1-10/31/2024, 1 sample	0.031	130				
11/1-11/30/2024, 1 sample	0.027	102				
12/1-12/31/2024, 1 sample	0.015	106				
1/1-1/31/2025, 1 sample	0.029	105				
2/1-2/28/2025, 1 sample	0.029	150				
3/1-3/30/2025, 1 sample	0.033	146				
4/1-4/30/2025, 1 sample	0.029	109				
5/1-5/31/2025, 1 sample	0.03	120				
6/1-6/31/2025, 1 sample	0.056	88.5				
7/1-7/31/2025, 1 sample	0.037	65.4				
8/1-8/31/2023, 1 sample	0.035	85.3				
9/1-9/30/2023, 1 sample	0.08	93.9				
10/1-10/31/2023, 1 sample	0.021	102				
11/1-11/30/2023, 1 sample	0.035	113				
12/1-12/31/2023, 1 sample	0.024	87.1				
1/1-1/31/2024, 2 samples	0.024	79.7				
1/1-1/31/2024, 2 samples	0.029	80.7				
2/1-2/28/2024, 1 sample	0.032	96.7				
3/1-3/30/2024, 1 sample	0.029	89.9				
4/1-4/30/2024, 1 sample	0.024	74.9				
5/1-5/31/2024, 1 sample	0.03	120				
6/1-6/31/2024, 1 sample	0.004	83.9				
7/1-7/31/2024, 1 sample	0.04	132				

A	B	C	D	E
		Reviewer/Permit Engineer:	B.Boylan	
Facility:	New Morgan Boro STP			
NPDES #:	PA0088048			
Outfall No:	001			
n (Samples/Month):	4			
Parameter	**Distribution Applied**	**Coefficient of Variation (daily)**	**Avg. Monthly**	
Total Copper (mg/L)	Lognormal	0.5979138	0.0660851	
Hardness (mg/L)	Lognormal	0.2102820	131.3013602	

TMS using TOXCONC and 2 Years of discrete data from Supplemental DMRs (NOT using max conc. of 3 yrs' DMRs as mislabeled below):

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Discharge Information

Instructions | Discharge | Stream

Facility: **Max dischg conc. of 3 yrs DMRs** NPDES Permit No.: **PA0088048** Outfall No.: **001**

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

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
0.2	131	7						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	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	mg/L		0.0661			0.598						
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Stream / Surface Water Information

Max dischg conc. of 3 yrs DMRs, NPDES Permit No. PA0088048, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **E.Br.Conestoga River**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	007548	61.3	515	6.7			Yes
End of Reach 1	007548	60.1	505	11.5			Yes

$Q_{7\text{-}10}$

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	61.3	0.084	0.56									100	7		
End of Reach 1	60.1	0.103	1.2												

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	61.3														
End of Reach 1	60.1														

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2025

Model Results

Max dischg conc. of 3 yrs DMRs, NPDES Permit No. PA0088048, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 8.254 PMF: 1 Analysis Hardness (mg/l): 111.03 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	14.832	15.4	43.4	Chem Translator of 0.96 applied

☑ ***CFC*** CCT (min): 8.254 PMF: 1 Analysis Hardness (mg/l): 111.03 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	9.794	10.2	28.7	Chem Translator of 0.96 applied

☑ ***THH*** CCT (min): 8.254 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 5.647 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Copper	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

Mass Limits	*Concentration Limits*

Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.048	0.078	0.029	0.047	0.072	mg/L	0.029	CFC	Discharge Conc ≥ 50% WQBEL (RP)

PERMIT	MONITOR.START_	MONITOR.END_	OUTFALL	PARAMETER	LOAD_UNITS	LOAD_2_VALU	LOAD_2_	LOAD_2_S	CONC_UI	CONC_3_VALUE	CONC_:	CONC_3	SAMPLE_F	SAMPLE_TYPE
PA0088048	6/1/2022	6/30/2022	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.018	Monitor	Daily Ma	1/week	24-Hr Composite
PA0088048	7/1/2022	7/31/2022	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.031	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	8/1/2022	8/31/2022	001	Copper, Total	lbs/day	0.007	Monitor	Daily Max	mg/L	0.047	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	9/1/2022	9/30/2022	001	Copper, Total	lbs/day	0.0009	Monitor	Daily Max	mg/L	0.23	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	10/1/2022	10/31/2022	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.041	Monitor	Daily Ma	1/week	24-Hr Composite
PA0088048	11/1/2022	11/30/2022	001	Copper, Total	lbs/day	0.001	Monitor	Daily Max	mg/L	0.02	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	12/1/2022	12/31/2022	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.038	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	1/1/2023	1/31/2023	001	Copper, Total	lbs/day	E	Monitor	Daily Max	mg/L	E	Monitor	Daily Maximum		
PA0088048	2/1/2023	2/28/2023	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.035	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	3/1/2023	3/31/2023	001	Copper, Total	lbs/day	0.005	Monitor	Daily Max	mg/L	0.092	Monitor	Daily Ma	1/week	24-Hr Composite
PA0088048	4/1/2023	4/30/2023	001	Copper, Total	lbs/day	0.005	Monitor	Daily Max	mg/L	0.101	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	5/1/2023	5/31/2023	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.031	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	6/1/2023	6/30/2023	001	Copper, Total	lbs/day	0.003	Monitor	Daily Max	mg/L	0.052	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	7/1/2023	7/31/2023	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.036	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	8/1/2023	8/31/2023	001	Copper, Total	lbs/day	0.001	Monitor	Daily Max	mg/L	0.035	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	9/1/2023	9/30/2023	001	Copper, Total	lbs/day	0.003	Monitor	Daily Max	mg/L	0.08	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	10/1/2023	10/31/2023	001	Copper, Total	lbs/day	0.0008	Monitor	Daily Max	mg/L	0.021	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	11/1/2023	11/30/2023	001	Copper, Total	lbs/day	0.001	Monitor	Daily Max	mg/L	0.035	Monitor	Daily Ma	1/week	24-Hr Composite
PA0088048	12/1/2023	12/31/2023	001	Copper, Total	lbs/day	0.001	Monitor	Daily Max	mg/L	0.024	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	1/1/2024	1/31/2024	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.027	Monitor	Daily Ma	2/month	24-Hr Composite
PA0088048	2/1/2024	2/29/2024	001	Copper, Total	lbs/day	0.001	Monitor	Daily Max	mg/L	0.032	Monitor	Daily Ma	1/week	24-Hr Composite
PA0088048	3/1/2024	3/31/2024	001	Copper, Total	lbs/day	0.001	Monitor	Daily Max	mg/L	0.29	Monitor	Daily Ma	1/week	24-Hr Composite
PA0088048	4/1/2024	4/30/2024	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.024	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	5/1/2024	5/31/2024	001	Copper, Total	lbs/day	0.0002	Monitor	Daily Max	mg/L	0.005	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	6/1/2024	6/30/2024	001	Copper, Total	lbs/day	0.0002	Monitor	Daily Max	mg/L	0.004	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	7/1/2024	7/31/2024	001	Copper, Total	lbs/day	0.0008	Monitor	Daily Max	mg/L	0.04	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	8/1/2024	8/31/2024	001	Copper, Total	lbs/day	0.003	Monitor	Daily Max	mg/L	0.058	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	9/1/2024	9/30/2024	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.062	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	10/1/2024	10/31/2024	001	Copper, Total	lbs/day	0.0007	Monitor	Daily Max	mg/L	0.031	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	11/1/2024	11/30/2024	001	Copper, Total	lbs/day	0.004	Monitor	Daily Max	mg/L	0.027	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	12/1/2024	12/31/2024	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.015	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	1/1/2025	1/31/2025	001	Copper, Total	lbs/day	0.005	Monitor	Daily Max	mg/L	0.029	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	2/1/2025	2/28/2025	001	Copper, Total	lbs/day	0.006	Monitor	Daily Max	mg/L	0.029	Monitor	Daily Ma	1/week	24-Hr Composite
PA0088048	3/1/2025	3/31/2025	001	Copper, Total	lbs/day	0.005	Monitor	Daily Max	mg/L	0.033	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	4/1/2025	4/30/2025	001	Copper, Total	lbs/day	0.007	Monitor	Daily Max	mg/L	0.029	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	5/1/2025	5/31/2025	001	Copper, Total	lbs/day	0.007	Monitor	Daily Max	mg/L	0.03	Monitor	Daily Ma	1/month	24-Hr Composite
PA0088048	6/1/2025	6/30/2025	001	Copper, Total	lbs/day	0.005	Monitor	Daily Max	mg/L	0.056	Monitor	Daily Ma	1/week	24-Hr Composite
PA0088048	7/1/2025	7/31/2025	001	Copper, Total	lbs/day	0.002	Monitor	Daily Max	mg/L	0.037	Monitor	Daily Ma	1/month	24-Hr Composite
										0.0467	Avg			
										0.29	Max			
										0.033	Median			

Yellow highlight shows the months for which the reported concentration was higher than the most stringent WQBEL recommended by TMS as a new permit limit

DEP's Minor Sewage applications do not require effluent testing for all pollutants. Cu, Pb, and Zinc are only required if facility of this size receives industrial or commercial contributions or if parameters are known to be present:

3800-PM-BCW0342b Rev. 6/2019
Permit Application

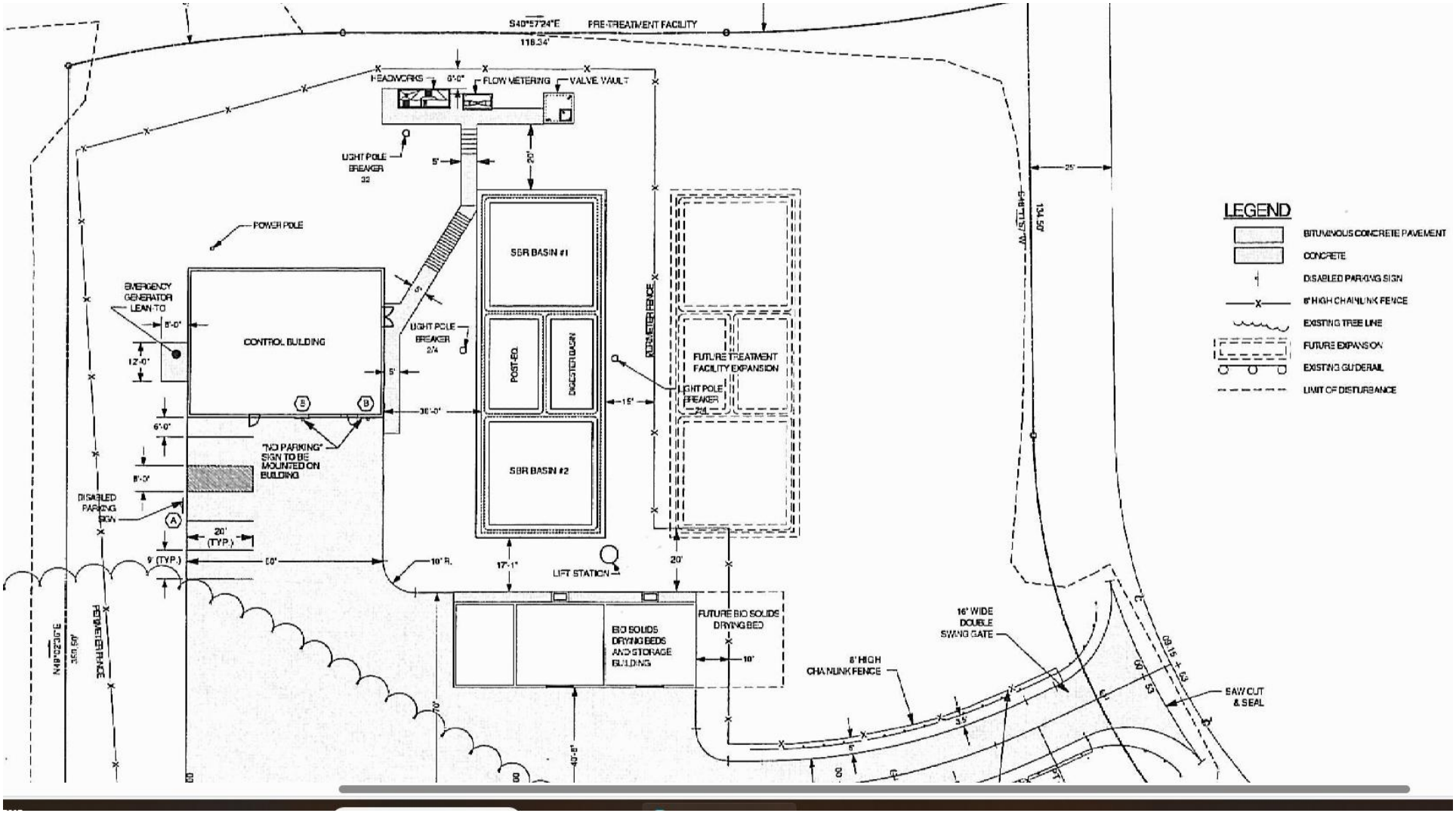
Applicant: New Morgan Boro Berks Cnty

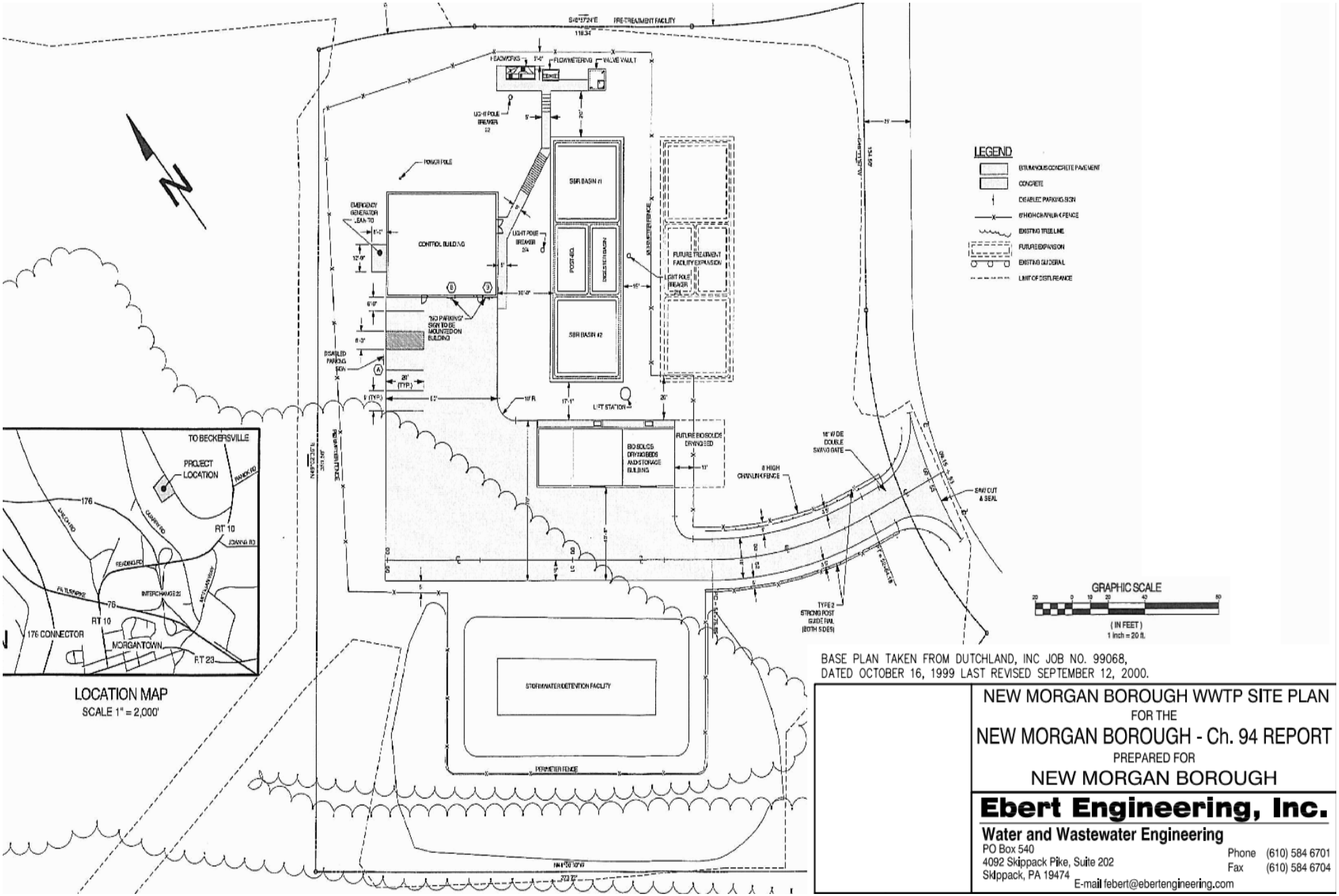
EFFLUENT TESTING INFORMATION – DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD

All sewage facilities with a design flow greater than or equal to 0.1 MGD must report the concentration results of all effluent samples analyzed in the past two years for pH (Minimum and Maximum), Total Residual Chlorine (TRC), Fecal Coliform, Biochemical Oxygen Demand (BOD_5 or $CBOD_5$), TSS, NH_3-N, Total N, and Total P. A minimum of three results must be reported per parameter. In addition, facilities with design flows greater than or equal to 0.1 MGD must report the concentration results of at least one sample analyzed in the past two years for Dissolved Oxygen (Minimum), Temperature, TKN, NO_2-N + NO_3-N, TDS, Chloride, Bromide, Sulfate, Oil and Grease, and Total Maximum Daily Load (TMDL) parameters. *If the facility receives industrial or commercial contributions, at least one result is required for Total Copper, Total Lead, Total Zinc and any other parameters that are known or suspected to be present in effluent. 24-hour composite sample(s) are preferred. All samples must be analyzed in accordance with EPA methods (40 CFR Part 136).

Outfall No.: 001

PARAMETER		MIN/MAX VALUE		AVERAGE VALUE		No. Samples	Sample Type
		Value	Units	Value	Units		
pH (Minimum)		6.09	S.U.			365	Meter
pH (Maximum)		8.56	S.U.			365	Meter
Dissolved Oxygen (Minimum)		5.61	mg/L	8.82	mg/L	365	Meter
TRC		N/A	mg/L	N/A	mg/L		N/A
Fecal Coliform		2,600	No./100 mL	11	No./100 mL	55	Grab
Biochemical Oxygen Demand (Report one)	BOD_5	N/A	mg/L		mg/L		N/A
	$CBOD_5$	13.5	mg/L	3	mg/L	53	Composite
TSS		28	mg/L	8	mg/L	53	Composite
NH_3-N		3.67	mg/L	0.3	mg/L	53	Composite
Total N		69.31	mg/L	50.09	mg/L	53	Calculation
Total P		1.10	mg/L	0.4	mg/L	53	Composite
Temperature		N/A	°F		°F		N/A
TKN		4.93	mg/L	1.05	mg/L	53	Calculation
NO_2-N + NO_3-N		68.20	mg/L	48.26	mg/L	53	Calculation
TDS		N/A	mg/L		mg/L		N/A
Chloride		N/A	mg/L		mg/L		N/A
Bromide		N/A	mg/L		mg/L		N/A
Sulfate		N/A	mg/L		mg/L		N/A
Oil and Grease		N/A	mg/L		mg/L		N/A
Total Copper*		0.101	mg/L	0.049	mg/L	11	Composite
Total Lead*		N/A	mg/L		mg/L		N/A
Total Zinc*		N/A	mg/L		mg/L		N/A
TMDL Parameters:							
Total Hardness (as CaCO3)		116.0	mg/L	93.1	mg/L	11	Composite
Total NH3-N Load (lbs)		7	lbs	0.82	lbs	53	Calculation
Total N Load (lbs)		127	lbs	86	lbs	53	Calculation
Other Parameters Known or Suspected to be Present in the Effluent:							
Total P Load (lbs)		1.2	lbs	0.7	lbs	53	Calcualtion
Total TKN Load (lbs)		11	lbs	2.1	lbs	53	Calculation
Total NO2-N + NO3-N Load (lbs		117	lbs	82	lbs	53	Calculation


S40°57'24"E
PRE-TREATMENT FACILITY
116.34'
HEADWORKS
FLOW METERING
VALVE VAULT
LIGHT POLE BREAKER
POWER POLE
EMERGENCY GENERATOR LEAN-TO
CONTROL BUILDING
SBR BASIN #1
SBR BASIN #2
POST-EQ.
DIGESTER BASIN
PERIMETER FENCE
FUTURE TREATMENT FACILITY EXPANSION
"NO PARKING" SIGN TO BE MOUNTED ON BUILDING
DISABLED PARKING SIGN
LIFT STATION
BIO SOLIDS DRYING BEDS AND STORAGE BUILDING
FUTURE BIO SOLIDS DRYING BED
16' WIDE DOUBLE SWING GATE
6' HIGH CHAINLINK FENCE
SAW CUT & SEAL
LEGEND
BITUMINOUS CONCRETE PAVEMENT
CONCRETE
DISABLED PARKING SIGN
6' HIGH CHAINLINK FENCE
EXISTING TREE LINE
FUTURE EXPANSION
EXISTING GUIDERAIL
LIMIT OF DISTURBANCE



BASE PLAN TAKEN FROM DUTCHLAND, INC JOB NO. 99068,
DATED OCTOBER 16, 1999 LAST REVISED SEPTEMBER 12, 2000.

NEW MORGAN BOROUGH WWTP SITE PLAN
FOR THE
NEW MORGAN BOROUGH - Ch. 94 REPORT
PREPARED FOR
NEW MORGAN BOROUGH

Ebert Engineering, Inc.
Water and Wastewater Engineering
PO Box 540
4092 Skippack Pike, Suite 202
Skippack, PA 19474
Phone (610) 584 6701
Fax (610) 584 6704
E-mail febert@ebertengineering.com

Pennsylvania
Department of
Environmental Protection

September 11, 2025

VIA ELECTRONIC MAIL

Dear Permittee:

The Department of Environmental Protection (DEP) has reviewed your NPDES permit application **PA0088048** and has reached a preliminary finding that new or more stringent water quality-based effluent limitations (WQBELs) for toxic pollutant(s) should be established in the permit. This finding is based on DEP's assessment that reasonable potential exists to exceed water quality criteria [Pa Code Chapter 93] in the receiving waters during design flow conditions. The following WQBELs are anticipated based on the information available to DEP during its review:

Outfall No.	Pollutant	Average Monthly (mg/L)	Maximum Daily (mg/L)	IMAX (mg/L)
001	Total Copper	0.029	0.047	0.072

Attached is a survey that DEP **requests** that you complete and **return to DEP in 30 days**. Completion of this survey will help DEP develop the draft NPDES permit and allow DEP to understand your current capabilities or plans to treat or control these pollutant(s). If you decide not to complete and return the survey, DEP will proceed with developing the draft NPDES permit based on all available information and certain assumptions. Your response to this notice does not constitute an official comment for DEP response but will be taken under consideration. When the draft NPDES permit is formally noticed in the *Pennsylvania Bulletin*, you may make official comments for DEP's further consideration and response.

Please contact me at 717.705.4813 or bboylan@pa.gov if you have any questions about this information or the attached survey.

Sincerely,

Bonnie Boylan

Bonnie Boylan
Environmental Engineering Specialist
Clean Water Program

Pennsylvania
Department of
Environmental Protection

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PRE-DRAFT PERMIT SURVEY FOR TOXIC POLLUTANTS

Permittee Name: **New Morgan Borough -Berks County** Permit No.: **PA0088048**

Pollutant(s) identified by DEP that may require WQBELs: **Total Copper**

Is the permittee aware of the source(s) of the pollutant(s)? ☐ Yes ☐ No ☐ Suspected

If Yes or Suspected, describe the known or suspected source(s) of pollutant(s) in the effluent.

Has the permittee completed any studies in the past to control or treat the pollutant(s)? ☐ Yes ☐ No

If Yes, describe prior studies and results:

Does the permittee believe it can achieve the proposed WQBELs now? ☐ Yes ☐ No ☐ Uncertain

If No, describe the activities, upgrades or process changes that would be necessary to achieve the WQBELs, if known.

Estimated date by which the permittee could achieve the proposed WQBELs: _____ ☐ Uncertain

Will the permittee conduct additional sampling for the pollutant(s) to supplement the application? ☐ Yes ☐ No

Check the appropriate box(es) below to indicate site-specific data that have been collected by the permittee in the past. If any of these data have not been submitted to DEP, please attach to this survey.

☐	Discharge pollutant concentration coefficient(s) of variability	Year(s) Studied:
☐	Discharge and background Total Hardness concentrations (metals)	Year(s) Studied:
☐	Background / ambient pollutant concentrations	Year(s) Studied:
☐	Chemical translator(s) (metals)	Year(s) Studied:
☐	Slope and width of receiving waters	Year(s) Studied:
☐	Velocity of receiving waters at design conditions	Year(s) Studied:
☐	Acute and/or chronic partial mix factors (mixing at design conditions)	Year(s) Studied:
☐	Volatilization rates (highly volatile organics)	Year(s) Studied:
☐	Site-specific criteria (e.g., Water Effect Ratio or related study)	Year(s) Studied:

Please submit this survey to the DEP regional office that is reviewing the permit application within 30 days of receipt.