pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0110469**
Facility Type	**Municipal**	APS ID	**869760**
Major / Minor	**Minor**	Authorization ID	**1398836**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Patton Borough**	Facility Name	**Patton Borough STP**
Applicant Address	800 4th Avenue	Facility Address	Logging Road 11054
	Patton, PA 16668-0175		Patton, PA 16668
Applicant Contact	Donna Dunegan	Facility Contact	Michelle Baker
Applicant Phone	(814) 676-3641	Facility Phone	814-674-3641
Client ID	37516	Site ID	244488
Ch 94 Load Status	Not Overloaded	Municipality	Elder Township
Connection Status	Dept. Imposed Connection Prohibitions	County	Cambria
Date Application Received	June 3, 2022	EPA Waived?	No
Date Application Accepted	June 8, 2022	If No, Reason	Significant CB Discharge

Purpose of Application: Renewal of NPDES permit for discharge of treated sewage.

Summary of Review

The applicant has applied for the renewal of NPDES Permit PA0110469. The previous permit was issued on November 17, 2017 and will expire on November 30, 2022.

Sewage from this plant is treated with screening, anoxic selectors, oxidation ditches, clarifiers, an aerobic digestor, and UV light disinfection.

There are two SSOs at this facility, located at the Highland Avenue and Palmer avenue pump stations. The facility is managing the SSOs as part of a Corrective Action Plan that was initiated with the DEP in September 2019.

The applicant is currently enrolled in and will continue to use eDMR.

The Act 14-PL 834 Municipal Notification was provided by the May 31, 2022 letters and no comments were received.

Below is a summary of changes made to this permit:

- *E. Coli* monitoring was imposed
- Ammonia-nitrogen limits became more stringent
- Monitoring frequencies for Total Nitrogen and Total Phosphorus have been updated
- Mass loading limits for $CBOD_5$ and TSS have been rounded to comply with DEP guidance. They are slightly more stringent than the previous cycle.

Sludge use and disposal description and location(s): Laurel Highlands Landfill, Cambria County

Approve	Deny	Signatures	Date
X		Grace Polakoski Grace Polakoski, E.I.T. / Environmental Engineering Specialist	August 2, 2022
x		Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineer Manager	August 12, 2022

Summary of Review
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)	0.54
Latitude	40º 38' 13.19"	Longitude	-78º 38' 22.04"
Quad Name	Hastings	Quad Code	40078F6
Wastewater Description:	Sewage Effluent		

Receiving Waters	Chest Creek (CWF)	Stream Code	26798
NHD Com ID	61837371	RMI	25.34
Drainage Area	44.7 sq. mi.	Yield (cfs/mi^2)	0.068
Q_{7-10} Flow (cfs)	3.06	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	1727	Slope (ft/ft)	
Watershed No.	8-B	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	**N/A**		
Source(s) of Impairment	**N/A**		
TMDL Status	Final, Final	Name	Chest Creek Sediment TMDL, West Branch Susquehanna River Watershed TMDL

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

Nearest Downstream Public Water Supply Intake	Shawville Power Plant		
PWS Waters	West Branch Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	69.34

Changes Since Last Permit Issuance: USGS StreamStats was used for the Q_{7-10} flow instead of Bulletin #12.

Other Comments:

Chest Creek Watershed Sediment TMDL

A TMDL for the Chest Creek Watershed was approved by the EPA on July 29, 2011 for the control of excessive siltation. In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation (WLA) for the discharge prepared by the State and approved by the EPA pursuant to 40 CFR § 130.7. The Chest Creek Watershed Sediment TMDL was prepared for sediment-impaired segments of the Chest Creek Watershed. Since the receiving water for Patton Borough STP is not a sediment-impaired segment of Chest Creek, Patton Borough STP will not be assigned wasteload allocations or monitoring for sediment, beyond the standard TBELs for TSS.

West Branch Susquehanna River Watershed TMDL

A TMDL for the West Branch Susquehanna River Watershed was approved by the EPA on July 9, 2009 for the control of abandoned mine drainage pollutants including: low pH, iron, manganese, and aluminum. In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation (WLA) for the discharge prepared by the State and approved by the EPA pursuant to 40 CFR § 130.7. Patton Borough STP was not assigned a WLA in this TMDL. Monitoring for Total Aluminum, Total Iron, and Total Manganese will once again be imposed during this permit cycle.

Treatment Facility Summary

Treatment Facility Name: Patton Borough STP

WQM Permit No.	Issuance Date
WQG02111802	10/01/2018
565S051 A-2	01/09/2013
565S051 A-1	09/26/2002
565S051	05/22/1967

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary With Ammonia Reduction	Oxidation Ditch	Ultraviolet	0.54

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.54	750	Not Overloaded		Landfill

Changes Since Last Permit Issuance: N/A

Compliance History

Facility: Patton Boro STP

NPDES Permit No.: PA0110469

Compliance Review Period: 6/2017 – 6/2022

Inspection Summary:

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC
2947144	09/18/2019	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted
2890718	06/06/2019	Chapter 94 Inspection	PA Dept of Environmental Protection	No Violations Noted
3052155	05/04/2020	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted
2856289	01/29/2019	Compliance Evaluation	PA Dept of Environmental Protection	No Violations Noted

Violation Summary:

VIOL ID	VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE
888121	05/04/2020	92A.44	NPDES - Violation of effluent limits in Part A of permit	05/04/2020

Open Violations by Client ID:

No open violations for client id 37516

Enforcement Summary:

ENF ID	ENF TYPE	ENF CREATION DATE	ENF FINALSTATUS	ENF CLOSED DATE
386737	FLNOV	07/07/2020	Administrative Close Out	04/08/2021

DMR Violation Summary:

Can't get power BI to run report. Had one exceedance in 2021 and none in 2020.

Compliance Status:

Permittee in compliance.

Completed by: John Murphy

Completed date: 6/10/2022

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.54
Latitude 40º 38' 13.19" **Longitude** -78º 38' 22.04"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

The discharge was evaluated using WQM7.0 to determine the $CBOD_5$, ammonia nitrogen, and dissolved oxygen parameters. The model results show technology-based effluent limitations for $CBOD_5$ are appropriate. However, during the last permit cycle, seasonal $CBOD_5$ limits were imposed. These seasonal $CBOD_5$ limits prove to be more stringent than the recommended TBELs for $CBOD_5$ so they will be reimposed this permit cycle to comply with anti-backsliding regulations. The model results recommend more stringent ammonia-nitrogen limits for the facility.

Parameter	Limit (mg/l)	SBC	Model
Dissolved Oxygen	4	Minimum	WQM7.0
Ammonia Nitrogen (Nov 1 – Apr 30)	25.0	Average Monthly	WQM7.0
Ammonia Nitrogen (May 1 – Oct 31)	11.29	Average Monthly	WQM7.0

Per DEP SOP "Establishing Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers" (SOP No. BCW-PMT-037), the Toxics Management Spreadsheet (TMS) will be run for all pollutants for which sampling data is available. All sewage facilities with a design flow of greater than or equal to 0.1 MGD are required to provide effluent samples for: pH, TRC, fecal coliform, $CBOD_5$ or BOD_5, TSS, NH_3-N, Total N, Total P, DO, temperature, TKN, NO_2-N + NO_3-N, TDS, Chloride, Bromide, Sulfate, oil and grease, and any applicable TMDL parameters. The TMS spreadsheet was run for the applicable parameters of: TDS, Chloride, Bromide, Sulfate, Total Copper, Total Lead, and Total Zinc. Reasonable Potential was not found for these parameters therefore no additional WQBELs will be included in the permit. The TMS results can be found in Attachment D.

Best Professional Judgment (BPJ) Limitations

A Dissolved Oxygen minimum limitation of 4.0 mg/L will be implemented based on the standard in 25 PA Code Chapter 93 and best professional judgment.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 **(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.**

The facility is not seeking to revise the previously permitted effluent limits.

Mass Loading Limitations

Per Department SOP "Establishing Effluent Limitations for Individual Sewage Permits" (BCW-PMT-033), mass loading limits will be established for POTWs for $CBOD_5$, TSS, ammonia nitrogen. Average monthly mass loading limits will be established for $CBOD_5$, TSS, and ammonia nitrogen. Average weekly mass loading limits will be established for $CBOD_5$ and TSS. Mass loading limits will be calculated according to the formula below:

$$average\ annual\ design\ flow\ (MGD) \times concentration\ limit\ \left(\frac{mg}{L}\right) \times 8.34\ (converstion\ factor) = mass\ loading\ limit\ (\frac{lbs}{day})$$

The following mass loading limitations were calculated:

Parameter	Average Monthly (lbs/day)	Average Weekly (lbs/day)
$CBOD_5$ (May 1 – Oct 31)	90.07	135.11
$CBOD_5$ (Nov 1 – Apr 30)	112.59	168.89
TSS	135.11	202.66
Ammonia Nitrogen (May 1 – Oct 31)	50.85	-
Ammonia Nitrogen (Nov 1 – Apr 30)	112.59	-

Influent Monitoring

Per Department SOP "New and Reissuance Sewage Individual NPDES Permit Applications" (BCW-PMT-002), POTWs with design flows greater than 2,000 GPD, influent BOD_5 and TSS monitoring will be established in the permit. The influent monitoring will be established with the same frequency and sample type as the effluent sampling.

Chesapeake Bay

Patton Borough STP is considered a Phase 3 discharger by the Chesapeake Bay Watershed Implementation Plan and all effluent limits were to be established in the permit by October 2016. Patton Borough STP has been assigned a cap load for TN and TP in the Phase 3 Watershed Implementation Plan Wastewater Supplement (rev. July 29, 2022) to the Chesapeake Bay Watershed Implementation Plan. The cap load for Total Nitrogen is set at 9,863 lbs/year. The cap load for Total Phosphorus is set at 1,315 lbs/year. No TN Offsets were incorporated into the TN Cap loads, and therefore, no Offsets will need to be removed. To comply with the cap loads, annual reporting of the load for total nitrogen and total phosphorus will be imposed. Total Nitrogen is the sum of Total Kjeldahl Nitrogen and Nitrate-Nitrite as N so monitoring for Total Kjeldahl Nitrogen and Nitrate-Nitrite as N will also be imposed. In addition, Patton Borough STP will be required to monitor and report both the concentration and the load for Total Nitrogen and Total Phosphorus. The monitoring frequency for Total Nitrogen and Total Phosphorus will be 1/week according to DEP SOP "Establishing Effluent

Limitations for Individual Sewage Permits" (SOP No. BCW-PMT-033, Rev. March 24, 2021) and Table 6-3 of the DEP's "Technical Guidance for the Development and Specification of Effluent Limitations."

Additional Considerations

Sewage discharges will include monitoring, at a minimum, for *E. coli*, in new and reissued permits, with a monitoring frequency of 1/quarter for design flows >= 0.05 and < 1 MGD.

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Department's "Technical Guidance for the Development and Specification of Effluent Limitations".

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2)	Required
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	112.59	168.89	XXX	25.0	37.5	50	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	90.07	135.11	XXX	20.0	30.0	40	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	135.11	202.66	XXX	30.0	45.0	60	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
Ultraviolet light transmittance (%)	XXX	XXX	Report	Report	XXX	XXX	1/day	Measured

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	112.59	XXX	XXX	25.0	XXX	50	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	50.85	XXX	XXX	11.29	XXX	22.58	1/week	24-Hr Composite
Total Phosphorus	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Aluminum, Total	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Iron, Total	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Manganese, Total	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: Outfall 001

Proposed Effluent Limitations and Monitoring Requirements

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

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

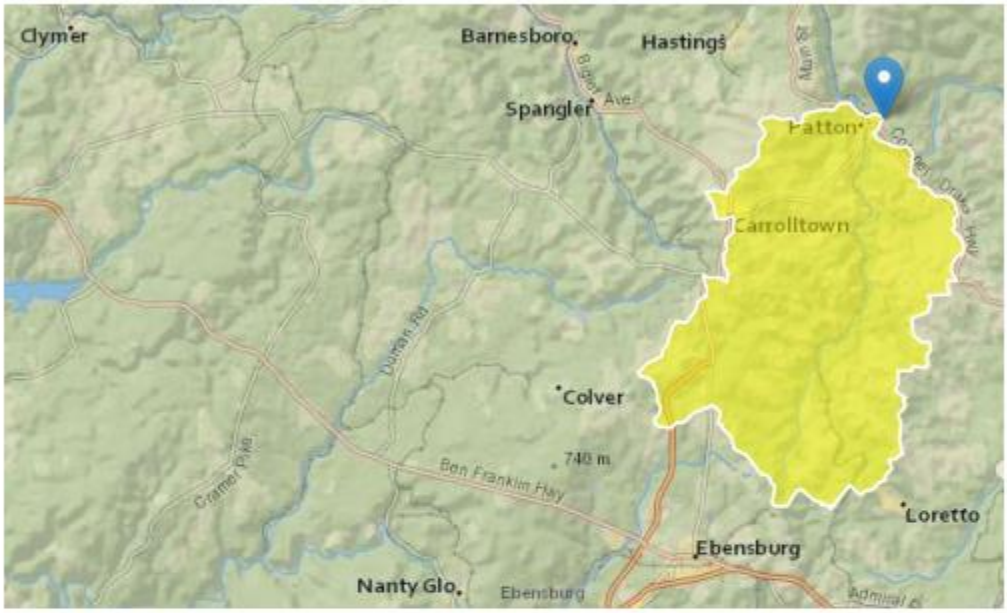
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Net Total Nitrogen	Report	9863	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	1315	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

ATTACHMENT A:
USGS STREAMSTATS

StreamStats Report

Region ID: PA
Workspace ID: PA20220615164644646000
Clicked Point (Latitude, Longitude): 40.63701, -78.63943
Time: 2022-06-15 12:47:05 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	44.7	square miles
ELEV	Mean Basin Elevation	1964	feet
PRECIP	Mean Annual Precipitation	44	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	44.7	square miles	2.33	1720
ELEV	Mean Basin Elevation	1964	feet	898	2700
PRECIP	Mean Annual Precipitation	44	inches	38.7	47.9

Low-Flow Statistics Flow Report [Low Flow Region 3]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	6.11	ft^3/s	43	43
30 Day 2 Year Low Flow	8.4	ft^3/s	38	38
7 Day 10 Year Low Flow	3.06	ft^3/s	54	54
30 Day 10 Year Low Flow	3.95	ft^3/s	49	49
90 Day 10 Year Low Flow	5.66	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. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.9.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.0

ATTACHMENT B:
WQM MODELING RESULTS (SUMMER)

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
08B	26798	CHEST CREEK	**25.440**	1727.00	44.70	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.068	3.06	0.00	0.000	0.000	10.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Patton Boro STP	PA011049	0.0000	0.0000	0.5400	0.000	20.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	9.01	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
08B	26798	CHEST CREEK	**25.340**	1719.00	44.80	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.068	3.06	0.00	0.000	0.000	10.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
08B	26798	CHEST CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
25.440	3.06	0.00	3.06	.8354	0.01515	.678	26.87	39.63	0.21	0.029	20.00	7.00
Q1-10 Flow												
25.440	1.96	0.00	1.96	.8354	0.01515	NA	NA	NA	0.18	0.034	20.00	7.00
Q30-10 Flow												
25.440	4.16	0.00	4.16	.8354	0.01515	NA	NA	NA	0.25	0.025	20.00	7.00

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
08B	26798	CHEST CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
25.440	0.540	20.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
26.871	0.678	39.632	0.214
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
6.93	1.154	2.42	0.700
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.936	30.781	Tsivoglou	6
Reach Travel Time (days)			
0.029			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.003	6.91	2.42	7.98
0.006	6.89	2.41	8.03
0.009	6.86	2.41	8.07
0.011	6.84	2.40	8.11
0.014	6.82	2.40	8.14
0.017	6.80	2.39	8.18
0.020	6.77	2.39	8.21
0.023	6.75	2.38	8.23
0.026	6.73	2.38	8.24
0.029	6.71	2.37	8.24

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
08B	26798	CHEST CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
25.440	Patton Boro STP	16.76	50	16.76	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
25.440	Patton Boro STP	1.89	11.29	1.89	11.29	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
25.44	Patton Boro STP	25	25	11.29	11.29	4	4	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
08B	26798	CHEST CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
25.440	Patton Boro STP	PA011049	0.000	CBOD5	25		
				NH3-N	11.29	22.58	
				Dissolved Oxygen			4

ATTACHMENT C:
WQM MODELING RESULTS (WINTER)

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
08B	26798	CHEST CREEK	**25.440**	1727.00	44.70	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.137	3.06	0.00	0.000	0.000	10.0	0.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Patton Boro STP	PA011049	0.0000	0.0000	0.5400	0.000	5.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	12.51	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
08B	26798	CHEST CREEK	**25.340**	1719.00	44.80	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.137	3.06	0.00	0.000	0.000	10.0	0.00	0.00	5.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
08B	26798	CHEST CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
25.440	3.06	0.00	3.06	.8354	0.01515	.678	26.87	39.63	0.21	0.029	5.00	7.00
Q1-10 Flow												
25.440	1.96	0.00	1.96	.8354	0.01515	NA	NA	NA	0.18	0.034	5.00	7.00
Q30-10 Flow												
25.440	4.16	0.00	4.16	.8354	0.01515	NA	NA	NA	0.25	0.025	5.00	7.00

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
08B	26798	CHEST CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
25.440	0.540	5.000	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
26.871	0.678	39.632	0.214
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
6.93	1.157	5.36	0.221
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
10.685	21.567	Tsivoglou	6
Reach Travel Time (days)			
0.029			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.003	6.92	5.36	10.78
0.006	6.91	5.35	10.86
0.009	6.90	5.35	10.94
0.011	6.89	5.35	11.02
0.014	6.88	5.34	11.09
0.017	6.86	5.34	11.15
0.020	6.85	5.34	11.22
0.023	6.84	5.33	11.27
0.026	6.83	5.33	11.33
0.029	6.82	5.33	11.38

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
08B	26798	CHEST CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
25.440	Patton Boro STP	24.1	50	24.1	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
25.440	Patton Boro STP	4.36	25	4.36	25	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
25.44	Patton Boro STP	25	25	25	25	4	4	0	0

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
08B	26798	CHEST CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
25.440	Patton Boro STP	PA011049	0.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

ATTACHMENT D:
TMS RESULTS

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Patton Boro STP** NPDES Permit No.: **PA0110469** 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
0.54	100	6.96						

					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		322									
	Chloride (PWS)	mg/L		126									
	Bromide	mg/L	<	0.362									
	Sulfate (PWS)	mg/L		35.2									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L		2.87									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L		0.147									
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L		15.5									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										

	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Patton Boro STP, NPDES Permit No. PA0110469, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Chest Creek** No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	026798	25.44	1727	44.7			Yes
End of Reach 1	026798	25.34	1719	44.8			Yes

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

Location	RMI	LFY (cfs/mi²)*	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	25.44	0.068			10							100	7		
End of Reach 1	25.34	0.068			10										

Q_h

Location	RMI	LFY (cfs/mi²)	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	25.44														
End of Reach 1	25.34														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Patton Boro STP, NPDES Permit No. PA0110469, Outfall 001

Instructions | *Results* | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
25.44	3.04		3.04	0.835	0.015	0.678	6.776	10.	0.213	0.029	0.564
25.34	3.05		3.0464					10.000			

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
25.44	19.63		19.63	0.835	0.015	1.409	6.776	4.808	0.541	0.011	0.281
25.34	19.671		19.67								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.564 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 6.99

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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	13.439	14.0	64.9	Chem Translator of 0.96 applied
Total Iron	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	117.180	120	556	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 0.564 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 6.99

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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	

Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	8.956	9.33	43.3	Chem Translator of 0.96 applied
Total Iron	0	0		0	1,500	1,500	6,958	WQC = 30 day average; PMF = 1
Total Zinc	0	0		0	118.139	120	556	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 0.564 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 Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 0.281 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 Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

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

No. Samples/Month: 4

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable

Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Copper	41.6	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	6,958	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	356	µg/L	Discharge Conc ≤ 10% WQBEL