pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0026913**
Facility Type	**Non-Municipal**	APS ID	**1068341**
Major / Minor	**Major**	Authorization ID	**1404768**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**PA American Water Co.**	Facility Name	**Municipal Authority of the City of McKeesport (MACM)**
Applicant Address	100 Atlantic Avenue	Facility Address	100 Atlantic Avenue
	McKeesport, PA 15132-3807		McKeesport, PA 15132-3807
Applicant Contact	Charles Schultz	Facility Contact	
Applicant Phone	(412) 673-9701	Facility Phone	
Client ID	87712	Site ID	260973
Ch 94 Load Status	Not Overloaded	Municipality	McKeesport City
Connection Status		County	Allegheny
Date Application Received	December 7, 2021	EPA Waived?	No
Date Application Accepted	August 1, 2022	If No, Reason	Major Facility, Pretreatment

Purpose of Application: Renewal application to discharge treated sewage

Summary of Review

This review is in response to a renewal application received on December 7, 2021. Sewage from McKeesport, Elizabeth Township, North Versailles Township, East McKeesport Borough, Glassport Borough, White Oak Borough, Port Vue Borough, Liberty Borough, Lincoln Borough and Versailles Borough is collected and treated at the McKeesport Sewage Treatment Plant. PA American Water Company owns and operates the sewage treatment plant. The sewage plant has two treatment trains. One train is a conventional activated sludge treatment plant with chlorine disinfection. The second train is a sequencing batch reactor with UV disinfection. The city of McKeesport's collection system is 80 % combined storm water and sewage. As such, this permit has an additional 30 outfalls that discharge combined sewage and storm water during wet weather events.

Sludge use and disposal description and location(s): sludge is sent to Sanitary Landfill in Belle Vernon, Westmoreland County for disposal.

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.

Approve	Deny	Signatures	Date
X		James Vanek James Vanek, P.E. / Environmental Engineer	September 5, 2025
X		Mahbuba Iasmin Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	September 15, 2025

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	19.0
Latitude	40º 21' 14.46"	Longitude	-79º 52' 35.90"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Monongahela River (WWF)	Stream Code	37185
NHD Com ID	99408226	RMI	16
Drainage Area	5410 mi^2	Yield (cfs/mi^2)	0.196
Q_{7-10} Flow (cfs)	1060	Q_{7-10} Basis	Army Corps of Engineers regulated waterway
Elevation (ft)	719	Slope (ft/ft)	0.001
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	none	Exceptions to Criteria	none
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake		West View Water Authority	
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	20

Changes Since Last Permit Issuance: Plant rerated to 19.0 MGD.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004	Design Flow (MGD)	0
Latitude	40º 21' 15"	Longitude	-79º 52' 30"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	99408226	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0
Latitude	40º 21' 00"	Longitude	-79º 52' 40"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Erie Street		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	99408226	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006	Design Flow (MGD)	0
Latitude	40º 20' 50"	Longitude	-79º 52' 30"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Ann Street		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	99408226	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	0
Latitude	40º 20' 40"	Longitude	-79º 52' 20"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Dale Street		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	008	Design Flow (MGD)	0
Latitude	40º 20' 30"	Longitude	-79º 52' 10"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Perry Street		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	009	Design Flow (MGD)	0
Latitude	40º 20' 20"	Longitude	-79º 52' 00"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Windsor Street		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	69911869	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	010	Design Flow (MGD)	0
Latitude	40º 20' 05"	Longitude	-79º 51' 55"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Morgan Alley		
Receiving Waters	Monongahela River	Stream Code	
NHD Com ID	69911869	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	012	Design Flow (MGD)	0
Latitude	40º 21' 05"	Longitude	-79º 52' 12"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Fourth Avenue		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	0.7800
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	013	Design Flow (MGD)	0
Latitude	40º 21' 03"	Longitude	-79º 51' 10"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Fifth Avenue		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	014	Design Flow (MGD)	0
Latitude	40º 21' 00"	Longitude	-79º 52' 08"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Sixth Avenue		
Receiving Waters	Youghiogheny River	Stream Code	
NHD Com ID	134839841	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	STREAMBANK MODIFICATIONS/DESTABILIZATION		
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	015	Design Flow (MGD)	0
Latitude	40º 20' 57"	Longitude	-79º 52' 06"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Seventh Avenue		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	018	Design Flow (MGD)	0
Latitude	40º 20' 47"	Longitude	-79º 52' 06"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Ninth Avenue (017 combined with 018)		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	020	Design Flow (MGD)	0
Latitude	40º 20' 42"	Longitude	-79º 52' 55"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Eleventh Avenue		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	1.1600
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	021	Design Flow (MGD)	0
Latitude	40º 20' 33"	Longitude	-79º 52' 52"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Twelfth Avenue		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	022	Design Flow (MGD)	0
Latitude	40º 20' 30"	Longitude	-79º 51' 46"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Thirteenth Avenue		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	99408226	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	023	Design Flow (MGD)	0
Latitude	40º 19' 50"	Longitude	-79º 51' 20"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Twenty Eighth Avenue		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	99408226	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	024	Design Flow (MGD)	0
Latitude	40º 19' 53"	Longitude	-79º 50' 22"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Eden Park Boulevard		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	025	Design Flow (MGD)	0
Latitude	40º 21' 20"	Longitude	-79º 52' 05"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Walnut Street		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	69911877	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	026	Design Flow (MGD)	0
Latitude	40º 21' 20"	Longitude	-79º 51' 50"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Walnut Street		
Receiving Waters	Monongahela River	Stream Code	
NHD Com ID	69911867	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	TSF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS		
Source(s) of Impairment	ACID MINE DRAINAGE		
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	027	Design Flow (MGD)	0
Latitude	40º 21' 20"	Longitude	-79º 51' 50"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Huey Street		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	99408226	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	028	Design Flow (MGD)	0
Latitude	40º 21' 20"	Longitude	-79º 51' 42"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Martin Street		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	99408226	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	029	Design Flow (MGD)	0
Latitude	40º 21' 20"	Longitude	-79º 51' 52"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Center Street		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	99408226	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	030	Design Flow (MGD)	0
Latitude	40º 21' 20"	Longitude	-79º 51' 20"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Evans Avenue		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	99408094	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	031	Design Flow (MGD)	0
Latitude	40º 21' 20"	Longitude	-79º 51' 55"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow White Street		
Receiving Waters	Monongahela River (WWF)	Stream Code	
NHD Com ID	99408226	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	032	Design Flow (MGD)	0
Latitude	40º 20' 55"	Longitude	-79º 51' 15"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Cliff Street		
Receiving Waters	Crooked Run	Stream Code	
NHD Com ID	99408094	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	033	Design Flow (MGD)	0
Latitude	40º 20' 55"	Longitude	-79º 51' 15"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Cliff Street		
Receiving Waters	Crooked Run	Stream Code	
NHD Com ID	99408094	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-A	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Monongahela River TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	PV-01	Design Flow (MGD)	0
Latitude	40º 19' 51"	Longitude	-79º 51' 11"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Port Vue CSO Outfall 1		
Receiving Waters	Unnamed tributary to the Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	PV-02	Design Flow (MGD)	0
Latitude	40º 20' 04"	Longitude	-79º 51' 06"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Port Vue CSO Outfall 2		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	PV-04	Design Flow (MGD)	0
Latitude	40º 20' 37"	Longitude	-79º 52' 19"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Port Vue CSO Outfall 4		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Discharge, Receiving Waters and Water Supply Information

Outfall No.	PV-05	Design Flow (MGD)	0
Latitude	40º 20' 37"	Longitude	-79º 51' 51"
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow Port Vue CSO Outfall 5		
Receiving Waters	Youghiogheny River (WWF)	Stream Code	
NHD Com ID	69911803	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	19-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Not Assessed		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Treatment Facility Summary				
Treatment Facility Name: McKeesport STP				
WQM Permit No.	**Issuance Date**			
0271419	7/27/2010			
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Conventional activated sludge and SBR	Gas Chlorine and UV	19.0
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
19.0		Not Overloaded	Centrifuge	Landfill

Changes Since Last Permit Issuance:

Other Comments:

Compliance History

Effluent Violations for Outfall 001, from: August 1, 2022 To: June 30, 2023

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	04/30/23	Geo Mean	> 8.0	No./100 ml	2000	No./100 ml
Fecal Coliform	05/31/23	IMAX	11199	No./100 ml	1000	No./100 ml
Fecal Coliform	04/30/23	IMAX	> 2419.6	No./100 ml	10000	No./100 ml

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 19.0
Latitude 40º 21' 11.00" **Longitude** -79º 52' 20.00"
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)

The TSS and pH limits are the same as those in EPA's secondary treatment regulation (40 CFR § 133.102).

Average monthly and maximum daily flow must be reported pursuant to 25 Pa. Code § 92a.61(d)(1). The minimum dissolved oxygen limit of 4.0 mg/L imposed in the previous permit will be reimposed in the new permit pursuant to 25 Pa. Code § 92a.61(b) (regarding reasonable monitoring requirements) and BPJ.

In accordance with Section I of DEP's "Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits" [SOP No. BCW-PMT-033, Version 1.9, March 22, 2021] and under the authority of 25 Pa. Code § 92a.61(b), annual reporting for Total Nitrogen and Total Phosphorus is required for sewage discharges with design flows greater than 2,000 gpd to help evaluate treatment effectiveness and to monitor nutrient loading to the receiving watershed. Pursuant to that same SOP and under the authority of § 92a.61(b), monthly reporting for *E. coli* will be added to Outfall 001. *E. coli* was recently added to the bacteria water quality criteria in 25 Pa. Code § 93.7(a) and the monitoring will be used to determine if *E. coli* concentrations require additional controls.

MACM STP uses chlorine and UV for disinfection. The SBR's effluent is disinfected with UV radiation. The conventional activated sludge plant/train uses chlorine disinfection.

Water Quality-Based Limitations

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
Hexavalent Chromium	Report	Average Monthly	TMS
Total Zinc	Report	Average Monthly	TMS

Toxics Management Spreadsheet

The Toxics Management Spreadsheet (TMS) is used to calculate a reasonable potential (RP) analysis and determine water quality-based effluent limitations for discharges of toxic pollutants. Discharge characteristics and stream characteristics are

placed into the TMS. For NPDES renewals, the maximum concentration reported in the application or Discharge Monitoring Reports (DMR's) is entered as the discharge concentration for that pollutant. That will be used to conduct the reasonable potential (RP) analysis after a WQBEL is calculated.

WQBEL's can be based on acute fish criterion (AFC), chronic fish criterion (CFC), threshold human health criterion (THH), or carcinogen risk level (CRC). AFC is based on the mixing of stream flow and wastewater flow after 15 minutes. CFC is based on the mixing of stream flow and wastewater flow after 12 hours. THH is based on the mixing of stream flow and wastewater flow after 12 hours or at the point of a potable water intake. CRL is based on the mixing of stream flow and wastewater flow after 12 hours. CRL limits use the harmonic mean flow of the stream. AFC, CFC and THH WQBEL's use the Q_{7-10} flow of the receiving stream.

The table above lists the recommended WQBEL's for the MACM STP. Monitoring for hexavalent chromium and zinc is recommended. The TMS recommends numeric limits for pollutants whose application reported maximum discharge concentration is equal to or greater than 50% of the WQBEL. The TMS recommends monitoring for pollutants whose application reported maximum discharge concentration is greater than 10% and less than 50% of the WQBEL for conservative pollutants. The TMS recommends monitoring for pollutants whose application reported maximum discharge concentration is greater than 25% and less than 50% of the WQBEL for non-conservative pollutants. The input and output for the TMS is attached in the references section of this report.

WQM 7.0 Water Quality Modeling Program

WQM 7.0 is a water quality modeling program for Windows that determines Waste Load Allocations ("WLAs") and effluent limitations for carbonaceous biochemical oxygen demand ("$CBOD_5$"), ammonia-nitrogen, and dissolved oxygen ("DO") for single and multiple point-source discharge scenarios. To accomplish this, the model simulates two basic processes. In the ammonia-nitrogen module, the model simulates the mixing and degradation of ammonia-nitrogen in the stream and compares calculated instream ammonia-nitrogen concentrations to ammonia-nitrogen water quality criteria. In the DO module, the model simulates the mixing and consumption of DO in the stream due to the degradation of $CBOD_5$ and ammonia-nitrogen, and compares calculated instream DO concentrations to DO water quality criteria. WQM 7.0 then determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions.

The model showed that water quality based effluent limits are not necessary for DO, $CBOD_5$, or NH_3N.

PFAS/PFOS Parameters

In February 2024, DEP implemented a new monitoring initiative for PFAS consistent with an EPA memorandum that provides guidance to states for addressing PFAS discharges. PFAS are a family of thousands of synthetic organic chemicals that contain a chain of strong carbon-fluorine bonds. Many PFAS are highly stable, water- and oil-resistant, and exhibit other properties that make them useful in a variety of consumer products and industrial processes. PFAS are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis and do not readily degrade naturally; thus, many PFAS accumulate over time. According to the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), the environmental persistence and mobility of some PFAS, combined with decades of widespread use, have resulted in their presence in surface water, groundwater, drinking water, rainwater, soil, sediment, ice caps, outdoor and indoor air, plants, animal tissue, and human blood serum across the globe. ATSDR also reported that exposure to certain PFAS can lead to adverse human health impacts Due to their durability, toxicity, persistence, and pervasiveness, PFAS have emerged as potentially significant pollutants of concern.

In accordance with Section II.I of DEP's "Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits" [SOP No. BCW-PMT-032] and under the authority of 25 Pa. Code § 92a.61(b), DEP has determined that monitoring for a subset of common/well-studied PFAS including Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA) is necessary to help understand the extent of environmental contamination by PFAS in the Commonwealth and the extent to which point source dischargers are contributors. SOP BCW-PMT-032 directs permit writers to consider special monitoring requirements for PFOA, PFOS, PFBS, and HFPO-DA in the following instances:

a. If sampling that is completed as part of the permit renewal application reveals a detection of PFOA, PFOS, HFPO-DA or PFBS (any of these compounds), the application manager will establish a quarterly monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds) in the permit.

b. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for PFOA, PFOS, HFPO-DA and PFBS (all of these compounds in a minimum of 3 samples), the application manager will establish an annual monitoring requirement for PFOA, PFOS, HFPO-DA and PFBS in the permit.

c. In all cases the application manager will include a condition in the permit that the permittee may cease monitoring for PFOA, PFOS, HFPO-DA and PFBS when the permittee reports non-detect values at or below the Target QL for four consecutive monitoring periods for each PFAS parameter that is analyzed. Use the following language: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detects at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees should enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

The Authority's application was submitted before the NPDES permit application forms were updated to require sampling for PFOA, PFOS, PFBS, and HFPO-DA. Therefore, annual reporting of PFOA, PFOS, PFBS, and HFPO-DA will be required consistent with Section II.G of SOP BCW-PMT-0332.

As stated in Section II.G.3 of SOP BCW-PMT-0332, if non-detect values at or below DEP's Target QLs are reported for four consecutive monitoring periods (i.e., four consecutive annual results), then the monitoring may be discontinued. Footnote (3) has been added to Part A of the NPDES Permit, which further discusses monitoring and reporting requirements.

Mass Limits

In accordance with Table 5-3 of DEP's "Technical Guidance for the Development and Specification of Effluent Limitations. and Other Permit Conditions in NPDES Permits" and Section IV of DEP's "Standard Operating Procedure for Clean Water Program Establishing Effluent Limitations for Individual Sewage Permits", mass limits are calculated for $CBOD_5$ and TSS. Average monthly and average weekly mass limits in units of pounds per day are calculated using the concentration limits in Table 1 and Baden's average design flow of 2.0 MGD with the following formula:

Design flow (average annual) (MGD) × concentration limit (mg/L) at design flow × conversion factor (8.34) = mass limit (lb/day)

Mass Limits:

Parameter	Average Monthly (ppd)	Average Weekly (ppd)
CBOD5	3961.5	6021
Total Suspended Solids	4754	7131

Influent Monitoring

Pursuant to Section IV.E.8 of DEP's "Standard Operating Procedure (SOP) for Clean Water Program New and Reissuance Sewage Individual NPDES Permit Applications" [SOP No. BCW-PMT-002, Version 1.9, January 6, 2020], for POTWs with design flows greater than 2,000 GPD, influent BOD_5 and TSS monitoring is established in the permit with the same minimum measurement frequency and sample type used for the effluent (2/week, 24-Hr Composite) for the MACM STP. The required influent monitoring will be for BOD_5 and TSS including average monthly and average weekly influent loading and average monthly and average weekly influent concentrations.

As stated in Footnote 3 in Part A of the current NPDES permit, the organic design capacity of 19,950 lbs BOD_5 per day for the treatment facility is used to prepare the annual Municipal Wasteload Management Report to determine whether an organic overload condition exists, as defined in 25 Pa. Code Chapter 94. That is, BOD_5 is the parameter used to determine whether a sewage treatment plant is organically overloaded.

Industrial Contributors

The application states that the system does not have any industrial users (on page 8 of the application). However, the city of McKeesport has a history of heavy manufacturing, and the permittee should provide the DEP with a list of all industrial and commercial establishments that are connected to the collection system.

Pretreatment Program

The previous permit and this renewal permit require the permittee to implement a pretreatment program. As noted above, the application states that there are no industrial users in the collection system. 40 CFR 403.8 requires PA American/MACM to development and implementation a pretreatment program because the discharge flow of 19 MGD is greater than the minimum pretreatment plant flow of 5 MGD.

Monitoring Frequencies and Sample Types

Sample types and monitoring frequencies proposed in this permit match table 6.3 in the Department's guidance document entitled *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits.*

Best Professional Judgment (BPJ) Limitations

Dissolved oxygen will be limited at 4.0 mg/l as an instantaneous minimum.

Miscellaneous

Since the last permit renewal was issued, the McKeesport STP has been re-rated to an average flow and design capacity of 19.0 MGD. The renewal application states that the design flow is 13 MGD and the design capacity is 57 MGD. That is incorrect. 57 MGD is the peak flow that the McKeesport STP's unit operations can handle. It is a peak flow and not a hydraulic capacity. The design capacity is now 19 MGD. The hydraulic capacity is also 19 MGD.

Anti-Backsliding

Anti-backsliding was not used for this permit review.

Combined Sewer Overflows

MACM has combined sewer systems and has been in a long-term consent order and agreement with the Department to comply with the CSO regulations. The Department approved MACM's long-term control plan (LTCP) on January 8, 2008. MACM chose the presumptive approach for its strategy. The Department approved a revised implementation schedule for the LTCP on November 1, 2016. The Department approved the nine minimum controls (NMCs) on December 11, 2017. MACM is required to submit a post construction compliance monitoring plan (PCCMP) once all corrective measures listed in the consent order and agreement are completed. Part of the PCCMP will include modeling to show that the system is collecting a minimum of 85% capture of its flow during the typical year of 2003 or 39.02 inches of precipitation.

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☒ 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 dilution series used for the tests was: 100%, 60%, 30%, 4%, and 2%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 4%.

Summary of Four Most Recent Test Results

TST Data Analysis

(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet).

Test Date	*Ceriodaphnia* Results (Pass/Fail)		*Pimephales* Results (Pass/Fail)	
	Survival	Reproduction	Survival	Growth
August 2021	Pass	Pass	Pass	Pass
August 2022	Pass	Pass	Pass	Pass
July 2023	Pass	Pass	Pass	Pass
July 2024	Pass	Pass	Pass	Pass

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

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

Acute Partial Mix Factor (PMFa): **0.031** Chronic Partial Mix Factor (PMFc): **0.212**

1. **Determine IWC – Acute (IWCa)**:

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

   [(19.0 MGD x 1.547) / ((1060 cfs x 0.031) + (19.0 MGD x 1.547))] x 100 = **47.2%**

   Is IWCa < 1%? ☐ **YES** ☒ **NO**

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

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

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

   [(19.0 MGD x 1.547) / ((1060 cfs x 0.212) + (19.0 MGD x 1.547))] x 100 = **11.56%**

3. Determine Dilution Series

Dilution Series = 100%, 56%, 12%, 6%, and 3%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

The WET analysis spreadsheet is included in the references section of the report.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Daily Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	XXX	1.6	1/shift	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	3961.5	6021.0	XXX	25.0	38.0	50	1/day	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Total Suspended Solids	4754.0	7131.0	XXX	30.0	45.0	60	1/day	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	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	Report	XXX	Report	1/month	Grab
Ultraviolet light intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/shift	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	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Ammonia-Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Chromium, Hexavalent	XXX	XXX	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
Zinc, Total	XXX	XXX	XXX	Report	Report Daily Max	XXX	1/week	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab

Compliance Sampling Location: at outfall 001

Other Comments:

REFERENCES

WQM7.0 Output

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
19A	37185	MONONGAHELA RIVER	**16.000**	720.00	5410.00	0.00100	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	39.0	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
MACM	PA002691	19.0000	19.0000	19.0000	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	4.00	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
19A	37185	MONONGAHELA RIVER	**15.000**	714.70	7700.00	0.00100	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	45.0	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	85.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
16.000	541.00	0.00	541.00	29.393	0.00100	1.178	458.1	388.98	1.06	0.058	20.26	7.00
Q1-10 Flow												
16.000	346.24	0.00	346.24	29.393	0.00100	NA	NA	NA	0.84	0.073	20.39	7.00
Q30-10 Flow												
16.000	735.76	0.00	735.76	29.393	0.00100	NA	NA	NA	1.25	0.049	20.19	7.00

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
16.000	MACM	16.23	50	16.23	50	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
16.000	MACM	1.86	25	1.86	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)		
16.00	MACM	25	25	25	25	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
16.000	19.000	20.258	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
458.098	1.178	388.983	1.057
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.19	0.591	1.29	0.714
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.024	4.962	Tsivoglou	5
Reach Travel Time (days)			
0.058			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.006	3.17	1.28	7.75
0.012	3.16	1.28	7.75
0.017	3.15	1.27	7.75
0.023	3.14	1.27	7.75
0.029	3.13	1.26	7.75
0.035	3.12	1.26	7.75
0.040	3.11	1.25	7.75
0.046	3.10	1.25	7.75
0.052	3.09	1.24	7.75
0.058	3.08	1.24	7.75

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19A	37185	MONONGAHELA RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
16.000	MACM	PA002691	19.000	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

TMS Output

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

PA American MACM STP, NPDES Permit No. PA0026913, Outfall 001

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 15 PMF: 0.031 Analysis Hardness (mg/l): 153.75 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	
Total Aluminum	0	0		0	750	750	1,577	
Total Antimony	0	0		0	1,100	1,100	2,313	
Total Arsenic	0	0		0	340	340	715	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	44,150	
Total Boron	0	0		0	8,100	8,100	17,029	
Total Cadmium	0	0		0	3.059	3.3	6.94	Chem Translator of 0.926 applied
Total Chromium (III)	0	0		0	810.389	2,565	5,392	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	34.3	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	200	
Total Copper	0	0		0	20.155	21.0	44.1	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	46.3	
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	102.817	141	297	Chem Translator of 0.728 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	3.46	Chem Translator of 0.85 applied
Total Nickel	0	0		0	673.763	675	1,419	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	6.741	7.93	16.7	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	137	
Total Zinc	0	0		0	168.710	173	363	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	6.31	
Acrylonitrile	0	0		0	650	650	1,367	
Benzene	0	0		0	640	640	1,346	
Bromoform	0	0		0	1,800	1,800	3,784	
Carbon Tetrachloride	0	0		0	2,800	2,800	5,887	

Chlorobenzene	0	0		0	1,200	1,200	2,523	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	37,843	
Chloroform	0	0		0	1,900	1,900	3,995	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	31,536	
1,1-Dichloroethylene	0	0		0	7,500	7,500	15,768	
1,2-Dichloropropane	0	0		0	11,000	11,000	23,126	
1,3-Dichloropropylene	0	0		0	310	310	652	
Ethylbenzene	0	0		0	2,900	2,900	6,097	
Methyl Bromide	0	0		0	550	550	1,156	
Methyl Chloride	0	0		0	28,000	28,000	58,866	
Methylene Chloride	0	0		0	12,000	12,000	25,228	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	2,102	
Tetrachloroethylene	0	0		0	700	700	1,472	
Toluene	0	0		0	1,700	1,700	3,574	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	14,296	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	6,307	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	7,148	
Trichloroethylene	0	0		0	2,300	2,300	4,835	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	1,177	
2,4-Dichlorophenol	0	0		0	1,700	1,700	3,574	
2,4-Dimethylphenol	0	0		0	660	660	1,388	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	168	
2,4-Dinitrophenol	0	0		0	660	660	1,388	
2-Nitrophenol	0	0		0	8,000	8,000	16,819	
4-Nitrophenol	0	0		0	2,300	2,300	4,835	
p-Chloro-m-Cresol	0	0		0	160	160	336	
Pentachlorophenol	0	0		0	8.723	8.72	18.3	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	967	
Acenaphthene	0	0		0	83	83.0	174	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	631	
Benzo(a)Anthracene	0	0		0	0.5	0.5	1.05	
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	63,071	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	9,461	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	568	
Butyl Benzyl Phthalate	0	0		0	140	140	294	
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	1,724	
1,3-Dichlorobenzene	0	0		0	350	350	736	

1,4-Dichlorobenzene	0	0		0	730	730	1,535	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	8,409	
Dimethyl Phthalate	0	0		0	2,500	2,500	5,256	
Di-n-Butyl Phthalate	0	0		0	110	110	231	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	3,364	
2,6-Dinitrotoluene	0	0		0	990	990	2,081	
1,2-Diphenylhydrazine	0	0		0	15	15.0	31.5	
Fluoranthene	0	0		0	200	200	420	
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	21.0	
Hexachlorocyclopentadiene	0	0		0	5	5.0	10.5	
Hexachloroethane	0	0		0	60	60.0	126	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	21,024	
Naphthalene	0	0		0	140	140	294	
Nitrobenzene	0	0		0	4,000	4,000	8,409	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	35,740	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	631	
Phenanthrene	0	0		0	5	5.0	10.5	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	273	
Aldrin	0	0		0	3	3.0	6.31	
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	2.0	
Chlordane	0	0		0	2.4	2.4	5.05	
4,4-DDT	0	0		0	1.1	1.1	2.31	
4,4-DDE	0	0		0	1.1	1.1	2.31	
4,4-DDD	0	0		0	1.1	1.1	2.31	
Dieldrin	0	0		0	0.24	0.24	0.5	
alpha-Endosulfan	0	0		0	0.22	0.22	0.46	
beta-Endosulfan	0	0		0	0.22	0.22	0.46	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	0.18	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	1.09	
Heptachlor Epoxide	0	0		0	0.5	0.5	1.05	

☑ *CFC* CCT (min): 720 PMF: 0.212 Analysis Hardness (mg/l): 113.08 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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	1,900	

Total Arsenic	0	0		0	150	150	1,296	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	35,414	
Total Boron	0	0		0	1,600	1,600	13,820	
Total Cadmium	0	0		0	0.268	0.3	2.56	Chem Translator of 0.904 applied
Total Chromium (III)	0	0		0	81.966	95.3	823	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	89.8	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	164	
Total Copper	0	0		0	9.948	10.4	89.5	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	44.9	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	55,613	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.876	3.72	32.1	Chem Translator of 0.773 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	7.82	Chem Translator of 0.85 applied
Total Nickel	0	0		0	57.707	57.9	500	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	43.1	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	112	
Total Zinc	0	0		0	131.110	133	1,149	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	25.9	
Acrylonitrile	0	0		0	130	130	1,123	
Benzene	0	0		0	130	130	1,123	
Bromoform	0	0		0	370	370	3,196	
Carbon Tetrachloride	0	0		0	560	560	4,837	
Chlorobenzene	0	0		0	240	240	2,073	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	30,231	
Chloroform	0	0		0	390	390	3,369	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	26,776	
1,1-Dichloroethylene	0	0		0	1,500	1,500	12,956	
1,2-Dichloropropane	0	0		0	2,200	2,200	19,002	
1,3-Dichloropropylene	0	0		0	61	61.0	527	
Ethylbenzene	0	0		0	580	580	5,010	
Methyl Bromide	0	0		0	110	110	950	
Methyl Chloride	0	0		0	5,500	5,500	47,506	
Methylene Chloride	0	0		0	2,400	2,400	20,730	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	1,814	
Tetrachloroethylene	0	0		0	140	140	1,209	
Toluene	0	0		0	330	330	2,850	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	12,092	
1,1,1-Trichloroethane	0	0		0	610	610	5,269	
1,1,2-Trichloroethane	0	0		0	680	680	5,873	
Trichloroethylene	0	0		0	450	450	3,887	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	950	

2,4-Dichlorophenol	0	0		0	340	340	2,937	
2,4-Dimethylphenol	0	0		0	130	130	1,123	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	138	
2,4-Dinitrophenol	0	0		0	130	130	1,123	
2-Nitrophenol	0	0		0	1,600	1,600	13,820	
4-Nitrophenol	0	0		0	470	470	4,060	
p-Chloro-m-Cresol	0	0		0	500	500	4,319	
Pentachlorophenol	0	0		0	6.693	6.69	57.8	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	786	
Acenaphthene	0	0		0	17	17.0	147	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	510	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.86	
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	51,825	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	7,860	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	466	
Butyl Benzyl Phthalate	0	0		0	35	35.0	302	
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	1,382	
1,3-Dichlorobenzene	0	0		0	69	69.0	596	
1,4-Dichlorobenzene	0	0		0	150	150	1,296	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	6,910	
Dimethyl Phthalate	0	0		0	500	500	4,319	
Di-n-Butyl Phthalate	0	0		0	21	21.0	181	
2,4-Dinitrotoluene	0	0		0	320	320	2,764	
2,6-Dinitrotoluene	0	0		0	200	200	1,727	
1,2-Diphenylhydrazine	0	0		0	3	3.0	25.9	
Fluoranthene	0	0		0	40	40.0	345	
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	17.3	
Hexachlorocyclopentadiene	0	0		0	1	1.0	8.64	
Hexachloroethane	0	0		0	12	12.0	104	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	18,139	
Naphthalene	0	0		0	43	43.0	371	
Nitrobenzene	0	0		0	810	810	6,996	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	29,367	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	

n-Nitrosodiphenylamine	0	0		0	59	59.0	510	
Phenanthrene	0	0		0	1	1.0	8.64	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	225	
Aldrin	0	0		0	0.1	0.1	0.86	
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	0.037	
4,4-DDT	0	0		0	0.001	0.001	0.009	
4,4-DDE	0	0		0	0.001	0.001	0.009	
4,4-DDD	0	0		0	0.001	0.001	0.009	
Dieldrin	0	0		0	0.056	0.056	0.48	
alpha-Endosulfan	0	0		0	0.056	0.056	0.48	
beta-Endosulfan	0	0		0	0.056	0.056	0.48	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	0.31	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	0.033	
Heptachlor Epoxide	0	0		0	0.0038	0.004	0.033	

☑ ***THH*** CCT (min): 720 PMF: 0.212 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	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	48.4	
Total Arsenic	0	0		0	10	10.0	86.4	
Total Barium	0	0		0	2,400	2,400	20,730	
Total Boron	0	0		0	3,100	3,100	26,776	
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	34.5	
Dissolved Iron	0	0		0	300	300	2,591	
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	8,637	
Total Mercury	0	0		0	0.050	0.05	0.43	
Total Nickel	0	0		0	610	610	5,269	
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	2.07	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	25.9	
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	864	
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	5.7	5.7	49.2	
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	285	
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	587	
Methyl Bromide	0	0		0	100	100.0	864	
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	492	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	864	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	86,375	
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	259	
2,4-Dichlorophenol	0	0		0	10	10.0	86.4	
2,4-Dimethylphenol	0	0		0	100	100.0	864	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	17.3	
2,4-Dinitrophenol	0	0		0	10	10.0	86.4	
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	34,550	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	605	
Anthracene	0	0		0	300	300	2,591	
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	1,727	
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	0.86	
2-Chloronaphthalene	0	0		0	800	800	6,910	
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	8,637	
1,3-Dichlorobenzene	0	0		0	7	7.0	60.5	
1,4-Dichlorobenzene	0	0		0	300	300	2,591	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	5,182	
Dimethyl Phthalate	0	0		0	2,000	2,000	17,275	
Di-n-Butyl Phthalate	0	0		0	20	20.0	173	
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	173	
Fluorene	0	0		0	50	50.0	432	
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	34.5	
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	294	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	86.4	
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	173	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.6	
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	36.3	
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	173	
beta-Endosulfan	0	0		0	20	20.0	173	
Endosulfan Sulfate	0	0		0	20	20.0	173	
Endrin	0	0		0	0.03	0.03	0.26	
Endrin Aldehyde	0	0		0	1	1.0	8.64	

Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 720 PMF: 0.300 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	
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	2.06	
Benzene	0	0		0	0.58	0.58	20.0	
Bromoform	0	0		0	7	7.0	241	
Carbon Tetrachloride	0	0		0	0.4	0.4	13.8	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	27.5	
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	0.95	0.95	32.7	
1,2-Dichloroethane	0	0		0	9.9	9.9	341	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	31.0	
1,3-Dichloropropylene	0	0		0	0.27	0.27	9.29	
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	688	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	6.88	
Tetrachloroethylene	0	0		0	10	10.0	344	
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	18.9	
Trichloroethylene	0	0		0	0.6	0.6	20.6	
Vinyl Chloride	0	0		0	0.02	0.02	0.69	
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	1.03	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	51.6	
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	0.003	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.034	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.003	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.034	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.34	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	1.03	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	11.0	
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	4.13	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.003	
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	1.72	
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	1.72	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	1.72	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	1.03	
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	0.003	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.34	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	3.44	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.034	
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	0.024	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.17	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	114	
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	0.00003	
alpha-BHC	0	0		0	0.0004	0.0004	0.014	
beta-BHC	0	0		0	0.008	0.008	0.28	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.01	
4,4-DDT	0	0		0	0.00003	0.00003	0.001	
4,4-DDE	0	0		0	0.00002	0.00002	0.0007	
4,4-DDD	0	0		0	0.0001	0.0001	0.003	
Dieldrin	0	0		0	0.000001	0.000001	0.00003	
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	0.0002	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.001	

☑ ***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	22.0	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.23	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
Total Aluminum	1,011	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	86.4	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	20,730	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	10,915	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	N/A	N/A	Discharge Conc < TQL
Total Chromium (III)	823	µg/L	Discharge Conc < TQL
Total Cobalt	128	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	0.028	mg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	29.6	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	2,591	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	55,613	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	32.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	8,637	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.43	µg/L	Discharge Conc < TQL
Total Nickel	500	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	43.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	10.7	µg/L	Discharge Conc < TQL
Total Thallium	2.07	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	4.04	µg/L	Discharge Conc < TQL
Acrylonitrile	2.06	µg/L	Discharge Conc < TQL
Benzene	20.0	µg/L	Discharge Conc < TQL
Bromoform	241	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	13.8	µg/L	Discharge Conc < TQL
Chlorobenzene	864	µg/L	Discharge Conc < TQL
Chlorodibromomethane	27.5	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	24,256	µg/L	Discharge Conc < TQL
Chloroform	49.2	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	32.7	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	341	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	285	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	31.0	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	9.29	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	587	µg/L	Discharge Conc < TQL

Methyl Bromide	741	µg/L	Discharge Conc < TQL
Methyl Chloride	37,731	µg/L	Discharge Conc < TQL
Methylene Chloride	688	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	6.88	µg/L	Discharge Conc < TQL
Tetrachloroethylene	344	µg/L	Discharge Conc < TQL
Toluene	492	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	864	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	4,043	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	18.9	µg/L	Discharge Conc < TQL
Trichloroethylene	20.6	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.69	µg/L	Discharge Conc < TQL
2-Chlorophenol	259	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	86.4	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	864	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	17.3	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	86.4	µg/L	Discharge Conc < TQL
2-Nitrophenol	10,780	µg/L	Discharge Conc < TQL
4-Nitrophenol	3,099	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	216	µg/L	Discharge Conc < TQL
Pentachlorophenol	1.03	µg/L	Discharge Conc < TQL
Phenol	34,550	µg/L	Discharge Conc ≤ 25% WQBEL
2,4,6-Trichlorophenol	51.6	µg/L	Discharge Conc < TQL
Acenaphthene	112	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	2,591	µg/L	Discharge Conc < TQL
Benzidine	0.003	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.034	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.003	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.034	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.34	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	1.03	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	1,727	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	11.0	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	364	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.86	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	6,910	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	4.13	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.003	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	1,105	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	60.5	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	984	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	1.72	µg/L	Discharge Conc < TQL
Diethyl Phthalate	5,182	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	3,369	µg/L	Discharge Conc ≤ 25% WQBEL

Di-n-Butyl Phthalate	148	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	1.72	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	1.72	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	1.03	µg/L	Discharge Conc < TQL
Fluoranthene	173	µg/L	Discharge Conc < TQL
Fluorene	432	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.003	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.34	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	6.74	µg/L	Discharge Conc < TQL
Hexachloroethane	3.44	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.034	µg/L	Discharge Conc < TQL
Isophorone	294	µg/L	Discharge Conc < TQL
Naphthalene	189	µg/L	Discharge Conc < TQL
Nitrobenzene	86.4	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.024	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.17	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	114	µg/L	Discharge Conc < TQL
Phenanthrene	6.74	µg/L	Discharge Conc < TQL
Pyrene	173	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.6	µg/L	Discharge Conc < TQL
Aldrin	0.00003	µg/L	Discharge Conc < TQL
alpha-BHC	0.014	µg/L	Discharge Conc < TQL
beta-BHC	0.28	µg/L	Discharge Conc < TQL
gamma-BHC	1.28	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.01	µg/L	Discharge Conc < TQL
4,4-DDT	0.001	µg/L	Discharge Conc < TQL
4,4-DDE	0.0007	µg/L	Discharge Conc < TQL
4,4-DDD	0.003	µg/L	Discharge Conc < TQL
Dieldrin	0.00003	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.3	µg/L	Discharge Conc < TQL
beta-Endosulfan	0.3	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	173	µg/L	Discharge Conc < TQL
Endrin	0.12	µg/L	Discharge Conc < TQL
Endrin Aldehyde	8.64	µg/L	Discharge Conc < TQL
Heptachlor	0.0002	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.001	µg/L	Discharge Conc < TQL

TMS Input

Discharge Information

Instructions | Discharge | Stream

Facility: PA American MACM STP NPDES Permit No.: PA0026913 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
19	213	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		905									
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		34									
	Total Antimony	µg/L	<	0.4									
	Total Arsenic	µg/L		0.8									
	Total Barium	µg/L		44									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L		135									
	Total Cadmium	µg/L	<	0.1									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	µg/L	<	4.34									
	Total Cobalt	µg/L		1									
	Total Copper	mg/L		0.002									
	Free Cyanide	µg/L		2									
	Total Cyanide	µg/L		5									
	Dissolved Iron	µg/L		136									
	Total Iron	µg/L		67.4									
	Total Lead	µg/L		0.3									
	Total Manganese	µg/L		182									
	Total Mercury	µg/L	<	0.1									
	Total Nickel	µg/L		2									
	Total Phenols (Phenolics) (PWS)	µg/L	<	0.002									
	Total Selenium	µg/L		0.7									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.05									
	Total Zinc	mg/L		0.032									
	Total Molybdenum	µg/L	<	4									
	Acrolein	µg/L	<	0.13									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.12									
	Benzene	µg/L	<	0.37									
	Bromoform	µg/L	<	0.23									
	Carbon Tetrachloride	µg/L	<	0.25									

Group 3	Chlorobenzene	µg/L	<	0.25									
	Chlorodibromomethane	µg/L	<	0.25									
	Chloroethane	µg/L	<	0.47									
	2-Chloroethyl Vinyl Ether	µg/L	<	3.1									
	Chloroform	µg/L		2.8									
	Dichlorobromomethane	µg/L		0.42									
	1,1-Dichloroethane	µg/L	<	0.05									
	1,2-Dichloroethane	µg/L	<	0.12									
	1,1-Dichloroethylene	µg/L	<	0.13									
	1,2-Dichloropropane	µg/L	<	0.26									
	1,3-Dichloropropylene	µg/L	<	0.28									
	1,4-Dioxane	µg/L	<	0.34									
	Ethylbenzene	µg/L	<	0.2									
	Methyl Bromide	µg/L	<	0.42									
	Methyl Chloride	µg/L	<	0.33									
	Methylene Chloride	µg/L		0.37									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.38									
	Tetrachloroethylene	µg/L	<	0.27									
	Toluene	µg/L	<	0.24									
	1,2-trans-Dichloroethylene	µg/L	<	0.08									
	1,1,1-Trichloroethane	µg/L	<	0.12									
	1,1,2-Trichloroethane	µg/L	<	0.13									
	Trichloroethylene	µg/L	<	0.29									
	Vinyl Chloride	µg/L	<	0.33									
Group 4	2-Chlorophenol	µg/L	<	0.38									
	2,4-Dichlorophenol	µg/L	<	0.43									
	2,4-Dimethylphenol	µg/L	<	0.46									
	4,6-Dinitro-o-Cresol	µg/L	<	1.2									
	2,4-Dinitrophenol	µg/L	<	2.8									
	2-Nitrophenol	µg/L	<	0.38									
	4-Nitrophenol	µg/L	<	1.3									
	p-Chloro-m-Cresol	µg/L	<	0.38									
	Pentachlorophenol	µg/L	<	1.7									
	Phenol	µg/L		11									
	2,4,6-Trichlorophenol	µg/L	<	0.46									
Group 5	Acenaphthene	µg/L	<	0.39									
	Acenaphthylene	µg/L	<	0.38									
	Anthracene	µg/L	<	0.39									
	Benzidine	µg/L	<	2.5									
	Benzo(a)Anthracene	µg/L	<	0.4									
	Benzo(a)Pyrene	µg/L	<	0.35									
	3,4-Benzofluoranthene	µg/L	<	0.39									
	Benzo(ghi)Perylene	µg/L	<	0.41									
	Benzo(k)Fluoranthene	µg/L	<	0.38									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.43									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.37									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.43									
	Bis(2-Ethylhexyl)Phthalate	µg/L		1.9									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.44									
	Butyl Benzyl Phthalate	µg/L	<	0.57									
	2-Chloronaphthalene	µg/L	<	0.39									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.39									
	Chrysene	µg/L	<	0.41									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.42									
	1,2-Dichlorobenzene	µg/L	<	0.37									
	1,3-Dichlorobenzene	µg/L	<	0.43									
	1,4-Dichlorobenzene	µg/L	<	1									
	3,3-Dichlorobenzidine	µg/L	<	0.55									
	Diethyl Phthalate	µg/L	<	0.41									
	Dimethyl Phthalate	µg/L		0.79									
	Di-n-Butyl Phthalate	µg/L	<	0.44									
	2,4-Dinitrotoluene	µg/L	<	0.4									
	2,6-Dinitrotoluene	µg/L	<	0.86									
	Di-n-Octyl Phthalate	µg/L	<	0.86									

	1,2-Diphenylhydrazine	µg/L	<	0.37									
	Fluoranthene	µg/L	<	0.42									
	Fluorene	µg/L	<	0.48									
	Hexachlorobenzene	µg/L	<	0.72									
	Hexachlorobutadiene	µg/L	<	0.36									
	Hexachlorocyclopentadiene	µg/L	<	0.39									
	Hexachloroethane	µg/L	<	0.42									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.39									
	Isophorone	µg/L	<	0.42									
	Naphthalene	µg/L	<	0.39									
	Nitrobenzene	µg/L	<	0.51									
	n-Nitrosodimethylamine	µg/L	<	1.1									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.41									
	n-Nitrosodiphenylamine	µg/L	<	0.48									
	Phenanthrene	µg/L	<	0.38									
	Pyrene	µg/L	<	0.41									
	1,2,4-Trichlorobenzene	µg/L	<	0.41									
Group 6	Aldrin	µg/L	<	0.019									
	alpha-BHC	µg/L	<	0.011									
	beta-BHC	µg/L	<	0.012									
	gamma-BHC	µg/L	<	0.012									
	delta BHC	µg/L	<	0.014									
	Chlordane	µg/L	<	0.07									
	4,4-DDT	µg/L	<	0.02									
	4,4-DDE	µg/L	<	0.019									
	4,4-DDD	µg/L	<	0.011									
	Dieldrin	µg/L	<	0.011									
	alpha-Endosulfan	µg/L	<	0.01									
	beta-Endosulfan	µg/L	<	0.011									
	Endosulfan Sulfate	µg/L	<	0.014									
	Endrin	µg/L	<	0.013									
	Endrin Aldehyde	µg/L	<	0.014									
	Heptachlor	µg/L	<	0.011									
	Heptachlor Epoxide	µg/L	<	0.01									
	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											

Whole Effluent Toxicity

Instructions for Using PADEP WET Analysis Spreadsheet

This spreadsheet is designed to analyze Whole Effluent Toxicity (WET) test data using the statistical approach in EPA's "Test of Significant Toxicity" (TST) guidance document (EPA 833-R-10-003). Control replicate data are compared statistically with the target instream waste concentration (TIWC) replicate data. The intent is for permittees to provide an electronic or printed version of this spreadsheet with the NPDES permit renewal application that includes at least 16 endpoint results for chronic tests (4 tests, 4 endpoints each) or 8 endpoint results for acute tests (4 tests, 2 endpoints each) using the last four consecutive WET tests. The spreadsheet should also be used to determine whether an endpoint PASSES or FAILS specific tests during the permit term. Questions on the use of this form should be directed to DEP's Bureau of Clean Water at 717-787-5017.

Instructions:

Users can enter data into all cells with a green border, and can change the "TIWC" table header to a different value. Each worksheet is specific to one endpoint and can accommodate up to 4 test results for that endpoint. Four endpoint worksheets are provided ("Endpoint 1," "Endpoint 2," "Endpoint 3," and "Endpoint 4"). For chronic tests, all four worksheets should be used when reporting the last four consecutive test results for NPDES permit applications, and for acute tests, the first two worksheets should be used.

1. Enter the Facility Name and Permit No. for which the WET test(s) were completed.
2. Select, from the dropdown menus, the type of test (Chronic or Acute), the species tested (Ceriodaphnia dubia or Pimephales promelas), and the measured endpoint (survival, reproduction or growth). If you require a different option for a dropdown menu, contact DEP with your request.
3. Enter the Target Instream Waste Concentration (TIWC) value from the NPDES permit in decimal format. This is typically contained in the Part C condition for WET. The value of the TIWC itself is not critical for the TST calculations, but it is important that you enter the correct results associated with the TIWC dilution in the results table.
4. In the cell next to "No. per Replicate", enter the number of organisms used within each test condition replicate. Note that the numbers used in the results table cannot exceed this number for Survival endpoints.
5. Enter the Test Completion Date below the cell containing the same name.
6. Enter results for each replicate in the appropriate cells below the "Control" and "TIWC" table headers, corresponding to the number of organisms that survived at the end of the study, growth data, or reproduction data, corresponding to the endpoint selected above.

The mean, standard deviation and number of replicates are calculated below the results table. If there is no variability in both conditions, the T-test, degrees of freedom, and critical T-test results are not displayed, and the decision on whether a test passes or fails is based on the mean difference between the control and TIWC conditions (if less than the "b" value calculated above, the test passes, otherwise it fails). If there is variability in at least one condition, the T-test, degrees of freedom and critical T-test results are displayed, and the decision on whether a test passes or fails is based on a comparison of the T-test and critical T-test results (if the T-test result is greater than or equal to the critical T-test result, the test passes, otherwise it fails). In any case, if the mean result of the TIWC condition is greater than or equal to the mean result of the control condition, the test passes. Note that when the endpoint "Survival" is selected by the user, the results are transformed using an arcsine transformation in accordance with EPA's guidance, and the T-test, degrees of freedom, and critical T-test results are based on the arcsine transformed data.

In the event that a test condition that exceeds the TIWC condition would pass, the user may report that condition in lieu of the TIWC condition. If this is done, change the header above the results table accordingly. For example, if the TIWC value of 0.5 (50%) would fail, but a higher dilution of 0.75 (75%) would pass, change the table header from "TIWC" to "0.75".

The worksheet named "Evaluation" is generally used by DEP to evaluate Reasonable Potential and calculate WET limits, dilution series, and species as applicable for NPDES permits.

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Survival
TIWC (decimal)	0.04
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: PA American - MACM STP

Permit No.: PA0026913

Test Completion Date: 8/2/2021

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Test Completion Date: 8/1/2022

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Test Completion Date: 7/31/2023

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	1.000
Std Dev.	0.000	0.000
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

Test Completion Date: 7/22/2024

Replicate No.	Control	TIWC
1	1	0
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11		
12		
13		
14		
15		
Mean	1.000	0.900
Std Dev.	0.000	0.316
# Replicates	10	10
T-Test Result		
Deg. of Freedom		
Critical T Value		
Pass or Fail	PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Ceriodaphnia
Endpoint	Reproduction
TIWC (decimal)	0.04
No. Per Replicate	1
TST b value	0.75
TST alpha value	0.2

Facility Name: PA American - MACM STP

Permit No.: PA0026913

Test Completion Date: 8/2/2021

Replicate No.	Control	TIWC
1	30	34
2	33	31
3	32	33
4	27	32
5	28	31
6	34	33
7	30	36
8	33	28
9	27	29
10	34	33
11		
12		
13		
14		
15		
Mean	30.800	32.000
Std Dev.	2.781	2.357
# Replicates	10	10

T-Test Result	8.9423
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	**PASS**

Test Completion Date: 8/1/2022

Replicate No.	Control	TIWC
1	28	24
2	27	24
3	26	30
4	8	11
5	27	18
6	22	22
7	19	21
8	23	
9	28	11
10	25	21
11		
12		
13		
14		
15		
Mean	23.300	20.222
Std Dev.	6.111	6.160
# Replicates	10	9

T-Test Result	1.0931
Deg. of Freedom	14
Critical T Value	0.8681
Pass or Fail	**PASS**

Test Completion Date: 7/31/2023

Replicate No.	Control	TIWC
1	29	34
2	32	35
3	28	31
4	14	37
5	24	33
6	30	31
7	27	32
8	24	27
9	23	34
10	24	27
11		
12		
13		
14		
15		
Mean	25.500	32.100
Std Dev.	5.039	3.247
# Replicates	10	10

T-Test Result	8.2349
Deg. of Freedom	17
Critical T Value	0.8633
Pass or Fail	**PASS**

Test Completion Date: 7/22/2024

Replicate No.	Control	TIWC
1	23	0
2	26	22
3	32	31
4	32	23
5	18	20
6	22	24
7	13	30
8	28	22
9	19	24
10	25	20
11		
12		
13		
14		
15		
Mean	23.800	21.600
Std Dev.	6.106	8.462
# Replicates	10	10

T-Test Result	1.2325
Deg. of Freedom	15
Critical T Value	0.8662
Pass or Fail	**PASS**

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Survival
TIWC (decimal)	0.04
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: PA American - MACM STP

Permit No.: PA0026913

Test Completion Date: 8/3/2021

Replicate No.	Control	TIWC
1	0.8	0.8
2	0.8	0.6
3	0.8	0.9
4	0.8	0.9
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.800	0.800
Std Dev.	0.000	0.141
# Replicates	4	4

T-Test Result	5.2504
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

Test Completion Date: 8/2/2022

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	1	1
4	0.9	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	1.000
Std Dev.	0.050	0.000
# Replicates	4	4

T-Test Result	26.1497
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

Test Completion Date: 8/1/2023

Replicate No.	Control	TIWC
1	0.8	0.6
2	1	1
3	0.9	0.9
4	0.9	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.900	0.875
Std Dev.	0.082	0.189
# Replicates	4	4

T-Test Result	3.8324
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	PASS

Test Completion Date: 7/23/2024

Replicate No.	Control	TIWC
1	1	1
2	1	1
3	0.9	1
4	1	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.975	1.000
Std Dev.	0.050	0.000
# Replicates	4	4

T-Test Result	26.1497
Deg. of Freedom	3
Critical T Value	0.7649
Pass or Fail	PASS

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet

Type of Test	Chronic
Species Tested	Pimephales
Endpoint	Growth
TIWC (decimal)	0.04
No. Per Replicate	10
TST b value	0.75
TST alpha value	0.25

Facility Name: PA American - MACM STP

Permit No.: PA0026913

Test Completion Date: 8/3/2021

Replicate No.	Control	TIWC
1	0.285	0.232
2	0.254	0.205
3	0.212	0.21
4	0.295	0.24
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.262	0.222
Std Dev.	0.037	0.017
# Replicates	4	4

T-Test Result	1.5671
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

Test Completion Date: 8/2/2022

Replicate No.	Control	TIWC
1	0.423	0.484
2	0.384	0.449
3	0.372	0.366
4	0.412	0.396
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.398	0.424
Std Dev.	0.024	0.053
# Replicates	4	4

T-Test Result	4.4998
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	PASS

Test Completion Date: 8/1/2023

Replicate No.	Control	TIWC
1	0.381	0.329
2	0.418	0.395
3	0.414	0.424
4	0.385	0.436
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.400	0.396
Std Dev.	0.019	0.048
# Replicates	4	4

T-Test Result	3.8561
Deg. of Freedom	4
Critical T Value	0.7407
Pass or Fail	PASS

Test Completion Date:

Replicate No.	Control	TIWC
1	0.337	0.339
2	0.352	0.346
3	0.301	0.406
4	0.37	0.377
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Mean	0.340	0.367
Std Dev.	0.029	0.031
# Replicates	4	4

T-Test Result	5.9208
Deg. of Freedom	5
Critical T Value	0.7267
Pass or Fail	PASS

WET Summary and Evaluation

Facility Name	PA American McKeesport
Permit No.	PA0026913
Design Flow (MGD)	19
Q_{7-10} Flow (cfs)	1060
PMF_a	0.031
PMF_c	0.212

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	8/2/21	8/1/22	7/31/23	7/22/24
Ceriodaphnia	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	8/2/21	8/1/22	7/31/23	7/22/24
Ceriodaphnia	Reproduction	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	8/3/21	8/2/22	8/1/23	7/23/24
Pimephales	Survival	PASS	PASS	PASS	PASS

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	**Endpoint**	8/3/21	8/2/22	8/1/23	
Pimephales	Growth	PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type	**Chronic**	
TIWC	**12**	% Effluent
Dilution Series	**3, 6, 12, 56, 100**	% Effluent
Permit Limit	**None**	
Permit Limit Species		