pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0026824**
Facility Type	**Municipal**	APS ID	**820242**
Major / Minor	**Major**	Authorization ID	**988913**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Clairton Municipal Authority**	Facility Name	**Clairton Municipal Authority STP**
Applicant Address	1 North State Street	Facility Address	1 N State Street
	Clairton, PA 15025-2172		Clairton, PA 15025-2172
Applicant Contact	Mr. Brian Secrest	Facility Contact	Same as Applicant
Applicant Phone	(412) 233-3246	Facility Phone	Same as Applicant
Client ID	5935	Site ID	249758
Ch 94 Load Status	Not Overloaded	Municipality	Clairton City
Connection Status	No Limitations	County	Allegheny
Date Application Received	August 7, 2013	EPA Waived?	No
Date Application Accepted	August 7, 2013	If No, Reason	Major Facility, Pretreatment

Purpose of Application .

Summary of Review

The applicant has applied for a renewal of an existing NPDES Permit, Permit No. PA0026824, which was previously issued by the Department on January 30, 2009. That permit expired on January 31, 2014.

WQM Permit 8775S A-3 was issued by the Department on August 24, 2020 and approves STP expansion. In an email dated February 25, 2021, KLH Engineers confirmed that construction will begin by January 1, 2022, and that the new STP will be online by January 1, 2024.

The new STP will change the existing conventional activated sludge process to a membrane bioreactor (MBR) process. The annual average flow will increase from 6.0 MGD to 6.8 MGD and the design organic loading will increase from 6,504 lbs/day to 13,000 lbs/day. The facility's maximum monthly average flow will be 10.83 MGD and this number will be used to prepare the Annual Municipal Wasteload Management Report to help determine whether a "hydraulic overload" situation exists, as defined in Title 25 Pa. Code Chapter 94.

The MBR process does not require disinfection based upon the on-site pilot studies. The existing chlorine gas disinfection units will be converted to liquid sodium hypochlorite for chlorination and liquid sodium bisulfite for dichlorination.

The receiving stream, Peters Creek, is classified as a TSF and is located in State Watershed No. 19-C.

CSO Outfalls 002, 003, 004, 006, and 007 will again be permitted. These outfalls serve as combined sewer overflows necessitated by storm water entering the sewer system and exceeding the hydraulic capacity of the sewers and/or the treatment plant and are permitted to discharge only for this reason. Dry weather discharges from these outfalls are Prohibited. Part A.I.D, Identification of Combined Sewer Overflow Discharges, and Part C.III, Combined Sewer Overflows, has been added to the permit.

Approve	Deny	Signatures	Date
X		William C. Mitchell, E.I.T. / Project Manager	May 6, 2021
X		Donald J. Leone, P.E. / Environmental Engineer Manager	May 6, 2021

Summary of Review

The Department previously approved the NMC and LTCP Reports. The LTCP Update, dated April 2018 and tevised July 2018, was approved by the Department on September 13, 2018. The LTCP Update proposes to comply with the Presumption Approach Criteria of the EPA CSO Policy with an 85% capture rate for the annual average of precipitation events that occurs as a running 5 year average.

LTCP Implementation involves a Phase I & II Construction Project consisting of the following:

- Phase 1 consists of new raw sewage pump station, interceptor sewer modification, new headworks, new aerobic digester, modifications to existing aerobic digesters, and new belt filter sludge press.
- Phase 2 consists of STP Modifications to change the existing conventional activated sludge process to a Membrane Bioreactor (MBR) process to reduce untreated combined sewage wet weather overflows. The two existing primary clarifiers will be converted to MBR effluent water storage tanks and back-up MBR chlorine contact tank, the four existing aeration tanks will be converted to MBR tanks, the four existing secondary clarifiers will be converted to CSO storage and primary clarifiers, and the two existing chlorine contact tanks will be converted to CSO disinfection. The MBR process is designed for 20.18 MGD with an additional wet weather holding capacity of 18.05 MGD. Flows in excess of 20.18 MGD will be diverted to the CSO treatment process, which includes primary clarification and disinfection, for a combined peak flow capacity of 38.23 MGD. The initial flow of 18.05 MG will be held in the CSO processing units to be diverted back through the secondaries as the flow rate to the secondaries drops below 20.18 MGD.

The approved LTCP Task Implementation Schedule requires PCCMP submission by July 1, 2026. Please note that the Department will request that the Authority submit an updated LTCP Task Implementation Schedule during the Draft Permit Comment Period to account for construction delays.

Part C.II, Maximizing Treatment at the Existing POTW has been added to the permit. This condition allows for a CSO Related Bypass of secondary treatment at the STP. This is only permitted when the maximum daily flow to the STP exceeds 38.23 MGD. All bypassed flow receives primary treatment and disinfection prior to bypass.

Storm Water Outfalls 008, 009, 010, 011, and 012 will again be permitted for the discharge of un-contaminated storm water runoff from areas in and around the treatment plant. Part C.VI, Requirements Applicable to Storm Water Outfalls, has been added to the permit.

The permit application does not list any CIUs in the service area and there have been no compliance issues attributed to IW discharges causing NPDES permit effluent violations. Part C language, Pretreatment Program Development, has not been added to the permit. In an email, dated May 2, 2018, Mr. Stephen Copeland, EPA Region III, stated that the Pretreatment Program Development condition will likely not be needed.

The applicant has complied with Act 14 Notifications and no comments were received.

Sludge use and disposal description and location(s): Solids from aerobic digestion is dewatered via a centrifuge and disposed of at the Greenridge Reclamation Landfill, Permit # 100281.

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)	6.0 (existing flow) to 6.8 (expanded flow)
Latitude	40º 18' 13.00"	Longitude	-79º 52' 57.00"
Quad Name	Glassport, PA	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Peters Creek (TSF)	Stream Code	39425
NHD Com ID	99408364	RMI	0.42
Drainage Area	51.33	Yield (cfs/mi^2)	0.141
Q_{7-10} Flow (cfs)	7.24	Q_{7-10} Basis	USGS StreamStats & Bulletin 12, Sta. 03075090, Peters Creek @ Large, PA
Elevation (ft)	721.5	Slope (ft/ft)	0.0001
Watershed No.	19-C	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, PATHOGENS		
Source(s) of Impairment	ACID MINE DRAINAGE, SOURCE UNKNOWN		
TMDL Status	Final	Name	Peters Creek Watershed

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

Nearest Downstream Public Water Supply Intake		Western PA Water Company	
PWS Waters	Monongahela River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: NONE

Other Comments: The discharge is to Peters Creek, which has a Final TMDL and is impaired by metals & pH. This sewage discharge is not expected to contribute to the stream impairment for which abandoned mine drainage is source of such impairment. No WLAs have been developed for this sewage discharge and they are not expected to contribute to the stream impairment for these pollutants. The permit requires monitoring of these metals. 1/quarter monitoring is imposed for the parameters of Total Iron, Total Manganese and Total Aluminum per Chapter 92.a.61.

Treatment Facility Summary – Existing and Expanded

Treatment Facility Name: Clairton Municipal Authority STP

WQM Permit No.	Issuance Date
8775S	
8775S A-3	08/24/2020

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary to Tertiary	Activated Sludge With Solids Removal to MBRs	Gas Chlorine & Liquid Sodium Hypochlorite	6.0 to 6.8

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
6.0 to 20.8	6,504 to 13,000	Not Overload	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance: STP is being converted from the existing conventional activated sludge process to a MBR process.

Compliance History

Operations Compliance Check Summary Report

Facility: Clairton_MA_STP

NPDES Permit No.: PA0026824

Compliance Review Period: 04/27/2013 – 04/27/2018

Open Violations by Client Summary

None.

Inspection Summary

INSP ID	INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC	# OF VIOLATIONS
2512182	08/09/2016	Compliance Evaluation	County Health Dept	No Violations Noted	0
2872538	04/09/2019	Compliance Evaluation	County Health Dept	No Violations Noted	0
2491319	05/27/2016	Chapter 94 Inspection	County Health Dept	No Violations Noted	0
2592695	04/20/2017	Compliance Evaluation	County Health Dept	No Violations Noted	0
2726370	04/24/2018	Chapter 94 Inspection	PA Dept of Environmental Protection	Administratively Closed	0
3084498	03/21/2020	Administrative/File Review	PA Dept of Environmental Protection	No Violations Noted	0
3097150	03/31/2020	Compliance Evaluation	County Health Dept	No Violations Noted	0
2734405	05/23/2018	Compliance Evaluation	County Health Dept	No Violations Noted	0
2596005	04/18/2017	Chapter 94 Inspection	PA Dept of Environmental Protection	No Violations Noted	0

Violation Summary

No violations in eFACTs.

Enforcement Summary

No enforcement actions.

DMR Violation Summary

Current eDMR user.

Effluent limit violation summary 4/27/2016 – 4/27/2021:

MONITORING END DATE	OUTFALL	PARAMETER	SAMPLE VALUE	PERMIT VALUE	UNIT OF MEASURE	STATISTICAL BASE CODE
12/31/2020	001	Total Suspended Solids	50.3	30	mg/L	Average Monthly
12/31/2020	001	Total Suspended Solids	65.8	45	mg/L	Weekly Average
12/31/2020	001	Total Suspended Solids	2116	1501	lbs/day	Average Monthly
12/31/2020	001	Total Suspended Solids	2940	2252	lbs/day	Weekly Average
02/28/2021	001	Total Suspended Solids	34.3	30	mg/L	Average Monthly

Compliance Status:

Facility had a single month of effluent violations in 2020 and 2021. No other compliance issues.

Completed by: David Roote

Completed date: 4/27/2021

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 6.0 & 6.8
Latitude 40º 18' 13.00" **Longitude** -79º 52' 57.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Existing Facility – 6.0 MGD

The discharge to Peters Creek is approximately 2,200 feet from the Monongahela River. Of that 2,200 feet distance, roughly 400 feet is open stream and the remaining 1,800 feet is culverted under the Penn Central RR & the U.S. Clairton Works. Historically the Monongahela River has been considered the point of first use.

Water Quality Analysis Modeling for CBOD5, DO and Ammonia-Nitrogen is not necessary, and we will again re-impose the above Technology-Based Limitations due to the large dilution available in the Monongahela River. Q7-10 flow of the Monongahela River at the point of discharge is 550 cfs. The instream to wasteflow dilution ration = total stream flow (560.52 cfs) / discharge flow (10.52cfs) = 53/1.

Existing Facility – 6.0 MGD - Water Quality-Based Limitations

A “Reasonable Potential Analysis” (Attachment Toxic Management Spreadsheet, Version 1.3) was conducted.

No WQBEL limitations were determined through water quality modeling and no WQBELs will be imposed on this facility during this permit cycle for the existing facility.

The TMS recommended monitoring for hexavalent chromium, total copper, and total zinc. Due to ongoing STP expansion, the Department will not impose monitoring requirements at this time. A “Reasonable Potential Analysis” will be conducted at the expanded MBR facility during the next permit renewal cycle.

Existing Facility – 6.0 MGD - Best Professional Judgment (BPJ) Limitations

Comments: 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.

Existing Facility – 6.0 MGD – Additional Considerations

For pH, DO and TRC, a monitoring frequency 1/day has been imposed. In general, less frequent monitoring may be established only when the permittee demonstrates that there will be no discharge on days where monitoring is not required.

Sewage discharges will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with a monitoring frequency of 1/month for facilities with a design flows >= 1 MGD per Chapter 92.a.61.

Nutrient monitoring is required to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). A 1/quarter monitor and report requirement for Total N & Total P has been added to the permit per Chapter 92.a.61.

For existing discharges (NPDES Renewal Applications), if WQM7.0 modeling results for summer indicates that an average monthly warm period limit of 25 mg/L (default in model) is acceptable for ammonia-nitrogen, a year-round monitoring requirement, at a minimum should be established. Due to the large dilution ration discussed above, assume that a monthly warm period limit of 25 mg/L is acceptable for ammonia-nitrogen and impose a year-round monitoring requirement for ammonia-nitrogen that is consistent with Table 6-3 of the Permit Writers Manual. Application data for Outfall # 001 indicates that ammonia-nitrogen concentration in the discharge is ND. The QL used was 0.032 mg/L

Mass loading limits are applicable for publicly owned treatment works. Current policy requires average monthly mass loading limits be established for CBOD5, TSS, and NH_3-N and average weekly mass loading limits be established for CBOD5 and TSS. Average monthly mass loading limits (lbs/day) are based on the formula: design flow (MGD) x concentration limit (mg/L) x conversion factor (8.34).

For POTWs with design flows greater than 2,000 GPD influent BOD_5 and TSS monitoring must be established in the permit, and the monitoring should be consistent with the same frequency and sample type as is used for other effluent parameters.

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations. Please note that Monitoring Requirements were changed for Flow to 2/week Metered to be consistent with the guidance.

Expanded Facility – 6.8 MGD

A DEP Aquatic Biologist performed a cause and effect stream survey for Peters Creek and various tributaries in late March and April 2012 and prepared a report dated June 16, 2014. The report concludes the entire Peters Creek watershed is impaired for multiple causes from several sources. Although the aquatic life use of the Peters Creek watershed is severely impaired, the report confirms that there is a use to protect at the point of discharge. For the expanded facility the point of first use is Peters Creek and not the Monongahela River.

The above Technology-Based Limitations for Total Suspended Solids, pH, and Fecal Coliform are applicable.

Expanded Facility – 6.8 MGD - Water Quality-Based Limitations

A "Reasonable Potential Analysis" (Attachment WQM 7.0 Version 1.1 and TRC_CALC Spreadsheet) was conducted.

The following limitations were determined through water quality modeling for the expanded facility (output files attached):

Parameter	Limit (mg/l)	SBC	Model
CBOD5 May 1 - Oct 31	12	Average Monthly	WQM 7.0 Version 1.1
Ammonia May 1 - Oct 31	3.0	Average Monthly	WQM 7.0 Version 1.1
Dissolved Oxygen	6.0	Instantaneous Minimum	WQM 7.0 Version 1.1
Total Residual Chlorine	0.1	Average Monthly	TRC_CALC

The MBR process does not require disinfection based upon the on-site pilot studies to meet effluent limitations. The existing chlorine gas disinfection units will be converted to liquid sodium hypochlorite for chlorination and liquid sodium bisulfite for dichlorination. These units will be available for back up use.

Expanded Facility – 6.8 MGD – Additional Considerations

For pH, DO and TRC, a monitoring frequency 1/day has been imposed. In general, less frequent monitoring may be established only when the permittee demonstrates that there will be no discharge on days where monitoring is not required.

Sewage discharges will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with a monitoring frequency of 1/month for facilities with a design flows >= 1 MGD per Chapter 92.a.61.

Nutrient monitoring is required to establish the nutrient load from the wastewater treatment facility and the impacts that load may have on the quality of the receiving stream(s). A 1/quarter monitor and report requirement for Total N & Total P has been added to the permit per Chapter 92.a.61.

Mass loading limits are applicable for publicly owned treatment works. Current policy requires average monthly mass loading limits be established for CBOD5, TSS, and NH_3-N and average weekly mass loading limits be established for CBOD5 and TSS. Average monthly mass loading limits (lbs/day) are based on the formula: design flow (MGD) x concentration limit (mg/L) x conversion factor (8.34).

For POTWs with design flows greater than 2,000 GPD influent BOD_5 and TSS monitoring must be established in the permit, and the monitoring should be consistent with the same frequency and sample type as is used for other effluent parameters.

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations. Please note that Monitoring Requirements were changed for Flow to 2/week Metered to be consistent with the guidance.

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.

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☐ **Chronic** WET Testing was completed: **N/A**

☐ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☒ Other: **The NPDES Permit Renewal Application was received on August 7, 2013 and the Department later requested an updated application be submitted, which was received on September 30, 2019. Due to ongoing construction at the STP, the Department waived the WET Testing requirement. WET testing shall be conducted within 6 months of plant expansion and then annually for the remainder of the permit cycle. The expected completion date for the expanded STP is January 1, 2024.**

Evaluation of Test Type, IWC and Dilution Series for Renewed Permit

Acute Partial Mix Factor (PMFa): **1** Chronic Partial Mix Factor (PMFc): **1**

1. Determine IWC – Acute (IWCa):

$(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

[(6.8 MGD x 1.547) / ((7.24 cfs x 1) + (6.8 MGD x 1.547))] x 100 = **59%**

Is IWCa < 1%? ☐ **YES** ☒ **NO (YES - Acute Tests Required OR NO - Chronic Tests Required)**

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:

N/A

Type of Test for Permit Renewal: **Chronic Tests**

2a. Determine Target IWCa (If Acute Tests Required)

TIWCa = 0.5923 / 0.3 = **100%**

2b. Determine Target IWCc (If Chronic Tests Required)

$(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

[(6.8 MGD x 1.547) / ((7.24 cfs x 1) + (6.8 MGD x 1.547))] x 100 = **59%**

3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 80%, 59%, 30%, and 15%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

If WET limits will be established, identify the species and the limit values for the permit (TU).

N/A

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

N/A

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 June 30, 2024.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/day	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	1250	1875	XXX	25.0	37.5	50	1/day	24-Hr Composite
TSS	1500	2250	XXX	30.0	45.0	60	1/day	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/day	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ammonia-Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite

Compliance Sampling Location: 001

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: July 1, 2024 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	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/day	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.1	XXX	0.3	1/day	Grab
CBOD5 Nov 1 - Apr 30	1415	2125	XXX	25.0	37.5	50	1/day	24-Hr Composite
CBOD5 May 1 - Oct 31	680	1020	XXX	12.0	18.0	24	1/day	24-Hr Composite
TSS	1700	2550	XXX	30.0	45.0	60	1/day	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/day	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	510	XXX	XXX	9.0	XXX	18	1/day	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	170	XXX	XXX	3.0	XXX	6	1/day	24-Hr Composite

Compliance Sampling Location: 001

Proposed Effluent Limitations and Monitoring Requirements

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

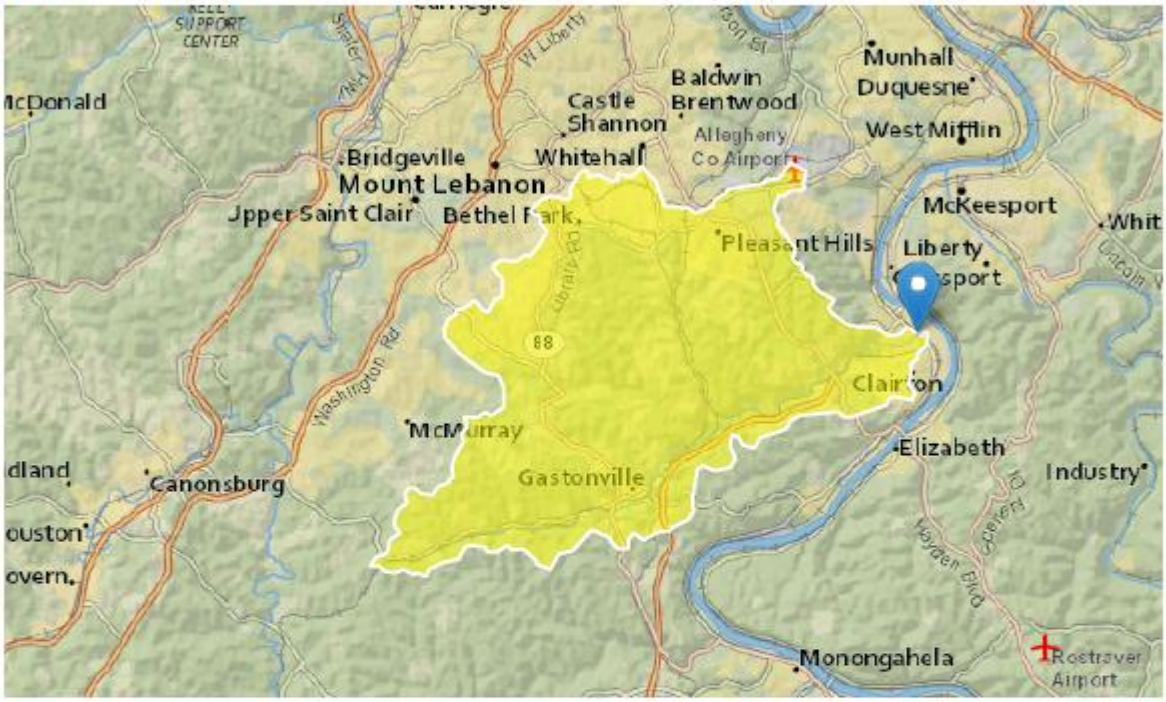
Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Maximum	Instant. Maximum		
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/day	24-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Iron	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Total Manganese	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: 001

StreamStats Report

Region ID: PA
Workspace ID: PA20210429234827477000
Clicked Point (Latitude, Longitude): 40.30458, -79.88131
Time: 2021-04-29 19:48:45 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	51.3	square miles
ELEV	Mean Basin Elevation	1086	feet

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	51.3	square miles	2.26	1400

Existing Facility TMS Analysis – Annual Average Design Flow 6.0 MGD

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Clairton MA STP** NPDES Permit No.: **PA0026824** Outfall No.: **001**

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

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
6	233	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	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		491.9									
	Chloride (PWS)	mg/L		120.78									
	Bromide	mg/L		0.1635									
	Sulfate (PWS)	mg/L		139.65									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		55									
	Total Antimony	µg/L		0.591									
	Total Arsenic	µg/L		1.2									
	Total Barium	µg/L		31									
	Total Beryllium	µg/L	<	0.3									
	Total Boron	µg/L		216									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L		0.8									
	Hexavalent Chromium	µg/L	<	5									
	Total Cobalt	µg/L		1									
	Total Copper	µg/L		10.1									
	Free Cyanide	µg/L	<	0.5									
	Total Cyanide	µg/L		12.6									
	Dissolved Iron	µg/L		26									
	Total Iron	µg/L		249									
	Total Lead	µg/L		0.41									
	Total Manganese	µg/L		59									
	Total Mercury	µg/L	<	0.04									
	Total Nickel	µg/L		5									
	Total Phenols (Phenolics) (PWS)	µg/L	<	0.22									
	Total Selenium	µg/L	<	2									
	Total Silver	µg/L	<	0.9									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	µg/L		34									
	Total Molybdenum	µg/L		3									
	Acrolein	µg/L	<	1.9									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	1.2									
	Benzene	µg/L		0.31									
	Bromoform	µg/L		8.4									

Group 3	Carbon Tetrachloride	µg/L	<	0.31										
	Chlorobenzene	µg/L		0.45										
	Chlorodibromomethane	µg/L	<	0.25										
	Chloroethane	µg/L	<	0.33										
	2-Chloroethyl Vinyl Ether	µg/L	<	0.38										
	Chloroform	µg/L		3.5										
	Dichlorobromomethane	µg/L	<	0.189										
	1,1-Dichloroethane	µg/L	<	0.28										
	1,2-Dichloroethane	µg/L	<	0.32										
	1,1-Dichloroethylene	µg/L	<	0.29										
	1,2-Dichloropropane	µg/L	<	0.24										
	1,3-Dichloropropylene	µg/L	<	0.47										
	1,4-Dioxane	µg/L	<	58.9										
	Ethylbenzene	µg/L	<	0.34										
	Methyl Bromide	µg/L	<	0.39										
	Methyl Chloride	µg/L	<	0.31										
	Methylene Chloride	µg/L	<	0.45										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.34										
	Tetrachloroethylene	µg/L	<	0.35										
	Toluene	µg/L		0.33										
	1,2-trans-Dichloroethylene	µg/L	<	0.26										
	1,1,1-Trichloroethane	µg/L	<	0.22										
	1,1,2-Trichloroethane	µg/L	<	0.33										
	Trichloroethylene	µg/L	<	0.33										
	Vinyl Chloride	µg/L	<	0.3										
Group 4	2-Chlorophenol	µg/L	<	0.32										
	2,4-Dichlorophenol	µg/L	<	0.31										
	2,4-Dimethylphenol	µg/L	<	0.2										
	4,6-Dinitro-o-Cresol	µg/L	<	0.32										
	2,4-Dinitrophenol	µg/L	<	2.4										
	2-Nitrophenol	µg/L	<	0.44										
	4-Nitrophenol	µg/L	<	1										
	p-Chloro-m-Cresol	µg/L	<	0.19										
	Pentachlorophenol	µg/L	<	1.2										
	Phenol	µg/L	<	0.22										
	2,4,6-Trichlorophenol	µg/L	<	0.56										
Group 5	Acenaphthene	µg/L	<	0.15										
	Acenaphthylene	µg/L	<	0.19										
	Anthracene	µg/L	<	0.15										
	Benzidine	µg/L	<	3										
	Benzo(a)Anthracene	µg/L	<	0.17										
	Benzo(a)Pyrene	µg/L	<	0.21										
	3,4-Benzofluoranthene	µg/L	<	0.13										
	Benzo(ghi)Perylene	µg/L	<	0.21										
	Benzo(k)Fluoranthene	µg/L	<	0.19										
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.2										
	Bis(2-Chloroethyl)Ether	µg/L	<	0.19										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.27										
	Bis(2-Ethylhexyl)Phthalate	µg/L		0.26										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.17										
	Butyl Benzyl Phthalate	µg/L	<	0.12										
	2-Chloronaphthalene	µg/L	<	0.18										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.14										
	Chrysene	µg/L	<	0.15										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.2										
	1,2-Dichlorobenzene	µg/L	<	0.38										
	1,3-Dichlorobenzene	µg/L		0.25										
	1,4-Dichlorobenzene	µg/L		0.57										
	3,3-Dichlorobenzidine	µg/L	<	0.47										
	Diethyl Phthalate	µg/L	<	0.18										
	Dimethyl Phthalate	µg/L	<	0.14										
	Di-n-Butyl Phthalate	µg/L	<	0.14										
	2,4-Dinitrotoluene	µg/L	<	2.4										

	2,6-Dinitrotoluene	µg/L	<	0.13									
	Di-n-Octyl Phthalate	µg/L	<	0.098									
	1,2-Diphenylhydrazine	µg/L	<	0.25									
	Fluoranthene	µg/L	<	0.17									
	Fluorene	µg/L	<	0.2									
	Hexachlorobenzene	µg/L	<	0.22									
	Hexachlorobutadiene	µg/L	<	0.19									
	Hexachlorocyclopentadiene	µg/L	<	0.17									
	Hexachloroethane	µg/L	<	0.29									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.12									
	Isophorone	µg/L	<	0.15									
	Naphthalene	µg/L		1.1									
	Nitrobenzene	µg/L	<	3.57									
	n-Nitrosodimethylamine	µg/L	<	0.62									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.23									
	n-Nitrosodiphenylamine	µg/L	<	0.18									
	Phenanthrene	µg/L	<	0.13									
	Pyrene	µg/L	<	0.16									
	1,2,4-Trichlorobenzene	µg/L	<	0.16									
Group 6	Aldrin	µg/L	<	0.0047									
	alpha-BHC	µg/L	<	0.0019									
	beta-BHC	µg/L	<	0.0075									
	gamma-BHC	µg/L	<	0.0028									
	delta BHC	µg/L	<	0.0028									
	Chlordane	µg/L	<	0.033									
	4,4-DDT	µg/L	<	0.0057									
	4,4-DDE	µg/L	<	0.0066									
	4,4-DDD	µg/L	<	0.0066									
	Dieldrin	µg/L	<	0.0028									
	alpha-Endosulfan	µg/L	<	0.0028									
	beta-Endosulfan	µg/L	<	0.0057									
	Endosulfan Sulfate	µg/L	<	0.0038									
	Endrin	µg/L	<	0.0075									
	Endrin Aldehyde	µg/L	<	0.0094									
	Heptachlor	µg/L	<	0.0028									
	Heptachlor Epoxide	µg/L	<	0.0038									
	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	<	0.18									
	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

Clairton MA STP, NPDES Permit No. PA0026824, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: Peters Creek

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	039425	0.42	721.5	51.33	0.0001		Yes
End of Reach 1	039425	0.01	721.28	51.5	0.0001		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	0.42	0.141				40	2.656	0.22				100	7		
End of Reach 1	0.01	0.141													

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	0.42														
End of Reach 1	0.01														

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Toxics Management Spreadsheet
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Model Results

Clairton MA STP, NPDES Permit No. PA0026824, 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)
0.42	7.24		7.24	9.282	0.0001	2.656	40.	15.06	0.22	0.114	9.725
0.01	7.26		7.2615								

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)
0.42	41.91		41.91	9.282	0.0001	4.369	40.	9.156	0.414	0.06	16.097
0.01	42.027		42.03								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 9.725 PMF: 1 Analysis Hardness (mg/l): 174.73 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 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 Aluminum	0	0		0	750	750	1,335	
Total Antimony	0	0		0	1,100	1,100	1,958	
Total Arsenic	0	0		0	340	340	605	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	37,375	
Total Boron	0	0		0	8,100	8,100	14,416	
Total Cadmium	0	0		0	3.463	3.76	6.7	Chem Translator of 0.921 applied
Total Chromium (III)	0	0		0	899.899	2,848	5,068	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	29.0	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	169	
Total Copper	0	0		0	22.737	23.7	42.2	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	39.2	

Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	117.904	166	296	Chem Translator of 0.71 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	2.93	Chem Translator of 0.85 applied
Total Nickel	0	0		0	750.771	752	1,339	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	8.400	9.88	17.6	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	116	
Total Zinc	0	0		0	188.024	192	342	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	5.34	
Acrylonitrile	0	0		0	650	650	1,157	
Benzene	0	0		0	640	640	1,139	
Bromoform	0	0		0	1,800	1,800	3,204	
Carbon Tetrachloride	0	0		0	2,800	2,800	4,983	
Chlorobenzene	0	0		0	1,200	1,200	2,136	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	32,035	
Chloroform	0	0		0	1,900	1,900	3,382	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	26,696	
1,1-Dichloroethylene	0	0		0	7,500	7,500	13,348	
1,2-Dichloropropane	0	0		0	11,000	11,000	19,577	
1,3-Dichloropropylene	0	0		0	310	310	552	
Ethylbenzene	0	0		0	2,900	2,900	5,161	
Methyl Bromide	0	0		0	550	550	979	
Methyl Chloride	0	0		0	28,000	28,000	49,833	
Methylene Chloride	0	0		0	12,000	12,000	21,357	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,780	
Tetrachloroethylene	0	0		0	700	700	1,246	
Toluene	0	0		0	1,700	1,700	3,026	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	12,102	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	5,339	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	6,051	
Trichloroethylene	0	0		0	2,300	2,300	4,093	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	997	
2,4-Dichlorophenol	0	0		0	1,700	1,700	3,026	
2,4-Dimethylphenol	0	0		0	660	660	1,175	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	142	
2,4-Dinitrophenol	0	0		0	660	660	1,175	
2-Nitrophenol	0	0		0	8,000	8,000	14,238	
4-Nitrophenol	0	0		0	2,300	2,300	4,093	
p-Chloro-m-Cresol	0	0		0	160	160	285	
Pentachlorophenol	0	0		0	8.723	8.72	15.5	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	819	

Acenaphthene	0	0		0	83	83.0	148	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	534	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.89	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	53,392	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	8,009	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	481	
Butyl Benzyl Phthalate	0	0		0	140	140	249	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	1,459	
1,3-Dichlorobenzene	0	0		0	350	350	623	
1,4-Dichlorobenzene	0	0		0	730	730	1,299	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	7,119	
Dimethyl Phthalate	0	0		0	2,500	2,500	4,449	
Di-n-Butyl Phthalate	0	0		0	110	110	196	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	2,848	
2,6-Dinitrotoluene	0	0		0	990	990	1,762	
1,2-Diphenylhydrazine	0	0		0	15	15.0	26.7	
Fluoranthene	0	0		0	200	200	356	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	17.8	
Hexachlorocyclopentadiene	0	0		0	5	5.0	8.9	
Hexachloroethane	0	0		0	60	60.0	107	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	17,797	
Naphthalene	0	0		0	140	140	249	
Nitrobenzene	0	0		0	4,000	4,000	7,119	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	30,256	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	534	
Phenanthrene	0	0		0	5	5.0	8.9	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	231	
Aldrin	0	0		0	3	3.0	5.34	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	0.95	0.95	1.69	
Chlordane	0	0		0	2.4	2.4	4.27	
4,4-DDT	0	0		0	1.1	1.1	1.96	
4,4-DDE	0	0		0	1.1	1.1	1.96	

4,4-DDD	0	0		0	1.1	1.1	1.96	
Dieldrin	0	0		0	0.24	0.24	0.43	
alpha-Endosulfan	0	0		0	0.22	0.22	0.39	
beta-Endosulfan	0	0		0	0.22	0.22	0.39	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	0.15	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	0.93	
Heptachlor Epoxide	0	0		0	0.5	0.5	0.89	
Toxaphene	0	0		0	0.73	0.73	1.3	

☑ *CFC* CCT (min): 9.725 PMF: 1 Analysis Hardness (mg/l): 174.73 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 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	392	
Total Arsenic	0	0		0	150	150	267	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	7,297	
Total Boron	0	0		0	1,600	1,600	2,848	
Total Cadmium	0	0		0	0.362	0.41	0.73	Chem Translator of 0.886 applied
Total Chromium (III)	0	0		0	117.058	136	242	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	18.5	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	33.8	
Total Copper	0	0		0	14.428	15.0	26.7	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	9.25	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	2,670	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	4.595	6.47	11.5	Chem Translator of 0.71 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.61	Chem Translator of 0.85 applied
Total Nickel	0	0		0	83.388	83.6	149	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	8.88	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	23.1	
Total Zinc	0	0		0	189.562	192	342	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	5.34	
Acrylonitrile	0	0		0	130	130	231	
Benzene	0	0		0	130	130	231	
Bromoform	0	0		0	370	370	659	
Carbon Tetrachloride	0	0		0	560	560	997	
Chlorobenzene	0	0		0	240	240	427	

Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	6,229	
Chloroform	0	0		0	390	390	694	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	5,517	
1,1-Dichloroethylene	0	0		0	1,500	1,500	2,670	
1,2-Dichloropropane	0	0		0	2,200	2,200	3,915	
1,3-Dichloropropylene	0	0		0	61	61.0	109	
Ethylbenzene	0	0		0	580	580	1,032	
Methyl Bromide	0	0		0	110	110	196	
Methyl Chloride	0	0		0	5,500	5,500	9,789	
Methylene Chloride	0	0		0	2,400	2,400	4,271	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	374	
Tetrachloroethylene	0	0		0	140	140	249	
Toluene	0	0		0	330	330	587	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	2,492	
1,1,1-Trichloroethane	0	0		0	610	610	1,086	
1,1,2-Trichloroethane	0	0		0	680	680	1,210	
Trichloroethylene	0	0		0	450	450	801	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	196	
2,4-Dichlorophenol	0	0		0	340	340	605	
2,4-Dimethylphenol	0	0		0	130	130	231	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	28.5	
2,4-Dinitrophenol	0	0		0	130	130	231	
2-Nitrophenol	0	0		0	1,600	1,600	2,848	
4-Nitrophenol	0	0		0	470	470	836	
p-Chloro-m-Cresol	0	0		0	500	500	890	
Pentachlorophenol	0	0		0	6.693	6.69	11.9	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	162	
Acenaphthene	0	0		0	17	17.0	30.3	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	105	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.18	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	10,678	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,620	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	96.1	
Butyl Benzyl Phthalate	0	0		0	35	35.0	62.3	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	

Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	285	
1,3-Dichlorobenzene	0	0		0	69	69.0	123	
1,4-Dichlorobenzene	0	0		0	150	150	267	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	1,424	
Dimethyl Phthalate	0	0		0	500	500	890	
Di-n-Butyl Phthalate	0	0		0	21	21.0	37.4	
2,4-Dinitrotoluene	0	0		0	320	320	570	
2,6-Dinitrotoluene	0	0		0	200	200	356	
1,2-Diphenylhydrazine	0	0		0	3	3.0	5.34	
Fluoranthene	0	0		0	40	40.0	71.2	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	3.56	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.78	
Hexachloroethane	0	0		0	12	12.0	21.4	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	3,737	
Naphthalene	0	0		0	43	43.0	76.5	
Nitrobenzene	0	0		0	810	810	1,442	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	6,051	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	105	
Phenanthrene	0	0		0	1	1.0	1.78	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	46.3	
Aldrin	0	0		0	0.1	0.1	0.18	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0043	0.004	0.008	
4,4-DDT	0	0		0	0.001	0.001	0.002	
4,4-DDE	0	0		0	0.001	0.001	0.002	
4,4-DDD	0	0		0	0.001	0.001	0.002	
Dieldrin	0	0		0	0.056	0.056	0.1	
alpha-Endosulfan	0	0		0	0.056	0.056	0.1	
beta-Endosulfan	0	0		0	0.056	0.056	0.1	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	0.064	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	0.007	
Heptachlor Epoxide	0	0		0	0.0038	0.004	0.007	
Toxaphene	0	0		0	0.0002	0.0002	0.0004	

☑ *THH* CCT (min): 9.725 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	9.97	
Total Arsenic	0	0		0	10	10.0	17.8	
Total Barium	0	0		0	2,400	2,400	4,271	
Total Boron	0	0		0	3,100	3,100	5,517	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	7.12	
Dissolved Iron	0	0		0	300	300	534	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,780	
Total Mercury	0	0		0	0.050	0.05	0.089	
Total Nickel	0	0		0	610	610	1,086	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.43	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	5.34	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	178	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	58.7	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	121	
Methyl Bromide	0	0		0	100	100.0	178	

Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	101	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	178	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	17,797	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	53.4	
2,4-Dichlorophenol	0	0		0	10	10.0	17.8	
2,4-Dimethylphenol	0	0		0	100	100.0	178	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	3.56	
2,4-Dinitrophenol	0	0		0	10	10.0	17.8	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	7,119	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	125	
Anthracene	0	0		0	300	300	534	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	356	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.18	
2-Chloronaphthalene	0	0		0	800	800	1,424	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,780	
1,3-Dichlorobenzene	0	0		0	7	7.0	12.5	
1,4-Dichlorobenzene	0	0		0	300	300	534	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	1,068	
Dimethyl Phthalate	0	0		0	2,000	2,000	3,559	
Di-n-Butyl Phthalate	0	0		0	20	20.0	35.6	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	

1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	35.6	
Fluorene	0	0		0	50	50.0	89.0	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	7.12	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	60.5	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	17.8	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	35.6	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.12	
Aldrin	0	0		0	N/A	N/A	N/A	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	4.2	4.2	7.47	
Chlordane	0	0		0	N/A	N/A	N/A	
4,4-DDT	0	0		0	N/A	N/A	N/A	
4,4-DDE	0	0		0	N/A	N/A	N/A	
4,4-DDD	0	0		0	N/A	N/A	N/A	
Dieldrin	0	0		0	N/A	N/A	N/A	
alpha-Endosulfan	0	0		0	20	20.0	35.6	
beta-Endosulfan	0	0		0	20	20.0	35.6	
Endosulfan Sulfate	0	0		0	20	20.0	35.6	
Endrin	0	0		0	0.03	0.03	0.053	
Endrin Aldehyde	0	0		0	1	1.0	1.78	
Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	
Toxaphene	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 16.097 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 Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	

Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	0.33	
Benzene	0	0		0	0.58	0.58	3.2	
Bromoform	0	0		0	7	7.0	38.6	
Carbon Tetrachloride	0	0		0	0.4	0.4	2.21	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	4.41	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	31.4	
Dichlorobromomethane	0	0		0	0.95	0.95	5.24	
1,2-Dichloroethane	0	0		0	9.9	9.9	54.6	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	4.96	
1,3-Dichloropropylene	0	0		0	0.27	0.27	1.49	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	110	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	1.1	
Tetrachloroethylene	0	0		0	10	10.0	55.1	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	3.03	
Trichloroethylene	0	0		0	0.6	0.6	3.31	
Vinyl Chloride	0	0		0	0.02	0.02	0.11	

2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.17	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	8.27	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.0006	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.006	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0006	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.006	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.055	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.17	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	1.76	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	0.66	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0006	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.28	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.28	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.28	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.17	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0004	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.055	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.55	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.006	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	

Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.004	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.028	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	18.2	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	
Aldrin	0	0		0	0.0000008	8.00E-07	0.000004	
alpha-BHC	0	0		0	0.0004	0.0004	0.002	
beta-BHC	0	0		0	0.008	0.008	0.044	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.002	
4,4-DDT	0	0		0	0.00003	0.00003	0.0002	
4,4-DDE	0	0		0	0.00002	0.00002	0.0001	
4,4-DDD	0	0		0	0.0001	0.0001	0.0006	
Dieldrin	0	0		0	0.000001	0.000001	0.000006	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
beta-Endosulfan	0	0		0	N/A	N/A	N/A	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	N/A	N/A	N/A	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.000006	0.000006	0.00003	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.0002	
Toxaphene	0	0		0	0.0007	0.0007	0.004	

☑ ***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
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	18.5	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	26.7	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	219	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***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 Aluminum	856	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	9.97	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	17.8	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	4,271	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	2,848	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	0.73	µg/L	Discharge Conc < TQL
Total Chromium (III)	242	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	33.8	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	7.12	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	534	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	2,670	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	11.5	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	1,780	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.089	µg/L	Discharge Conc < TQL
Total Nickel	149	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	8.88	µg/L	Discharge Conc < TQL
Total Silver	11.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	0.43	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.42	µg/L	Discharge Conc < TQL
Acrylonitrile	0.33	µg/L	Discharge Conc < TQL
Benzene	3.2	µg/L	Discharge Conc ≤ 25% WQBEL
Bromoform	38.6	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	2.21	µg/L	Discharge Conc < TQL
Chlorobenzene	178	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	4.41	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	6,229	µg/L	Discharge Conc < TQL
Chloroform	31.4	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	5.24	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	54.6	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	58.7	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	4.96	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	1.49	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	121	µg/L	Discharge Conc < TQL
Methyl Bromide	178	µg/L	Discharge Conc < TQL
Methyl Chloride	9,789	µg/L	Discharge Conc < TQL
Methylene Chloride	110	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	1.1	µg/L	Discharge Conc < TQL

Tetrachloroethylene	55.1	µg/L	Discharge Conc < TQL
Toluene	101	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	178	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	1,086	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	3.03	µg/L	Discharge Conc < TQL
Trichloroethylene	3.31	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.11	µg/L	Discharge Conc < TQL
2-Chlorophenol	53.4	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	17.8	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	178	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	3.56	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	17.8	µg/L	Discharge Conc < TQL
2-Nitrophenol	2,848	µg/L	Discharge Conc < TQL
4-Nitrophenol	836	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	183	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.17	µg/L	Discharge Conc < TQL
Phenol	7,119	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	8.27	µg/L	Discharge Conc < TQL
Acenaphthene	30.3	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	534	µg/L	Discharge Conc < TQL
Benzidine	0.0006	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.006	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0006	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.006	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.055	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.17	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	356	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	1.76	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	96.1	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.18	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	1,424	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.66	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.0006	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	285	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	12.5	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dichlorobenzene	267	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	0.28	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,068	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	890	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	35.6	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.28	µg/L	Discharge Conc < TQL

2,6-Dinitrotoluene	0.28	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.17	µg/L	Discharge Conc < TQL
Fluoranthene	35.6	µg/L	Discharge Conc < TQL
Fluorene	89.0	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0004	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.055	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.78	µg/L	Discharge Conc < TQL
Hexachloroethane	0.55	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.006	µg/L	Discharge Conc < TQL
Isophorone	60.5	µg/L	Discharge Conc < TQL
Naphthalene	76.5	µg/L	Discharge Conc ≤ 25% WQBEL
Nitrobenzene	17.8	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.004	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.028	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	18.2	µg/L	Discharge Conc < TQL
Phenanthrene	1.78	µg/L	Discharge Conc < TQL
Pyrene	35.6	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.12	µg/L	Discharge Conc < TQL
Aldrin	0.000004	µg/L	Discharge Conc < TQL
alpha-BHC	0.002	µg/L	Discharge Conc < TQL
beta-BHC	0.044	µg/L	Discharge Conc < TQL
gamma-BHC	1.08	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.002	µg/L	Discharge Conc < TQL
4,4-DDT	0.0002	µg/L	Discharge Conc < TQL
4,4-DDE	0.0001	µg/L	Discharge Conc < TQL
4,4-DDD	0.0006	µg/L	Discharge Conc < TQL
Dieldrin	0.000006	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.1	µg/L	Discharge Conc < TQL
beta-Endosulfan	0.1	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	35.6	µg/L	Discharge Conc < TQL
Endrin	0.053	µg/L	Discharge Conc < TQL
Endrin Aldehyde	1.78	µg/L	Discharge Conc < TQL
Heptachlor	0.00003	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.0002	µg/L	Discharge Conc < TQL
Toxaphene	0.0004	µg/L	Discharge Conc < TQL

Expanded Facility WQM 7.0 Warm Period NH3-N Evaluation
Annual Average Design Flow 6.8 MGD

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
19C	39425	PETERS CREEK	0.420	721.50	51.33	0.00010	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	0.141	0.00	0.00	0.000	0.220	0.0	40.00	2.66	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Clairton MA STP	PA0026824	0.0000	6.8000	0.0000	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	3.00	8.24	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
19C	39425	PETERS CREEK	0.010	721.28	51.50	0.00010	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	0.141	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		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 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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												
0.420	7.24	0.00	0.00	10.5196	0.00010	0	0	0	0.00	0.000	0.00	0.00
Q1-10 Flow												
0.420	4.63	0.00	4.63	10.5196	0.00010	NA	NA	NA	0.14	0.176	21.53	7.00
Q30-10 Flow												
0.420	9.84	0.00	9.84	10.5196	0.00010	NA	NA	NA	0.19	0.131	22.42	7.00

WQM 7.0 Modeling Specifications

Parameters	NH3-N	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Uniform Treatme	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 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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
0.420	Clairton MA STP	NA	50	14.77	21.27	1	57

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.420	Clairton MA STP	NA	25	1.61	3.13	1	87

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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)
0.420	Clairton MA STP	PA0026824	0.000	CBOD5	999		
				NH3-N	3.13	6.26	
				Dissolved Oxygen			NA

Expanded Facility WQM 7.0 Cold Period NH3-N Evaluation
Annual Average Design Flow 6.8 MGD

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
19C	39425	PETERS CREEK	0.420	721.50	51.33	0.00010	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	0.282	0.00	0.00	0.000	0.220	0.0	40.00	2.66	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
Clairton MA STP	PA0026824	0.0000	6.8000	0.0000	0.000	15.00	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

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
19C	39425	PETERS CREEK	0.010	721.28	51.50	0.00010	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	0.282	0.00	0.00	0.000	0.000	0.0	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 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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												
0.420	14.48	0.00	0.00	10.5196	0.00010	0	0	0	0.00	0.000	0.00	0.00
Q1-10 Flow												
0.420	9.26	0.00	9.26	10.5196	0.00010	NA	NA	NA	0.19	0.135	10.32	7.00
Q30-10 Flow												
0.420	19.69	0.00	19.69	10.5196	0.00010	NA	NA	NA	0.28	0.088	8.48	7.00

WQM 7.0 Modeling Specifications

Parameters	NH3-N	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Uniform Treatme	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 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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
0.420	Clairton MA STP	NA	50	24.1	45.33	1	9

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.420	Clairton MA STP	NA	25	3.97	11.39	1	54

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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)
0.420	Clairton MA STP	PA0026824	0.000	CBOD5	999		
				NH3-N	11.39	22.78	
				Dissolved Oxygen			NA

Expanded Facility WQM 7.0 Warm Period CBOD5 & DO Evaluation
Annual Average Design Flow 6.8 MGD

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
19C	39425	PETERS CREEK	0.420	721.50	51.33	0.00010	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	0.141	0.00	0.00	0.000	0.220	0.0	40.00	2.66	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Clairton MA STP	PA0026824	0.0000	6.8000	0.0000	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	6.00	8.24	0.00	0.00
NH3-N	3.00	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
19C	39425	PETERS CREEK	0.010	721.28	51.50	0.00010	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	0.141	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		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 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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												
0.420	7.24	0.00	7.24	10.5196	0.00010	2.656	30.39	11.44	0.22	0.114	22.04	7.00
Q1-10 Flow												
0.420	4.63	0.00	4.63	10.5196	0.00010	NA	NA	NA	0.14	0.176	21.53	7.00
Q30-10 Flow												
0.420	9.84	0.00	9.84	10.5196	0.00010	NA	NA	NA	0.19	0.131	22.42	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Uniform Treatme	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 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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
0.420	Clairton MA STP	NA	6	14.77	6	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.420	Clairton MA STP	NA	3	1.61	3	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)		
0.42	Clairton MA STP	25	9.64	3	2.89	6	6	1	46

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.420	6.800	22.038	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
30.389	2.656	11.442	0.220
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
6.53	0.504	1.71	0.819
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.914	1.467	O'Connor	6
Reach Travel Time (days)			
0.114			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.011	6.48	1.70	6.81
0.023	6.44	1.68	6.71
0.034	6.40	1.67	6.62
0.046	6.36	1.65	6.52
0.057	6.32	1.63	6.43
0.068	6.28	1.62	6.35
0.080	6.24	1.60	6.26
0.091	6.20	1.59	6.18
0.102	6.17	1.58	6.10
0.114	6.13	1.56	6.02

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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)
0.420	Clairton MA STP	PA0026824	0.000	CBOD5	9.64		
				NH3-N	2.89	5.78	
				Dissolved Oxygen			6

Expanded Facility WQM 7.0 Warm Period CBOD5 & DO Evaluation
Annual Average Design Flow 6.8 MGD
Doubled kR = 2.93

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
19C	39425	PETERS CREEK	0.420	721.50	51.33	0.00010	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	0.141	0.00	0.00	0.000	0.220	0.0	40.00	2.66	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Clairton MA STP	PA0026824	0.0000	6.8000	0.0000	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	6.00	8.24	0.00	2.93
NH3-N	3.00	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
19C	39425	PETERS CREEK	0.010	721.28	51.50	0.00010	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	0.141	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		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 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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												
0.420	7.24	0.00	7.24	10.5196	0.00010	2.656	30.39	11.44	0.22	0.114	22.04	7.00
Q1-10 Flow												
0.420	4.63	0.00	4.63	10.5196	0.00010	NA	NA	NA	0.14	0.176	21.53	7.00
Q30-10 Flow												
0.420	9.84	0.00	9.84	10.5196	0.00010	NA	NA	NA	0.19	0.131	22.42	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Uniform Treatme	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 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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
0.420	Clairton MA STP	NA	6	14.77	6	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.420	Clairton MA STP	NA	3	1.61	3	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)		
0.42	Clairton MA STP	25	12.38	3	3	6	6	1	37

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.420	6.800	22.038	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
30.389	2.656	11.442	0.220
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
8.15	0.665	1.78	0.819
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.914	3.079	User Supplied	6
Reach Travel Time (days)			
0.114			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.011	8.08	1.76	6.81
0.023	8.01	1.74	6.70
0.034	7.95	1.73	6.61
0.046	7.88	1.71	6.51
0.057	7.82	1.70	6.43
0.068	7.75	1.68	6.34
0.080	7.69	1.66	6.26
0.091	7.62	1.65	6.19
0.102	7.56	1.63	6.12
0.114	7.50	1.62	6.05

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- **Additional dilution provided by the Monongahela River will preclude DO sag below criteria of 6 mg/L.**

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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)
0.420	Clairton MA STP	PA0026824	0.000	CBOD5	12.38		
				NH3-N	3	6	
				Dissolved Oxygen			6

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- **Proposed warm temperature limits for CBOD5, NH3-N, and DO.**

Expanded Facility WQM 7.0 Cold Period CBOD5 & DO Evaluation
Annual Average Design Flow 6.8 MGD

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
19C	39425	PETERS CREEK	0.420	721.50	51.33	0.00010	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	0.282	0.00	0.00	0.000	0.220	0.0	40.00	2.66	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
Clairton MA STP	PA0026824	0.0000	6.8000	0.0000	0.000	15.00	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	6.00	11.50	0.00	0.00
NH3-N	11.00	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
19C	39425	PETERS CREEK	0.010	721.28	51.50	0.00010	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	0.282	0.00	0.00	0.000	0.000	0.0	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 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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												
0.420	14.48	0.00	14.48	10.5196	0.00010	2.656	42.78	16.11	0.22	0.114	9.21	7.00
Q1-10 Flow												
0.420	9.26	0.00	9.26	10.5196	0.00010	NA	NA	NA	0.19	0.135	10.32	7.00
Q30-10 Flow												
0.420	19.69	0.00	19.69	10.5196	0.00010	NA	NA	NA	0.28	0.088	8.48	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	Uniform Treatme	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 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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
0.420	Clairton MA STP	NA	22	24.1	22	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
0.420	Clairton MA STP	NA	11	3.97	11	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)		
0.42	Clairton MA STP	25	25	11	11	6	6	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.420	6.800	9.209	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
42.776	2.656	16.105	0.220
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
11.68	1.344	4.63	0.305
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
9.185	1.082	O'Connor	6
Reach Travel Time (days)			
0.114			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.011	11.57	4.61	8.98
0.023	11.46	4.60	8.78
0.034	11.36	4.58	8.58
0.046	11.25	4.57	8.38
0.057	11.15	4.55	8.19
0.068	11.04	4.53	8.01
0.080	10.94	4.52	7.83
0.091	10.84	4.50	7.65
0.102	10.74	4.49	7.48
0.114	10.64	4.47	7.30

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19C	39425	PETERS 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)
0.420	Clairton MA STP	PA0026824	0.000	CBOD5	25		
				NH3-N	11	22	
				Dissolved Oxygen			6

Expanded Facility TRC_CALC - Annual Average Design Flow 6.8 MGD

TRC_CALC

TRC EVALUATION

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

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.239	1.3.2.iii	WLA cfc = 0.225
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.089	5.1d	LTA_cfc = 0.131

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.109	AFC
		INST MAX LIMIT (mg/l) = 0.358	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

Expanded Facility PMF - Annual Average Design Flow 6.8 MGD

Applicant:	Clairton Municipal Authority
Name of plant:	Clairton Municipal Authority STP
Permit Number:	PA0026824
Municipality:	City of Clairton
County:	Allegheny
Receiving stream:	Peters Creek

The following program will calulate partial mix factors for acute and chronic conditions:

calculated fields

net stream flow (Qs cfs)=	7.24
discharge flow (Qd mgd)=	6.8
velocity (fps)=	0.22
width (feet) =	40
depth (feet) =	2.66
slope (ft/ft) =	0.0001

complete mix time (min) = 8.38

FOR ACUTE CONDITIONS: IF COMPLETE MIX TIME < 15 MINUTES
THEN PMF = 1, IF > 15 MINUTES CALCULATE PMFa

PMFa = 1.000
or 100.00 %

FOR CHRONIC CONDITIONS: IF COMPLETE MIX TIME < 720 MINUTES
THEN PMF = 1, IF > 720 MINUTES CALCULATE PMFc

PMFc = 1.000
or 100.00 %

IWCc=[Qd * 1.547] / [(Qs*PMFc) + (Qd * 1.547)] = 0.5923

Target IWCc=IWCc/1= 0.592 59.23 %

IWCa=[Qd * 1.547] / [(Qs*PMFa) + (Qd * 1.547)] = 0.5923

Target IWCa=IWCa/0.3= 1.000 or 100.00 %

WET tests should pass if percentage for C.dubia LC50 and P.promelas LC50 are greater than the target IWCa (acute) or NOEC > target IWCc (chronic).

Program written by David Ponchione on April 8, 1999

Program run by : W. Mitchell on April 27, 2021

For Department use only

Expanded Facility WET Summary - Annual Average Design Flow 6.8 MGD

WET Summary and Evaluation

Facility Name	Clairton Municipal Authority STP
Permit No.	PA0026824
Design Flow (MGD)	6.8
Q_{7-10} Flow (cfs)	7.24
PMF_a	1
PMF_c	1

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**
TIWC	**59** % Effluent
Dilution Series	**15, 30, 59, 80, 100** % Effluent
Permit Limit	**None**
Permit Limit Species	