Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0217905**
Facility Type	**Industrial**	APS ID	**941449**
Major / Minor	**Minor**	Authorization ID	**1494637**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Oakmont Borough Municipal Authority Allegheny County**	Facility Name	**Hulton Water Purification Plant**
Applicant Address	PO Box 73 721 Allegheny Avenue	Facility Address	1201 Allegheny Avenue
	Oakmont, PA 15139-0073		Oakmont, PA 15139
Applicant Contact	Nicholas Briney	Facility Contact	Nicholas Briney
Applicant Phone	(412) 828-3388	Facility Phone	(412) 828-3388
Client ID	28835	Site ID	263782
SIC Code	4941	Municipality	Oakmont Borough
SIC Description	Water Supply	County	Allegheny
Date Application Received	August 5, 2024	EPA Waived?	Yes
Date Application Accepted	August 7, 2024	If No, Reason	

Purpose of Application: NPDES Permit Renewal

Summary of Review

Overview

The Department received an NPDES permit renewal application for coverage of the Oakmont Borough Municipal Authority Allegheny County, Hulton Water Purification Plant on 8/5/2024. The current permit was issued on 9/10/2019 with an effective date of 10/1/2019 and an expiration date of 9/30/2024.

The Hulton Water Purification Plant is a large potable water treatment plant (WTP) with some sections first constructed in the late 19th century. The main WTP is situated on a narrow strip of land between a railroad and the bank of the Allegheny River; it is built over a filled ravine with Falling Springs Run, a small tributary of the Allegheny River, culverted and buried under the WTP buildings. The Waste Clarifier building is on a small piece of land between the railroad tracks and hillside adjacent to Falling Spring Run. Raw water is drawn from the Allegheny River and is initially treated with carbon, polyaluminum chloride, polymer, soda ash, fluorine, and chlorine in the mixing & flocculation tank, then five clarifiers (sedimentation basins) settle the flocculated solids, clarified water is put through one of three filters, and filtered water is sent to the clearwells or directly to final disinfection before distribution. WTP process flows are shown in Figure 1. Process wastewater is discharged via Outfalls 001, 002, 003, 005 (in combination with stormwater), 010, and 011. Stormwater alone is discharged via Outfalls 004A, 004B, 006, 007, 008, and 009. Outfalls are shown in Figure 2.

Outfall 001 consists of filter backwash water and clarifier blowdown supernatant from Waste Clarifiers. Waste Clarifier supernatant is typically recycled to the head of the plant but under exceptional circumstances, like plant malfunctions, is discharged via Outfall 001 to Falling Springs Run. Outfall 001 is locked out under normal operation. Outfall 002 was formerly designated as the culverted discharge of Falling Springs Run buried about 15’ under the WTP mixed with direct, untreated drainage of Sedimentation Basins 1 & 2 and Clearwells 1, 2, and 3; the sedimentation basins are not drained to this outfall

Approve	Deny	Signatures	Date
X		Jace William Marsh / Environmental Engineering Specialist	June 26, 2025
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	June 30, 2025

Summary of Review

under normal plant operations, but clearwells were drained here for maintenance in the past. Outfall 003 consists of direct, untreated drainage from Sedimentation Basins 3, 4, and 5 to the Allegheny River; the outfall is an overflow of the wastewaters that flow to Outfall 001 from the sedimentation basins. Outfall 005 was previously thought to only be a stormwater discharge, but during 2024 following a caustic soda spill it was found it was connected to Building No. 1 floor drains and sinks along with stormwater runoff from roof drains. Building No. 1 contains tanks and pumps for potassium permanganate and caustic soda with spill containment to prevent spills from reaching the floor drains. Building No. 1 sinks are used for continuous chlorine measurement of treated water, so sink flow to Outfall 005 is currently continuous 7 days/week. According to an email received on 6/9/2025 from Kate Jericho of Oakmont Borough Municipal Authority, floor drains and sink drains currently connected to Outfall 005 should be tied into the sanitary sewer system by the end of 2025. **No discharge is authorized from sinks or floor drains to Outfall 005 with this permit renewal. A temporary solution to contain flows from these sources must be utilized until the sanitary sewer tie-in is complete.** Outfall 010 and Outfall 011 are existing outfalls that were not included in prior renewal applications. According to the application, Outfall 010 consists of a sump discharge draining mostly seal water from raw water pumps along with minor groundwater infiltration. Though this discharge was described as mostly seal water from raw water pumps in the application, it is assumed that treated water is entering the outfall due to a TRC concentration of 0.72 mg/L reported in the application. Outfall 011 is discharge from blowdown of the river intake screen using finished potable water. No design flows were provided for the Outfalls.

Falling Springs Run has a 25 PA Code Chapter 93 Warm Water Fishes designation and is not impaired. The Allegheny River has a 25 PA Code Chapter 93 Warm Water Fishes designation and is impaired for polychlorinated biphenyls (PCBs) at the point of discharge.

From the past two years of eDMR data, two discharges have been reported from Outfall 001, two from Outfall 002, and one from Outfall 003. Effluent limit exceedances from the past year are listed in Attachment D. No open violations exist at the time of Draft. An NPDES compliance evaluation inspection was performed by Zac Flannigan with both Stacey Greenwald and the reviewer present on 2/28/2025 with no violations noted. Two pertinent conversations, as summarized, were had about plant operations during the inspection:

- The permittee was under the impression that they had to discharge in order to provide sample data to DEP. Since the discharges have a very significant chance to impact instream water quality it was recommended that, unless there is an emergency, there is no need to discharge.
- Options for ceasing discharge were discussed. The permittee stated that local publicly owned treatment works would not accept their wastewaters. Outfall 003 may be able to be completely sealed, and the permittee will investigate that option. There are no feasible sampling points for the sedimentation basin and clearwell sources to Outfall 002 besides dip sampling since it is buried, along with the piping, directly under the buildings housing the sedimentation basins and clearwells. The permittee stated that the clarifiers draining to Outfall 002 are always directed to Outfall 001 but can't be sealed from discharge to Falling Springs Run at Outfall 002. Clearwell sources to Outfall 002 can't be redirected but are dechlorinated before being drained for maintenance to Falling Springs Run at Outfall 002.

<u>Basis for Eliminating Outfall 002</u>

Discharge data reported on the application for Outfall 002, which is instream sampling as explained above, notably reported Oil & Grease at 272 mg/L, COD at 221 mg/L, and TSS at 170 mg/L during a discharge, among other heightened pollutant concentrations. Since Outfall 002 was previously designated as Falling Springs Run itself mixed with drainage of Sedimentation Basins 1 & 2 and Clearwells 1, 2, and 3 there is not a good approach to assigning limits. No feasible internal monitoring points exist for Sedimentation Basins 1 & 2 as all piping is buried under the building and dip sampling would not capture the mixed sludge "slug" at the bottom of the basins that would exit to Falling Springs Run in the event of a discharge. Any future discharges from Sedimentation Basins 1 & 2 will be routed to Outfall 001 which has been shown to be a functional solution for the plant. Accordingly, Outfall 002 is eliminated with this Draft permit renewal. No discharge will be permitted from Sedimentation Basins 1 & 2 to the former Outfall 002, and any future discharges from these basins must be routed to Outfall 001. DEP allows unpermitted discharges of potable water if Total Residual Chlorine is below detectable levels. Clearwells 1, 2, and 3 may be drained for maintenance to the former Outfall 002 if all water contained within the clearwells is properly dechlorinated below the DEP quantitation limit of 0.02 mg/L. The permittee stated that dechlorination can be achieved and mixing will be performed to ensure no stratification of chlorine concentrations within the clearwells. See Part C of the Draft permit for new requirements pertaining to the wastewater sources to Outfall 002.

Draft permit issuance is recommended.

Summary of Review

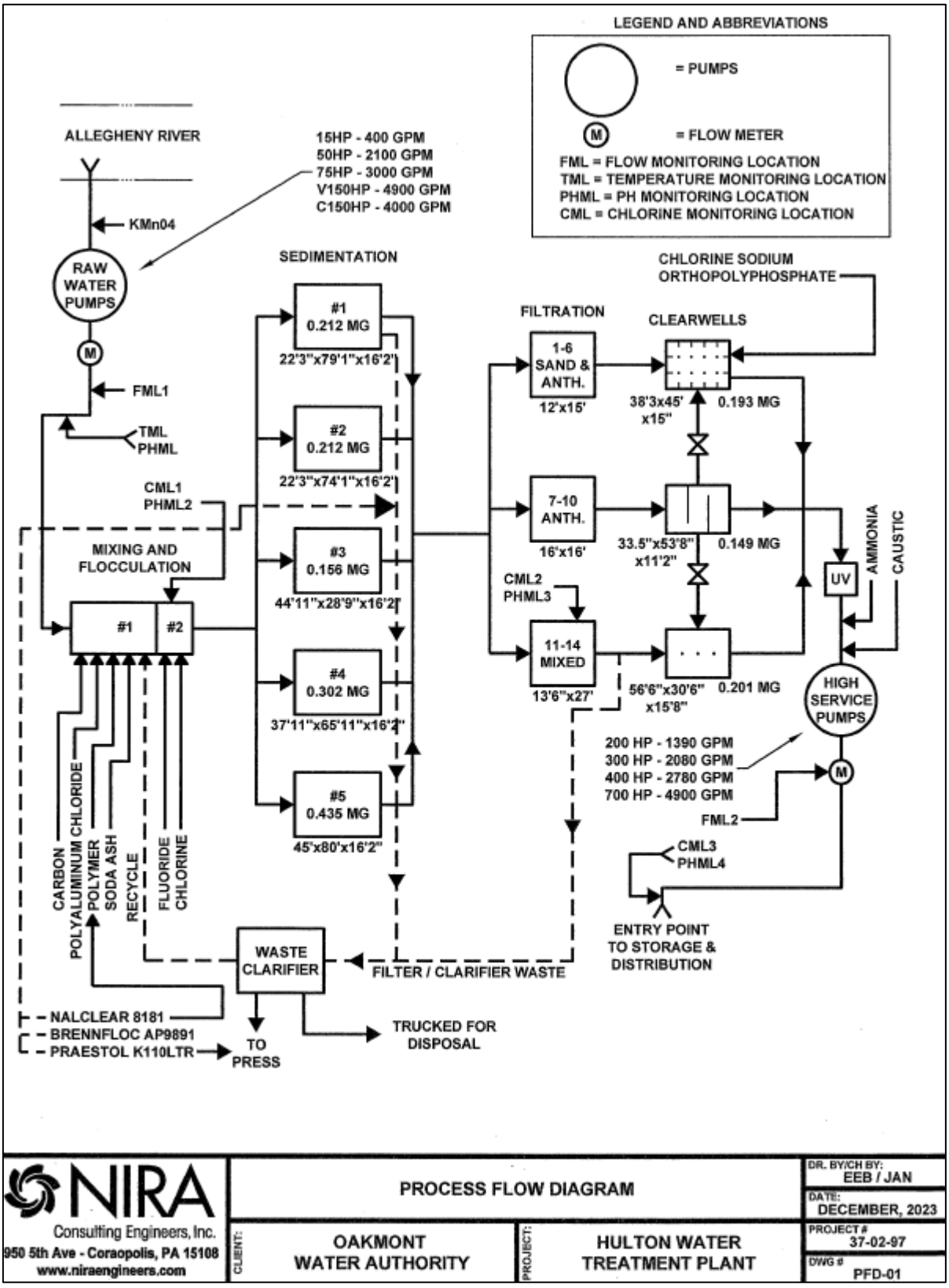


Figure 1. Hulton Water Purification Plant process flow diagram

Summary of Review

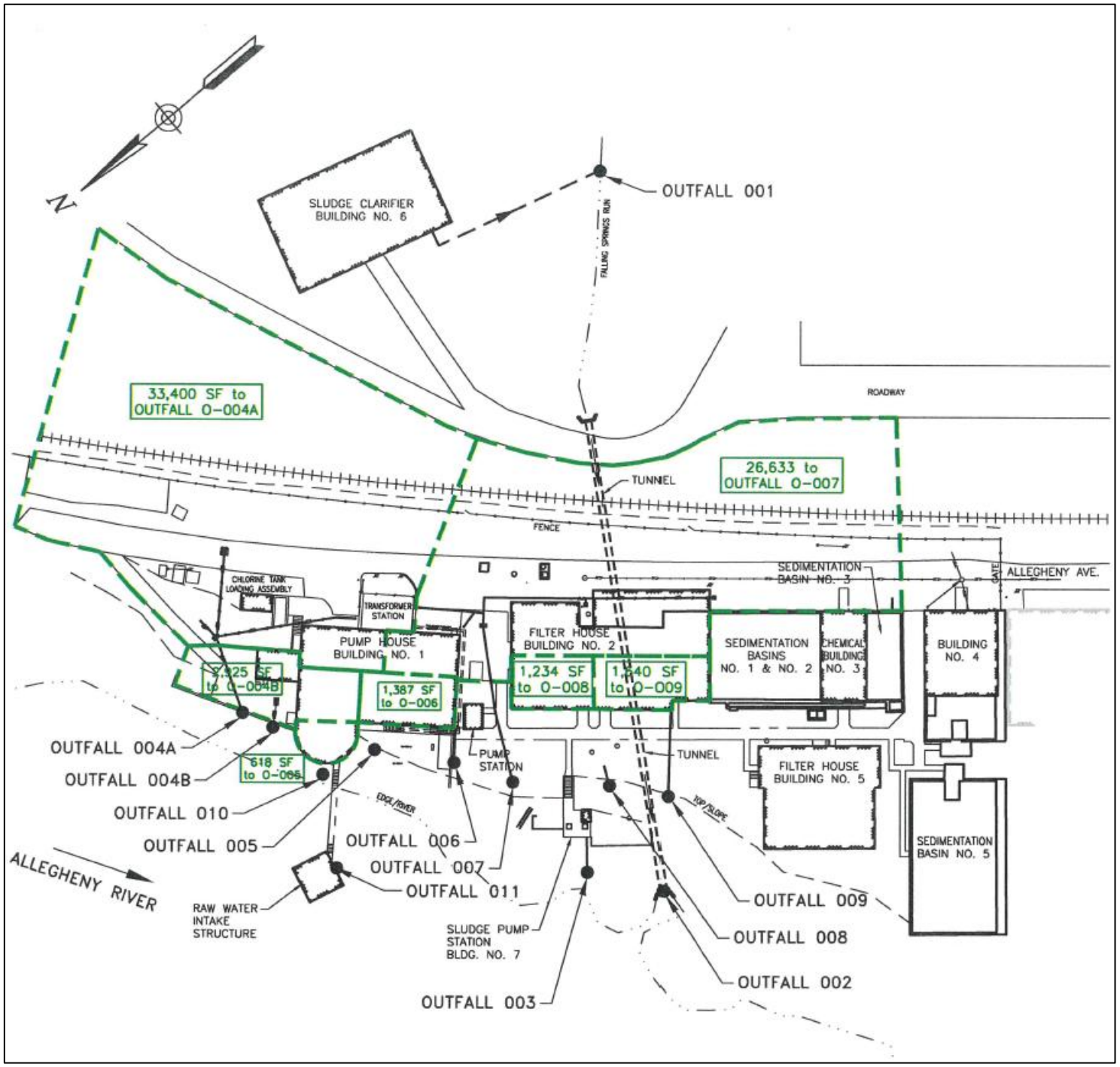


Figure 2. Hulton Water Purification Plant outfall locations

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.15
Latitude	40º 31' 49"	Longitude	-79º 50' 10"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Filter backwash water and clarifier blowdown supernatant from Waste Clarifiers		

Receiving Waters	Falling Springs Run (WWF)	Stream Code	42367
NHD Com ID	123972654	RMI	0.1
Drainage Area	0.14 mi^2	Yield (cfs/mi^2)	0.0045
Q_{7-10} Flow (cfs)	0.000633	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	790	Slope (ft/ft)	0.125 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	n/a		
Source(s) of Impairment	n/a		
TMDL Status	n/a	Name	n/a

Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0.30
Latitude	40º 31' 51"	Longitude	-79º 50' 14"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Drainage from Sedimentation Basins 3, 4, and 5		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972839	RMI	13.25
Drainage Area	11,600 mi^2	Yield (cfs/mi^2)	0.206
Q_{7-10} Flow (cfs)	2390	Q_{7-10} Basis	USACE Q_{7-10} Flows
Elevation (ft)	725	Slope (ft/ft)	0.122 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Sources Unknown		
TMDL Status	Final	Name	Allegheny River

Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004A (eFACTS Other ID: 104)	Design Flow (MGD)	0
Latitude	40º 31' 52"	Longitude	-79º 50' 11"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from plant area and roof drains		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972839	RMI	13.25
Drainage Area	11,600 mi^2	Yield (cfs/mi^2)	0.206
Q_{7-10} Flow (cfs)	2390	Q_{7-10} Basis	USACE Q_{7-10} Flows
Elevation (ft)	725	Slope (ft/ft)	0.122 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Sources Unknown		
TMDL Status	Final	Name	Allegheny River
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004B (eFACTS Other ID: 204)	Design Flow (MGD)	0
Latitude	40º 31' 52"	Longitude	-79º 50' 11"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from plant area and roof drains		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972839	RMI	13.25
Drainage Area	11,600 mi^2	Yield (cfs/mi^2)	0.206
Q_{7-10} Flow (cfs)	2390	Q_{7-10} Basis	USACE Q_{7-10} Flows
Elevation (ft)	725	Slope (ft/ft)	0.122 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Sources Unknown		
TMDL Status	Final	Name	Allegheny River
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	005	Design Flow (MGD)	0
Latitude	40º 31' 51"	Longitude	-79º 50' 12"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from roof drains		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972839	RMI	13.25
Drainage Area	11,600 mi^2	Yield (cfs/mi^2)	0.206
Q_{7-10} Flow (cfs)	2390	Q_{7-10} Basis	USACE Q_{7-10} Flows
Elevation (ft)	725	Slope (ft/ft)	0.122 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Sources Unknown		
TMDL Status	Final	Name	Allegheny River
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	006	Design Flow (MGD)	0
Latitude	40º 31' 51"	Longitude	-79º 50' 12"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from roof drains		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972839	RMI	13.25
Drainage Area	11,600 mi^2	Yield (cfs/mi^2)	0.206
Q_{7-10} Flow (cfs)	2390	Q_{7-10} Basis	USACE Q_{7-10} Flows
Elevation (ft)	725	Slope (ft/ft)	0.122 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Sources Unknown		
TMDL Status	Final	Name	Allegheny River
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007	Design Flow (MGD)	0
Latitude	40º 31' 51"	Longitude	-79º 50' 13"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from plant area and roof drains		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972839	RMI	13.25
Drainage Area	11,600 mi^2	Yield (cfs/mi^2)	0.206
Q_{7-10} Flow (cfs)	2390	Q_{7-10} Basis	USACE Q_{7-10} Flows
Elevation (ft)	725	Slope (ft/ft)	0.122 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Sources Unknown		
TMDL Status	Final	Name	Allegheny River
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	008	Design Flow (MGD)	0
Latitude	40º 31' 51"	Longitude	-79º 50' 13"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from roof drains		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972839	RMI	13.25
Drainage Area	11,600 mi^2	Yield (cfs/mi^2)	0.206
Q_{7-10} Flow (cfs)	2390	Q_{7-10} Basis	USACE Q_{7-10} Flows
Elevation (ft)	725	Slope (ft/ft)	0.122 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Sources Unknown		
TMDL Status	Final	Name	Allegheny River
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	009	Design Flow (MGD)	0
Latitude	40º 31' 50"	Longitude	-79º 50' 14"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Stormwater runoff from roof drains		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972839	RMI	13.25
Drainage Area	11,600 mi^2	Yield (cfs/mi^2)	0.206
Q_{7-10} Flow (cfs)	2390	Q_{7-10} Basis	USACE Q_{7-10} Flows
Elevation (ft)	725	Slope (ft/ft)	0.122 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Sources Unknown		
TMDL Status	Final	Name	Allegheny River
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	010	Design Flow (MGD)	0.00144
Latitude	40º 31' 52"	Longitude	-79º 50' 12"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Sump discharge draining mostly seal water from raw water pumps along with minor groundwater infiltration		

Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972839	RMI	13.25
Drainage Area	11,600 mi^2	Yield (cfs/mi^2)	0.206
Q_{7-10} Flow (cfs)	2390	Q_{7-10} Basis	USACE Q_{7-10} Flows
Elevation (ft)	725	Slope (ft/ft)	0.122 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Sources Unknown		
TMDL Status	Final	Name	Allegheny River

Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information

Outfall No.	011	Design Flow (MGD)	0.00072
Latitude	40º 31' 52"	Longitude	-79º 50' 13"
Quad Name	Kew Kensington West	Quad Code	1407
Wastewater Description:	Blowdown of intake screen using finished potable water		
Receiving Waters	Allegheny River (WWF)	Stream Code	42122
NHD Com ID	123972839	RMI	13.25
Drainage Area	11,600 mi^2	Yield (cfs/mi^2)	0.206
Q_{7-10} Flow (cfs)	2390	Q_{7-10} Basis	USACE Q_{7-10} Flows
Elevation (ft)	725	Slope (ft/ft)	0.122 (mean basin slope)
Watershed No.	18-A	Chapter 93 Class.	WWF
Existing Use	n/a	Existing Use Qualifier	n/a
Exceptions to Use	n/a	Exceptions to Criteria	n/a
Assessment Status	Impaired		
Cause(s) of Impairment	Chlordane, Polychlorinated Biphenyls (PCBs)		
Source(s) of Impairment	Sources Unknown		
TMDL Status	Final	Name	Allegheny River
Nearest Downstream Public Water Supply Intake	Wilkinsburg-Penn Joint Water Authority		
PWS Waters	Allegheny River	Flow at Intake (cfs)	2390
PWS RMI	8.91	Distance from Outfall (mi)	4.35

Changes Since Last Permit Issuance:

Other Comments:

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	0
Latitude	40º 31' 49"	**Longitude**	-79º 50' 10"

Wastewater Description: Filter backwash water and clarifier blowdown supernatant from Waste Clarifiers

001.A. Technology-Based Effluent Limitations (TBEL)

Federal Effluent Limitation Guidelines

Hulton Water Purification Plant is not subject to Federal Effluent Limitation Guidelines (ELGs).

Regulatory Effluent Standards and Monitoring Requirements

The pH effluent range for all industrial waste process and non-process discharges pursuant with 25 Pa. Code § 92a.48(a)(2) and 25 Pa. Code § 95.2 is indicated in Table 1 below.

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1) as indicated in Table 1 below.

Pursuant to 25 Pa. Code § 95.2(4) effluent standards for industrial wastes may not contain more than 7 mg/L of dissolved iron as indicated in Table 1 below.

Pursuant to 25 Pa. Code § 92a.48(b) the imposition of technology-based Total Residual Chlorine (TRC) limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELG's or a facility specific BPJ evaluation as indicated in Table 1 below.

The Oil & Grease concentration of 182 mg/L at Outfall 001 in Group 1 data provided in the application makes the discharge subject to 25 Pa. Code § 95.2(2) which requires oil-bearing wastewaters at no time contain more than 15 milligrams of oil per liter as a daily average value nor more than 30 milligrams of oil per liter at any time. Since the facility has infrequent discharges from this Outfall, these limits will be converted to a monthly average and daily maximum.

Table 1. Regulatory Effluent Standards

Parameter	Monthly Avg	Daily Max	Instantaneous Max, IMAX
Flow (MGD)	Monitor	Monitor	–
Iron, Dissolved	–	–	7.0 mg/L
pH (S.U.)	Wastes must have a pH of not less than 6.0 nor greater than 9.0		
Total Residual Chlorine	0.5 mg/L	–	1.6
Oil & Grease	15 mg/L	30 mg/L	–

Total Dissolved Solids (TDS)

This facility is exempt from 25 Pa. Code § 95.10 which outlines treatment requirements for new and expanding mass loadings of TDS and clarifies which facilities are exempt. The relevant section qualifying the exemption states:

> *(a) The following are not considered new and expanding mass loadings of TDS and are exempt from the treatment requirements in this section:*
>
> *(1) Maximum daily discharge loads of TDS or specific conductivity levels that were authorized by the Department prior to August 21, 2010. These discharge loads will be considered existing mass loadings by the Department.*

Since the TDS concentration was above 1000 mg/L in effluent data provided in the application, a monitoring requirement for TDS will be included in the Draft permit.

Best Practicable Control Technology Currently Achievable (BPT)

The Department's reference document *Technology-Based Control Requirements for Water Treatment Plant Wastes* (DEP-ID 362-2183-003) established BPT for discharges of WTPs wastewater, which are shown in Table 2 below.

Table 2. BPT Limits for Treatment of WTP Sludges and Filter Backwash

Parameter	Monthly Avg (mg/L)	Daily Max (mg/L)
Total Suspended solids (TSS)	30.0	60.0
Total Iron	2.0	4.0
Total Aluminum	4.0	8.0
Total Manganese	1.0	2.0
Flow	Monitor	----
pH (S.U.)	6-9 at all times	
Total Residual Chlorine	0.5	1.0

001.B. Water Quality-Based Effluent Limitations (WQBEL)

Toxics Management Spread Sheet

The Department of Environmental Protection has developed the DEP Toxics Management Spreadsheet ("TMS") to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The TMS is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The TMS is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the TMS recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Discharges from Outfall 001 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the TMS. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the TMS. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion. The TMS is run with the discharge and receiving stream characteristics shown in Table 3. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL.

A discharge flow of 0.15 MGD, the max flow reported in the past two years of eDMR data, was used. Effluent limitations recommended by the TMS are shown in Table 4. The site received these WQBELs due to the discharge flow relative to $Q_{7\text{-}10}$ stream flow, except for Hexavalent Chromium**.** The Quantitation Limit (QL) used for Hexavalent Chromium was less

stringent than the Department's QL of 1.0 ug/L, therefore it is uncertain if the pollutant is present at Outfall 001 above the Department's QLs. Normally it is recommended to resample at the QL, but due to the significant threat this discharge poses to instream water quality resampling at QL will not be allowed. The Output from the TMS is included in Attachment B.

Table 3. TMS Inputs for Outfall 001

Discharge Information	
Parameter	**Value**
River Mile Index	0.1
Discharge Flow (MGD)	0.15
Basin/Stream Information	
Parameter	**Value**
Drainage Area (mi^2)	0.14
Q_{7-10} (cfs)	0.000633
Low-flow yield (cfs/mi^2)	0.0045
Elevation (ft)	790

Table 4. WQBELs from TMS

Parameter	Monthly Avg (mg/L)	Daily Max (mg/L)	Instantaneous Maximum, IMAX (mg/L)
Total Aluminum	0.750	0.752	0.752
Hexavalent Chromium	Report	Report	Report
Total Copper	0.007	0.01	0.01
Total Iron	Report	Report	Report
Total Manganese	1.003	1.564	2.507
Total Nickel	Report	Report	Report
Total Zinc	Report	Report	Report

Total Residual Chlorine

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and discharge chlorine demands for the receiving stream, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/L from 25 Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is then proposed. The results of the modeling, included in Attachment C, indicate that an average monthly limit of 0.012 mg/L and a daily maximum limit of 0.028 mg/L are required for TRC.

Table 5. TRC limits from TRC_CALC

Parameter	Monthly Average (mg/L)	Daily Max (mg/L)
Total Residual Chlorine	0.012	0.028

001.C. Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l), and are displayed in Table 6.

Table 6. Effluent limitations from previous permit

Parameter	Mass (pounds)		Concentration (mg/L)			Samples	
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	IMAX	Frequency	Sample Type
Flow (MGD)	Report	Report	—	—	—	1/discharge	Measure
pH (S.U.)	—	—	6.0-9.0			1/discharge	Grab
Total Residual Chlorine	—	—	0.012	—	0.030	1/discharge	Grab
Total Suspended Solids	—	—	30.0	60.0	—	1/discharge	Grab
Total Dissolved Solids	—	—	Report	Report	—	1/discharge	Grab
Total Aluminum	—	—	0.75	1.0	—	1/discharge	Grab
Total Antimony	—	—	0.0056	0.0088	—	1/discharge	Grab
Total Arsenic	—	—	Report	Report	—	1/discharge	Grab
Total Cadmium	—	—	0.00027	0.00054	—	1/discharge	Grab
Total Copper	—	—	0.0093	0.0186	—	1/discharge	Grab
Total Iron	—	—	1.5	3.0	—	1/discharge	Grab
Total Lead	—	—	0.0032	0.0064	—	1/discharge	Grab
Total Manganese	—	—	1.0	2.0	—	1/discharge	Grab
Total Mercury	—	—	0.00005	0.000078	—	1/discharge	Grab
Total Silver	—	—	0.0038	—	0.0076	1/discharge	Grab

001.D. Proposed Effluent Limitations and Monitoring Requirements

Effluent limits applicable at Outfall 001 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in Table 7.

Table 7. Effluent limits and monitoring requirements for Outfall 001

Parameter	Mass (pounds)		Concentration (mg/L)			Samples	
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	IMAX	Frequency	Sample Type
Flow (MGD)	Report	Report	—	—	—	1/discharge	Measure
pH (S.U.)	—	—	6.0-9.0			1/discharge	Grab
Total Residual Chlorine	—	—	0.012	0.028	1.6	1/discharge	Grab
Oil & Grease	—	—	15.0	30.0	—	1/discharge	Grab
Total Dissolved Solids	—	—	Report	Report	—	1/discharge	Grab
Total Suspended Solids	—	—	30.0	60.0	—	1/discharge	Grab
Total Aluminum	—	—	0.750	0.752	0.752	1/discharge	Grab
Total Iron	—	—	1.5	3.0	Report	1/discharge	Grab
Total Manganese	—	—	1.0	2.0	—	1/discharge	Grab
Hexavalent Chromium	—	—	Report	Report	Report	1/discharge	Grab
Total Copper	—	—	0.007	0.01	0.01	1/discharge	Grab
Total Nickel	—	—	Report	Report	Report	1/discharge	Grab
Total Zinc	—	—	Report	Report	Report	1/discharge	Grab

Development of Effluent Limitations

Outfall No.	003	**Design Flow (MGD)**	0
Latitude	40º 31' 51"	**Longitude**	-79º 50' 14"

Wastewater Description: Drainage from Sedimentation Basins 3, 4, and 5

003.A. Technology-Based Effluent Limitations (TBEL)

Federal Effluent Limitation Guidelines

Hulton Water Purification Plant is not subject to Federal Effluent Limitation Guidelines (ELGs).

Regulatory Effluent Standards and Monitoring Requirements

The pH effluent range for all Industrial waste process and non-process discharges pursuant with 25 Pa. Code § 92a.48(a)(2) and 25 Pa. Code § 95.2 is indicated in Table 9 below.

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1) as indicated in Table 9.

Pursuant to 25 Pa. Code § 95.2(4) effluent standards for industrial wastes may not contain more than 7 mg/L of dissolved iron as indicated in Table 9.

Pursuant to 25 Pa. Code § 92a.48(b) the imposition of technology-based Total Residual Chlorine (TRC) limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELG's or a facility specific BPJ evaluation as indicated in Table 9.

The Oil & Grease concentration of 617 mg/L at Outfall 003 in Group 1 data provided in the application makes the discharge subject to 25 Pa. Code § 95.2(2) which requires oil-bearing wastewaters at no time contain more than 15 milligrams of oil per liter as a daily average value nor more than 30 milligrams of oil per liter at any time. Since the facility has infrequent discharges from this Outfall, these limits will be converted to a monthly average and daily maximum in Table 9.

Table 9. Regulatory Effluent Standards

Parameter	Monthly Avg	Daily Max	Instantaneous Max, IMAX
Flow (MGD)	Monitor	Monitor	–
Iron, Dissolved	–	–	7.0 mg/L
pH (S.U.)	Wastes must have a pH of not less than 6.0 nor greater than 9.0		
Total Residual Chlorine	0.5 mg/L	–	1.6
Oil & Grease	15 mg/L	30 mg/L	–

Total Dissolved Solids (TDS)

This facility is exempt from 25 Pa. Code § 95.10 which outlines treatment requirements for new and expanding mass loadings of TDS and clarifies which facilities are exempt. The relevant section qualifying the exemption states:

> *(a) The following are not considered new and expanding mass loadings of TDS and are exempt from the treatment requirements in this section:*
>
> *(1) Maximum daily discharge loads of TDS or specific conductivity levels that were authorized by the Department prior to August 21, 2010. These discharge loads will be considered existing mass loadings by the Department.*

Since the TDS concentration was above 1000 mg/L in effluent data provided in the application, a monitoring requirement for TDS will be included in the Draft permit.

Best Practicable Control Technology Currently Achievable (BPT)

The Department's reference document *Technology-Based Control Requirements for Water Treatment Plant Wastes* (DEP-ID 362-2183-003) established BPT for discharges of WTPs wastewater, which are shown in Table 10 below.

Table 10. BPT Limits for Treatment of WTP Sludges and Filter Backwash

Parameter	Monthly Avg (mg/L)	Daily Max (mg/L)
Total Suspended solids (TSS)	30.0	60.0
Total Iron	2.0	4.0
Total Aluminum	4.0	8.0
Total Manganese	1.0	2.0
Flow	Monitor	----
pH (S.U.)	6-9 at all times	
Total Residual Chlorine	0.5	1.0

003.B. Water Quality-Based Effluent Limitations (WQBEL)

Toxics Management Spread Sheet

See Section 001.B. for explanation of the TMS.

Reasonable Potential Analysis and WQBEL Development for Outfall 003

See Section 001.B. for explanation of Reasonable Potential Analysis and WQBEL Development. A discharge flow of 0.3 MGD, the maximum flow reported on the application, was used. Effluent limitations recommended by the TMS are shown in Table 11. The Output from the TMS is included in Attachment B.

Table 11. TMS Inputs for Outfall 003

Discharge Information	
Parameter	**Value**
River Mile Index	0.24
Discharge Flow (MGD)	0.3
Basin/Stream Information	
Parameter	**Value**
Drainage Area (mi^2)	11,600
Q_{7-10} (cfs)	2390
Low-flow yield (cfs/mi^2)	0.206
Elevation (ft)	725

Table 12. WQBELs from TMS

Parameter	Monthly Avg (mg/L)	Daily Max (mg/L)	Instantaneous Maximum, IMAX (mg/L)
Total Aluminum	Report	Report	Report

Total Residual Chlorine

See Section 001.B. for explanation of TRC modeling. The results of the modeling, included in Attachment C, indicate that an average monthly limit of 0.5 mg/L and a daily maximum limit of 1.17 mg/L are required for TRC.

Table 13. TRC limits from TRC_CALC

Parameter	Monthly Average (mg/L)	Daily Max (mg/L)
Total Residual Chlorine	0.5	1.17

003.C. Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l), and are displayed in Table 14.

Table 14. Effluent limitations from previous permit

Parameter	Mass (pounds)		Concentration (mg/L)			Samples	
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	IMAX	Frequency	Sample Type
Flow (MGD)	Report	Report	—	—	—	1/discharge	Calculation
pH (S.U.)	—	—	6.0-9.0			1/discharge	Grab
Total Residual Chlorine	—	—	0.5	—	1.0	1/discharge	Grab
Total Suspended Solids	—	—	30.0	60.0	—	1/discharge	Grab
Total Aluminum	—	—	4.0	8.0	—	1/discharge	Grab
Total Iron	—	—	2.0	4.0	—	1/discharge	Grab
Total Manganese	—	—	1.0	2.0	—	1/discharge	Grab

003.D. <u>Proposed Effluent Limitations and Monitoring Requirements</u>

Effluent limits applicable at Outfall 003 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in Table 15.

Table 15. Effluent limits and monitoring requirements for Outfall 003

Parameter	Mass (pounds)		Concentration (mg/L)			Samples	
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	IMAX	Frequency	Sample Type
Flow (MGD)	Report	Report	—	—	—	1/discharge	Measure
pH (S.U.)	—	—	6.0-9.0			1/discharge	Grab
Total Residual Chlorine	—	—	0.5	1.0	1.6	1/discharge	Grab
Oil & Grease	—	—	15.0	30.0	—	1/discharge	Grab
Total Dissolved Solids	—	—	Report	Report	—	1/discharge	Grab
Total Suspended Solids	—	—	30.0	60.0	—	1/discharge	Grab
Total Aluminum	—	—	4.0	8.0	—	1/discharge	Grab
Total Iron	—	—	2.0	4.0	—	1/discharge	Grab
Total Manganese	—	—	1.0	2.0	—	1/discharge	Grab

Development of Effluent Limitations

Outfall No. 004A (eFACTS Other ID: 104) **Design Flow (MGD)** 0
Latitude 40º 31' 52" **Longitude** -79º 50' 11"
Wastewater Description: Stormwater runoff from plant area and roof drains

Outfall No. 004B (eFACTS Other ID: 204) **Design Flow (MGD)** 0
Latitude 40º 31' 52" **Longitude** -79º 50' 11"
Wastewater Description: Stormwater runoff from plant area and roof drains

Outfall No. 005 **Design Flow (MGD)** 0
Latitude 40º 31' 51" **Longitude** -79º 50' 12"
Wastewater Description: Stormwater runoff from roof drains

Outfall No. 006 **Design Flow (MGD)** 0
Latitude 40º 31' 51" **Longitude** -79º 50' 12"
Wastewater Description: Stormwater runoff from roof drains

Outfall No. 007 **Design Flow (MGD)** 0
Latitude 40º 31' 51" **Longitude** -79º 50' 13"
Wastewater Description: Stormwater runoff from plant area and roof drains

Outfall No. 008 **Design Flow (MGD)** 0
Latitude 40º 31' 51" **Longitude** -79º 50' 13"
Wastewater Description: Stormwater runoff from roof drains

Outfall No. 009 **Design Flow (MGD)** 0
Latitude 40º 31' 50" **Longitude** -79º 50' 14"
Wastewater Description: Stormwater runoff from roof drains

Since all the above Outfalls are uncontaminated stormwater, only one effluent limitations development section was created. The application states that No Exposure conditions exist in the drainage areas of these stormwater outfalls. Outfall 005 is no longer permitted to discharge floor drain and sink effluent with this permit renewal, leaving uncontaminated stormwater as its only discharge component.

004.A. Technology-Based Limitations

All outfalls *would* be subject to 2022 PAG-03 General Stormwater permit conditions as a minimum requirement because the outfalls discharge stormwater associated with industrial activity. The SIC code for the facility is 4941—Water Supply which is classified as PAG-03 Appendix J—Additional Facilities. The reporting requirements applicable to Appendix J stormwater discharges are shown in Table 16 below.

Table 16. 2022 PAG-03 Appendix J monitoring requirements

Parameter	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Nitrogen	XXX	1/6 Months	Grab
Total Phosphorus	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	100	1/6 Months	Grab
Oil & Grease	30	1/6 Months	Grab
pH (S.U.)	9.0	1/6 Months	Grab
Chemical Oxygen Demand (COD)	120	1/6 Months	Grab

Shown in Table 17, not only do stormwater pollutant concentrations provided in Module 1 of the application meet 2022 PAG-03 Appendix J benchmarks, but they also meet PAG-03 No Exposure Certification benchmarks. If a facility's stormwater discharge meets the stringent concentrations of No Exposure Certification, then it is assumed that the stormwater is uncontaminated and not contributing to stream degradation.

Table 17. Stormwater data from Module 1

Outfall	Parameter	Average Concentration (mg/L)	No Exposure Benchmark Concentration (mg/L)	Meets Benchmark?
004A	Oil & Grease	<5	≤ 5.0	Yes
	BOD5	3.9	≤ 10	Yes
	COD	20.6	≤ 30	Yes
	TSS	20	≤ 30	Yes
	Total Nitrogen	<1.2	≤ 2.0	Yes
	Total Phosphorus	0.15	≤ 1.0	Yes
	pH (S.U.)	7.48	6.0-9.0	Yes
004B	Oil & Grease	<5	≤ 5.0	Yes
	BOD5	<3	≤ 10	Yes
	COD	27.5	≤ 30	Yes
	TSS	<3	≤ 30	Yes
	Total Nitrogen	<1.2	≤ 2.0	Yes
	Total Phosphorus	<0.1	≤ 1.0	Yes
	pH (S.U.)	6.10	6.0-9.0	Yes
005	Oil & Grease	<5	≤ 5.0	Yes
	BOD5	<3	≤ 10	Yes
	COD	<10	≤ 30	Yes
	TSS	<3	≤ 30	Yes
	Total Nitrogen	<1.2	≤ 2.0	Yes
	Total Phosphorus	<0.1	≤ 1.0	Yes
	pH (S.U.)	6.19	6.0-9.0	Yes
006	Oil & Grease	<5	≤ 5.0	Yes
	BOD5	<3	≤ 10	Yes
	COD	<10	≤ 30	Yes
	TSS	<3	≤ 30	Yes
	Total Nitrogen	<1.2	≤ 2.0	Yes
	Total Phosphorus	<0.1	≤ 1.0	Yes
	pH (S.U.)	6.24	6.0-9.0	Yes
007	Oil & Grease	<5	≤ 5.0	Yes
	BOD5	<3	≤ 10	Yes
	COD	<10	≤ 30	Yes
	TSS	<3	≤ 30	Yes
	Total Nitrogen	<1.2	≤ 2.0	Yes
	Total Phosphorus	<0.1	≤ 1.0	Yes
	pH (S.U.)	6.29	6.0-9.0	Yes
008	Oil & Grease	<5	≤ 5.0	Yes
	BOD5	<3	≤ 10	Yes
	COD	<10	≤ 30	Yes
	TSS	<3	≤ 30	Yes
	Total Nitrogen	<1.79	≤ 2.0	Yes
	Total Phosphorus	<0.1	≤ 1.0	Yes
	pH (S.U.)	5.95[1]	6.0-9.0	No [1]
009	Oil & Grease	<5	≤ 5.0	Yes
	BOD5	<3	≤ 10	Yes
	COD	<10	≤ 30	Yes
	TSS	<3	≤ 30	Yes
	Total Nitrogen	<1.27	≤ 2.0	Yes
	Total Phosphorus	<0.1	≤ 1.0	Yes
	pH (S.U.)	6.36	6.0-9.0	Yes

[1] Typically, rainfall pH values slightly below 6.0 are assumed to be natural causes like acid rain. Outfall 008 consists solely of roof drains with no exposure to industrial materials to decrease pH, so the pH of 5.95 is thought to be from causes outside of the facility's influence.

004.B. Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) stream conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from the outfalls are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations are not proposed.

004.C. Anti-Backsliding

Previous limits, shown in Tables 18 & 19, can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l).

Table 18. Previous effluent limitations for Outfall 004

Parameter	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
pH (S.U.)	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	100.0	1/6 Months	Grab
Oil & Grease	15.0	1/6 Months	Grab
Chemical Oxygen Demand	120.0	1/6 Months	Grab

Table 19. Previous effluent limitations for Outfalls 005-009

Parameter	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
pH (S.U.)	XXX	1/6 Months	Grab
Total Suspended Solids (TSS)	100.0	1/6 Months	Grab
Oil & Grease	15.0	1/6 Months	Grab

004.D. Proposed Effluent Limitations and Monitoring Requirements

Since the facility has stated that No Exposure conditions exist and provided stormwater pollutant concentration data consistent with No Exposure Certification benchmarks, no stormwater monitoring requirements are proposed in the Draft permit.

Development of Effluent Limitations

Outfall No.	010	**Design Flow (MGD)**	0
Latitude	40º 31' 52"	**Longitude**	-79º 50' 12"

Wastewater Description: Sump discharge draining mostly seal water from raw water pumps along with minor groundwater infiltration

Though this discharge was described as mostly seal water from raw water pumps, it is assumed that treated water is entering the Outfall due to a TRC concentration of 0.72 mg/L reported in the application.

010.A. Technology-Based Limitations

Federal Effluent Limitation Guidelines

Hulton Water Purification Plant is not subject to Federal Effluent Limitation Guidelines (ELGs).

Regulatory Effluent Standards and Monitoring Requirements

The pH effluent range for all Industrial waste process and non-process discharges pursuant with 25 Pa. Code § 92a.48(a)(2) and 25 Pa. Code § 95.2 is indicated in Table 25 below.

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1) as indicated in Table 25 below.

Pursuant to 25 Pa. Code § 92a.48(b) the imposition of technology-based Total Residual Chlorine (TRC) limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELG's or a facility specific BPJ evaluation as indicated in Table 25 below.

According to the discharge description and sample data provided, this is not an iron-bearing wastewater so the 25 Pa. Code § 95.2(4) effluent standard of 7 mg/L dissolved iron will not be applied.

Table 25. Regulatory Effluent Standards

Parameter	Monthly Avg	Daily Max	Instantaneous Max, IMAX
Flow (MGD)	Monitor	Monitor	–
pH (S.U.)	Wastes must have a pH of not less than 6.0 nor greater than 9.0		
Total Residual Chlorine	0.5 mg/L	–	1.6

010.B. Water Quality-Based Effluent Limitations (WQBEL)

Toxics Management Spread Sheet

See Section 001.B. for explanation of the TMS.

Reasonable Potential Analysis and WQBEL Development for Outfall 010

See Section 001.B. for explanation of Reasonable Potential Analysis and WQBEL Development. A discharge flow of 0.00144 MGD, the maximum flow reported on the application, was used. No effluent limitations were recommended by the TMS. The Output from the TMS is included in Attachment B.

Table 26. TMS Inputs for Outfall 010

Discharge Information	
Parameter	**Value**
River Mile Index	0.24
Discharge Flow (MGD)	0.00144
Basin/Stream Information	
Parameter	**Value**
Drainage Area (mi^2)	11,600
Q_{7-10} (cfs)	2390
Low-flow yield (cfs/mi^2)	0.206
Elevation (ft)	725

Total Residual Chlorine

See Section 001.B. for explanation of TRC modeling. The results of the modeling, included in Attachment C, indicate that an average monthly limit of 0.5 mg/L and a daily maximum limit of 1.17 mg/L are required for TRC.

Table 27. TRC limits from TRC_CALC

Parameter	Monthly Average (mg/L)	Daily Max (mg/L)
Total Residual Chlorine	0.5	1.17

010.C. Proposed Effluent Limitations and Monitoring Requirements

Effluent limits applicable at Outfall 010 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in Table 28.

Table 28. Effluent limits and monitoring requirements for Outfall 010

Parameter	Mass (pounds)		Concentration (mg/L)			Samples	
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	IMAX	Frequency	Sample Type
Flow (MGD)	Report	Report	—	—	—	2/month	Measure
pH (S.U.)	—	—	6.0-9.0			2/month	Grab
Total Residual Chlorine	—	—	0.5	1.17	1.6	2/month	Grab

Development of Effluent Limitations

Outfall No.	011	**Design Flow (MGD)**	0
Latitude	40º 31' 52"	**Longitude**	-79º 50' 13"

Wastewater Description: Blowdown of intake screen using finished potable water

011.A. Technology-Based Limitations

Federal Effluent Limitation Guidelines

Hulton Water Purification Plant is not subject to Federal Effluent Limitation Guidelines (ELGs).

Regulatory Effluent Standards and Monitoring Requirements

The pH effluent range for all Industrial waste process and non-process discharges pursuant with 25 Pa. Code § 92a.48(a)(2) and 25 Pa. Code § 95.2 is indicated in Table 29 below.

Pursuant to 25 Pa. Code § 92a.48(b) the imposition of technology-based Total Residual Chlorine (TRC) limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELG's or a facility specific BPJ evaluation as indicated in Table 29 below.

Dissolved Iron and pH, included for other Outfalls, are not included since this discharge is, in essence, a potable water discharge which should already be compliant with industrial waste limitations set by 25 Pa. Code § 95.2.

Table 29. Regulatory Effluent Standards

Parameter	Monthly Avg	Daily Max	Instantaneous Max, IMAX
Flow (MGD)	Monitor	Monitor	–
Total Residual Chlorine	0.5 mg/L	–	1.6

Best Practicable Control Technology Currently Achievable (BPT)

The Department's reference document *Technology-Based Control Requirements for Water Treatment Plant Wastes* (DEP-ID 362-2183-003) established BPT for discharges of WTPs wastewater. Since natural sediment would be the only pollutant of concern accumulated at the screen, Total Suspended Solids (TSS) is the only BPT parameter applied. A Part C condition requiring collection of screenings at intake structures is included in the Draft permit.

Table 30. TSS BPT Limit from *Technology-Based Control Requirements for Water Treatment Plant Wastes*

Parameter	Monthly Avg (mg/L)	Daily Max (mg/L)
Total Suspended solids (TSS)	30.0	60.0

011.B. Water Quality-Based Effluent Limitations (WQBEL)

Toxics Management Spread Sheet

See Section 001.B. for explanation of the TMS.

Reasonable Potential Analysis and WQBEL Development for Outfall 011

See Section 001.B. for explanation of Reasonable Potential Analysis and WQBEL Development. A discharge flow of 0.00072 MGD, the maximum flow reported on the application, was used. No effluent limitations were recommended by the TMS. The Output from the TMS is included in Attachment B.

Table 31. TMS Inputs for Outfall 011

Discharge Information	
Parameter	**Value**
River Mile Index	0.24
Discharge Flow (MGD)	0.00072
Basin/Stream Information	
Parameter	**Value**
Drainage Area (mi^2)	11,600
Q_{7-10} (cfs)	2390
Low-flow yield (cfs/mi^2)	0.206
Elevation (ft)	725

Total Residual Chlorine

See Section 001.B. for explanation of TRC modeling. The results of the modeling, included in Attachment C, indicate that an average monthly limit of 0.5 mg/L and a daily maximum limit of 1.17 mg/L are required for TRC.

Table 32. TRC limits from TRC_CALC

Parameter	Monthly Average (mg/L)	Daily Max (mg/L)
Total Residual Chlorine	0.5	1.17

011.C. Proposed Effluent Limitations and Monitoring Requirements

Effluent limits applicable at Outfall 011 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in Table 33.

Table 33. Effluent limits and monitoring requirements for Outfall 011

Parameter	Mass (pounds)		Concentration (mg/L)			Samples	
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	IMAX	Frequency	Sample Type
Flow (MGD)	Report	Report	—	—	—	2/month	Measure
Total Residual Chlorine	—	—	0.5	1.17	1.6	2/month	Grab
Total Suspended Solids (TSS)	—	—	30.0	60.0	—	2/month	Grab

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **B**)
☒	TRC Model Spreadsheet (see Attachment **C**)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: Establishing Effluent Limits for Individual Industrial Permits (BCW-PMT-032)
☒	Other: USGS StreamStats (see Attachment A)

Attachment A:
USGS StreamStats at Point of Discharge

StreamStats Report: PA0217905 Hulton Water Purification Plant Allegheny River

Region ID: PA
Workspace ID: PA20241028171206914000
Clicked Point (Latitude, Longitude): 40.53172, -79.83802
Time: 2024-10-28 13:12:37 -0400

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	6.9729	degrees
DRNAREA	Area that drains to a point on a stream	11600	square miles
ELEV	Mean Basin Elevation	1596	feet
PRECIP	Mean Annual Precipitation	44	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [97.0 Percent (11200 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	11600	square miles	2.33	1720
ELEV	Mean Basin Elevation	1596	feet	898	2700
PRECIP	Mean Annual Precipitation	44	inches	38.7	47.9

Low-Flow Statistics Parameters [3.0 Percent (351 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	11600	square miles	2.26	1400
ELEV	Mean Basin Elevation	1596	feet	1050	2580

Low-Flow Statistics Disclaimers [97.0 Percent (11200 square miles) Low Flow Region 3]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [97.0 Percent (11200 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	1520	ft^3/s
30 Day 2 Year Low Flow	1930	ft^3/s
7 Day 10 Year Low Flow	1010	ft^3/s
30 Day 10 Year Low Flow	1210	ft^3/s
90 Day 10 Year Low Flow	1630	ft^3/s

Low-Flow Statistics Disclaimers [3.0 Percent (351 square miles) Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [3.0 Percent (351 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	1520	ft^3/s
30 Day 2 Year Low Flow	1930	ft^3/s
7 Day 10 Year Low Flow	993	ft^3/s
30 Day 10 Year Low Flow	1080	ft^3/s
90 Day 10 Year Low Flow	1490	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

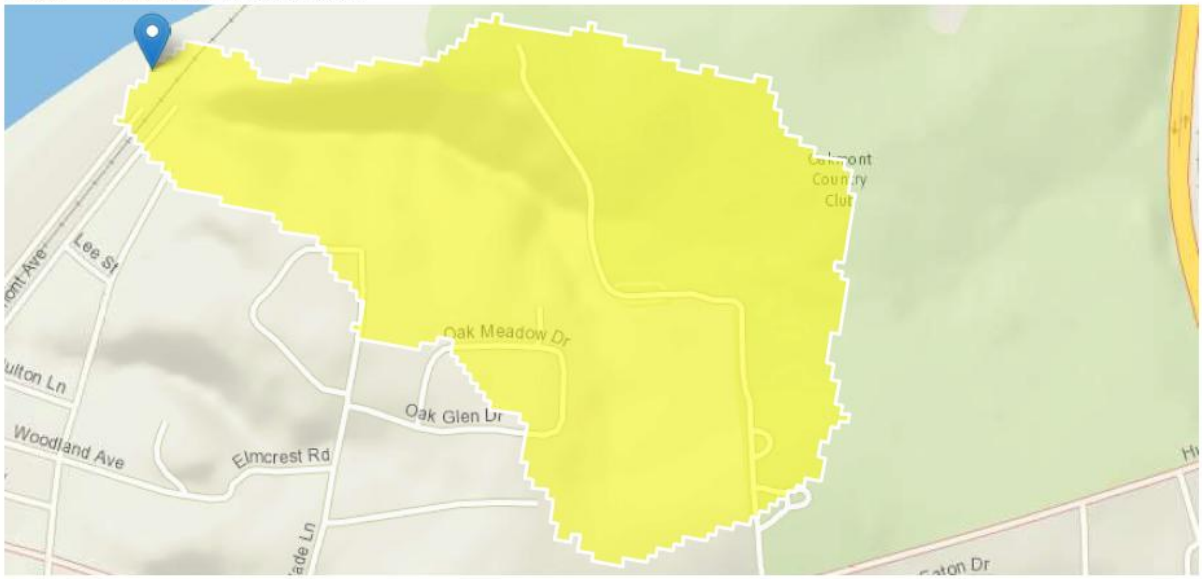
Statistic	Value	Unit
7 Day 2 Year Low Flow	1520	ft^3/s
30 Day 2 Year Low Flow	1930	ft^3/s
7 Day 10 Year Low Flow	1010	ft^3/s
30 Day 10 Year Low Flow	1210	ft^3/s
90 Day 10 Year Low Flow	1630	ft^3/s

Low-Flow Statistics Citations

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

StreamStats Report: PA0217905 Hulton Water Purification Plant Falling Springs Run

Region ID: PA
Workspace ID: PA20241028172222948000
Clicked Point (Latitude, Longitude): 40.53059, -79.83698
Time: 2024-10-28 13:22:48 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	7.113	degrees
DRNAREA	Area that drains to a point on a stream	0.14	square miles
ELEV	Mean Basin Elevation	938	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.14	square miles	2.26	1400
ELEV	Mean Basin Elevation	938	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00243	ft^3/s
30 Day 2 Year Low Flow	0.00507	ft^3/s
7 Day 10 Year Low Flow	0.000633	ft^3/s

Statistic	Value	Unit
30 Day 10 Year Low Flow	0.00154	ft^3/s
90 Day 10 Year Low Flow	0.00327	ft^3/s

Low-Flow Statistics Citations

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

Attachment B:
Toxics Management Spreadsheet

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Hulton Water Purification Plant** NPDES Permit No.: **PA0217905** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IW Process Effluent without ELG**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.15	72.8	8.67						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		3680									
	Chloride (PWS)	mg/L		100									
	Bromide	mg/L		0.13									
	Sulfate (PWS)	mg/L		1900									
	Fluoride (PWS)	mg/L		0.58									
Group 2	Total Aluminum	µg/L		2600									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		51.6									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	µg/L	<	5									
	Total Cobalt	µg/L	<	1									
	Total Copper	mg/L		0.004									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		21									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		470									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		640									
	Total Mercury	µg/L	<	0.09									
	Total Nickel	µg/L		6.32									
	Total Phenols (Phenolics) (PWS)	µg/L	<	50									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	mg/L		0.0094									
	Total Molybdenum	µg/L	<	2									

Stream / Surface Water Information

Hulton Water Purification Plant, NPDES Permit No. PA0217905, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Falling Springs Run**

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042367	0.1	790	0.14			Yes
End of Reach 1	042367	0	725	0.15			Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.1	0.0045										100	7		
End of Reach 1	0	0.0046													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.1														
End of Reach 1	0														

Model Results

Hulton Water Purification Plant, NPDES Permit No. PA0217905, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.000 PMF: 1 Analysis Hardness (mg/l): 72.874 Analysis pH: 8.62

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	752	
Total Antimony	0	0		0	1,100	1,100	1,103	
Total Arsenic	0	0		0	340	340	341	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	21,057	
Total Boron	0	0		0	8,100	8,100	8,122	
Total Cadmium	0	0		0	1.480	1.55	1.55	Chem Translator of 0.957 applied
Total Chromium (III)	0	0		0	439.683	1,391	1,395	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	16.3	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	95.3	
Total Copper	0	0		0	9.974	10.4	10.4	Chem Translator of 0.96 applied
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	45.684	54.6	54.7	Chem Translator of 0.837 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.65	Chem Translator of 0.85 applied
Total Nickel	0	0		0	358.261	359	360	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	1.867	2.2	2.2	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	65.2	
Total Zinc	0	0		0	89.621	91.6	91.9	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 0.000 PMF: 1 Analysis Hardness (mg/l): 72.874 Analysis pH: 8.62

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	221	
Total Arsenic	0	0		0	150	150	150	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,111	
Total Boron	0	0		0	1,600	1,600	1,604	
Total Cadmium	0	0		0	0.197	0.21	0.21	Chem Translator of 0.922 applied
Total Chromium (III)	0	0		0	57.194	66.5	66.7	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	10.4	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	19.1	
Total Copper	0	0		0	6.834	7.12	7.14	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,504	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	1.780	2.13	2.13	Chem Translator of 0.837 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	0.91	Chem Translator of 0.85 applied
Total Nickel	0	0		0	39.792	39.9	40.0	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	5.0	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	13.0	
Total Zinc	0	0		0	90.354	91.6	91.9	Chem Translator of 0.986 applied

☑ *THH* CCT (min): 0.000 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	5.62	
Total Arsenic	0	0		0	10	10.0	10.0	
Total Barium	0	0		0	2,400	2,400	2,407	
Total Boron	0	0		0	3,100	3,100	3,108	
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	
Dissolved Iron	0	0		0	300	300	301	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,003	
Total Mercury	0	0		0	0.050	0.05	0.05	
Total Nickel	0	0		0	610	610	612	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.24	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 0.000 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	
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	

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

No. Samples/Month: 4

Pollutants	*Mass Limits*		*Concentration Limits*				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Aluminum	0.94	0.94	750	752	752	µg/L	750	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	Report	Report	Report	Report	Report	µg/L	10.4	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	0.009	0.013	0.007	0.01	0.01	mg/L	0.007	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	1,504	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Manganese	1.25	1.96	1,003	1,564	2,507	µg/L	1,003	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Nickel	Report	Report	Report	Report	Report	µg/L	40.0	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	mg/L	0.092	AFC	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	2,407	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	1,604	µg/L	Discharge Conc < TQL
Total Cadmium	0.21	µg/L	Discharge Conc < TQL
Total Chromium (III)	66.7	µg/L	Discharge Conc < TQL
Total Cobalt	19.1	µg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	301	µg/L	Discharge Conc < TQL
Total Lead	2.13	µg/L	Discharge Conc < TQL
Total Mercury	0.05	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	5.0	µg/L	Discharge Conc < TQL
Total Silver	2.2	µg/L	Discharge Conc < TQL
Total Thallium	0.24	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS

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Toxics Management Spreadsheet
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Discharge Information

Instructions | Discharge | Stream

Facility: **Hulton Water Purification Plant** NPDES Permit No.: **PA0217905** Outfall No.: **003**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IW Process Effluent without ELG**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.3	95.1	9.2						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		7100									
	Chloride (PWS)	mg/L		119									
	Bromide	mg/L	<	0.1									
	Sulfate (PWS)	mg/L		3000									
	Fluoride (PWS)	mg/L		0.39									
Group 2	Total Aluminum	µg/L		2500									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	50									
	Total Barium	µg/L		42.3									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L		3									
	Hexavalent Chromium	µg/L	<	5									
	Total Cobalt	µg/L	<	1									
	Total Copper	mg/L		0.01									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	500									
	Dissolved Iron	µg/L		20									
	Total Iron	µg/L		380									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		132									
	Total Mercury	µg/L	<	0.09									
	Total Nickel	µg/L		8.5									
	Total Phenols (Phenolics) (PWS)	µg/L	<	50									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	mg/L		0.0134									
	Total Molybdenum	µg/L	<	2									

Stream / Surface Water Information

Hulton Water Purification Plant, NPDES Permit No. PA0217905, Outfall 003

Instructions | Discharge | Stream

Receiving Surface Water Name: Allegheny River

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	0.24	725	11600			Yes
End of Reach 1	042133	0.2	724.9	11600.1			Yes

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

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.24	0.206										100	7		
End of Reach 1	0.2	0.206													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.24														
End of Reach 1	0.2														

Model Results

Hulton Water Purification Plant, NPDES Permit No. PA0217905, Outfall 003

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 1.744 PMF: 0.010 Analysis Hardness (mg/l): 99.905 Analysis pH: 7.01

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	38,886	
Total Antimony	0	0		0	1,100	1,100	57,034	
Total Arsenic	0	0		0	340	340	17,629	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	1,088,821	
Total Boron	0	0		0	8,100	8,100	419,974	
Total Cadmium	0	0		0	2.012	2.13	110	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.322	1,802	93,413	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	845	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	4,926	
Total Copper	0	0		0	13.427	14.0	725	Chem Translator of 0.96 applied
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	64.515	81.5	4,228	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	85.4	Chem Translator of 0.85 applied
Total Nickel	0	0		0	467.861	469	24,307	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	3.212	3.78	196	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	3,370	
Total Zinc	0	0		0	117.087	120	6,207	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 720 PMF: 0.068 Analysis Hardness (mg/l): 99.986 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	77,724	
Total Arsenic	0	0		0	150	150	52,993	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	1,448,488	
Total Boron	0	0		0	1,600	1,600	565,264	
Total Cadmium	0	0		0	0.246	0.27	95.6	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.106	86.2	30,443	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	3,672	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	6,713	
Total Copper	0	0		0	8.955	9.33	3,295	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	7,724,835	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.516	3.18	1,124	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	320	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.000	52.2	18,426	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	1,763	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	4,593	
Total Zinc	0	0		0	118.125	120	42,325	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 720 PMF: 0.068 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	1,978	
Total Arsenic	0	0		0	10	10.0	3,533	
Total Barium	0	0		0	2,400	2,400	847,895	
Total Boron	0	0		0	3,100	3,100	1,095,198	
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	
Dissolved Iron	0	0		0	300	300	105,987	
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	353,290	
Total Mercury	0	0		0	0.050	0.05	17.7	
Total Nickel	0	0		0	610	610	215,507	
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	84.8	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.096 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	
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	

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

No. Samples/Month: 4

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Hulton Water Purification Plant** NPDES Permit No.: **PA0217905** Outfall No.: **010**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IW Process Effluent without ELG**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.00144	86.8	7.57						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		132									
	Chloride (PWS)	mg/L		21.9									
	Bromide	mg/L	<	0.1									
	Sulfate (PWS)	mg/L		48.3									
	Fluoride (PWS)	mg/L	<	0.1									
Group 2	Total Aluminum	µg/L		91.1									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		41.3									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	µg/L	<	5									
	Total Cobalt	µg/L	<	1									
	Total Copper	mg/L		0.007									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L		160									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		104									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		2.53									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	mg/L	<	0.005									
	Total Molybdenum	µg/L	<	2									

Stream / Surface Water Information

Hulton Water Purification Plant, NPDES Permit No. PA0217905, Outfall 010

Instructions | Discharge | Stream

Receiving Surface Water Name: Allegheny River

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	0.24	725	11600			Yes
End of Reach 1	042122	0.2	724.9	11600.1			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.24	0.206										100	7		
End of Reach 1	0.2	0.206													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.24														
End of Reach 1	0.2														

Model Results

Hulton Water Purification Plant, NPDES Permit No. PA0217905, Outfall 010

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 1.744 PMF: 0.010 Analysis Hardness (mg/l): 99.999 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	7,946,422	
Total Antimony	0	0		0	1,100	1,100	11,654,753	
Total Arsenic	0	0		0	340	340	3,602,378	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	#########	
Total Boron	0	0		0	8,100	8,100	85,821,360	
Total Cadmium	0	0		0	2.014	2.13	22,601	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.758	1,803	19,103,523	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	172,631	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	1,006,547	
Total Copper	0	0		0	13.439	14.0	148,322	Chem Translator of 0.96 applied
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	64.581	81.6	865,035	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	17,451	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.231	469	4,970,955	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	3.217	3.78	40,096	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	688,690	
Total Zinc	0	0		0	117.179	120	1,269,469	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 720 PMF: 0.068 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	16,147,995	
Total Arsenic	0	0		0	150	150	11,009,996	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	#########	
Total Boron	0	0		0	1,600	1,600	#########	
Total Cadmium	0	0		0	0.246	0.27	19,864	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.114	86.2	6,325,577	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	762,994	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	1,394,600	
Total Copper	0	0		0	8.956	9.33	684,741	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	#########	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	233,528	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	66,492	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.006	52.2	3,828,759	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	366,204	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	954,200	
Total Zinc	0	0		0	118.139	120	8,794,509	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 720 PMF: 0.068 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	411,040	
Total Arsenic	0	0		0	10	10.0	734,000	
Total Barium	0	0		0	2,400	2,400	#########	
Total Boron	0	0		0	3,100	3,100	#########	
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	
Dissolved Iron	0	0		0	300	300	22,019,993	
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	73,399,976	
Total Mercury	0	0		0	0.050	0.05	3,670	
Total Nickel	0	0		0	610	610	44,773,985	
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	17,616	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 720 PMF: 0.096 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	
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	

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

No. Samples/Month: 4

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	Discharge Conc < TQL
Total Aluminum	5,093,336	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	55,008,027	µg/L	Discharge Conc < TQL
Total Cadmium	14,487	µg/L	Discharge Conc < TQL
Total Chromium (III)	6,325,577	µg/L	Discharge Conc < TQL
Hexavalent Chromium	110,650	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	645,156	µg/L	Discharge Conc < TQL
Total Copper	95.1	mg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	22,019,993	µg/L	Discharge Conc < TQL
Total Iron	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	233,528	µg/L	Discharge Conc < TQL
Total Manganese	73,399,976	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	3,670	µg/L	Discharge Conc < TQL
Total Nickel	3,186,182	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	366,204	µg/L	Discharge Conc < TQL
Total Silver	25,700	µg/L	Discharge Conc < TQL
Total Thallium	17,616	µg/L	Discharge Conc < TQL
Total Zinc	814	mg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Hulton Water Purification Plant** NPDES Permit No.: **PA0217905** Outfall No.: **011**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **IW Process Effluent without ELG**

Discharge Characteristics									
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.00072	86.3	7.67						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		146									
	Chloride (PWS)	mg/L		30.3									
	Bromide	mg/L	<	0.1									
	Sulfate (PWS)	mg/L		48.2									
	Fluoride (PWS)	mg/L		0.33									
Group 2	Total Aluminum	µg/L		29.2									
	Total Antimony	µg/L	<	2									
	Total Arsenic	µg/L	<	2									
	Total Barium	µg/L		38.8									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	100									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	2									
	Hexavalent Chromium	µg/L	<	5									
	Total Cobalt	µg/L	<	1									
	Total Copper	mg/L		0.002									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L	<	20									
	Total Iron	µg/L	<	20									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L	<	2									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L		2.03									
	Total Phenols (Phenolics) (PWS)	µg/L	<	50									
	Total Selenium	µg/L	<	5									
	Total Silver	µg/L	<	0.4									
	Total Thallium	µg/L	<	2									
	Total Zinc	mg/L	<	0.005									
	Total Molybdenum	µg/L	<	2									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										
	Carbon Tetrachloride	µg/L	<										

Stream / Surface Water Information

Hulton Water Purification Plant, NPDES Permit No. PA0217905, Outfall 011

Instructions | Discharge | Stream

Receiving Surface Water Name: Allegheny River

No. Reaches to Model: 1

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	042122	0.24	725	11600			Yes
End of Reach 1	042133	0.2	724.9	11600.1			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	0.24	0.206										100	7		
End of Reach 1	0.2	0.206													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	0.24														
End of Reach 1	0.2														

Model Results

Hulton Water Purification Plant, NPDES Permit No. PA0217905, Outfall 011

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 1.744 PMF: 0.010 Analysis Hardness (mg/l): 99.999 Analysis pH: 7.00

Pollutants	Stream Conc	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	15,892,097	
Total Antimony	0	0		0	1,100	1,100	23,308,409	
Total Arsenic	0	0		0	340	340	7,204,417	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	#########	
Total Boron	0	0		0	8,100	8,100	#########	
Total Cadmium	0	0		0	2.014	2.13	45,201	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.760	1,803	38,205,437	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	345,246	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	2,012,999	
Total Copper	0	0		0	13.439	14.0	296,631	Chem Translator of 0.96 applied
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	64.581	81.6	1,730,001	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	34,900	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.233	469	9,941,493	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	3.217	3.78	80,189	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	1,377,315	
Total Zinc	0	0		0	117.180	120	2,538,832	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 720 PMF: 0.068 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	32,295,775	
Total Arsenic	0	0		0	150	150	22,019,847	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	#########	
Total Boron	0	0		0	1,600	1,600	#########	
Total Cadmium	0	0		0	0.246	0.27	39,727	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.114	86.2	12,651,079	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	1,525,977	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	2,789,181	
Total Copper	0	0		0	8.956	9.33	1,369,473	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	#########	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	467,054	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	132,983	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.006	52.2	7,657,473	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	732,403	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	1,908,387	
Total Zinc	0	0		0	118.139	120	17,588,913	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 720 PMF: 0.068 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	822,074	
Total Arsenic	0	0		0	10	10.0	1,467,990	
Total Barium	0	0		0	2,400	2,400	#########	
Total Boron	0	0		0	3,100	3,100	#########	
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	
Dissolved Iron	0	0		0	300	300	44,039,693	
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	#########	
Total Mercury	0	0		0	0.050	0.05	7,340	
Total Nickel	0	0		0	610	610	89,547,376	
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	35,232	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 720 PMF: 0.096 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	
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	

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

No. Samples/Month: 4

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

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	10,186,193	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	#########	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	#########	µg/L	Discharge Conc < TQL
Total Cadmium	28,972	µg/L	Discharge Conc < TQL
Total Chromium (III)	12,651,079	µg/L	Discharge Conc < TQL
Hexavalent Chromium	221,289	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	1,290,251	µg/L	Discharge Conc < TQL
Total Copper	190	mg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	44,039,693	µg/L	Discharge Conc < TQL
Total Iron	#########	µg/L	Discharge Conc < TQL
Total Lead	467,054	µg/L	Discharge Conc < TQL
Total Manganese	#########	µg/L	Discharge Conc < TQL
Total Mercury	7,340	µg/L	Discharge Conc < TQL
Total Nickel	6,372,096	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	732,403	µg/L	Discharge Conc < TQL
Total Silver	51,398	µg/L	Discharge Conc < TQL
Total Thallium	35,232	µg/L	Discharge Conc < TQL
Total Zinc	1,627	mg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS

Attachment C:
TRC Model Spreadsheet

TRC EVALUATION

0.000633	= Q stream (cfs)	0.5	= CV Daily
0.15	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.995	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.020	1.3.2.iii	WLA cfc = 0.012
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.007	5.1d	LTA_cfc = 0.007

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.012	CFC
		INST MAX LIMIT (mg/l) = 0.028	

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

Figure C.1. Outfall 001

TRC EVALUATION

2390	= Q stream (cfs)	0.5	= CV Daily
0.3	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.995	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1634.576	1.3.2.iii	WLA cfc = 1601.584
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 609.082	5.1d	LTA_cfc = 931.086

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

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

Figure C.2. Outfall 003

TRC EVALUATION

2390	= Q stream (cfs)	0.5	= CV Daily
0.00144	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.995	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 340532.748	1.3.2.iii	WLA cfc = 333661.040
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 126890.626	5.1d	LTA_cfc = 193974.875

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

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

Figure C.3. Outfall 010

TRC EVALUATION

2390	= Q stream (cfs)	0.5	= CV Daily
0.00072	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.995	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	**1.3.2.iii**	WLA afc = 681065.477	**1.3.2.iii**	WLA cfc = 667322.068
PENTOXSD TRG	**5.1a**	LTAMULT afc = 0.373	**5.1c**	LTAMULT cfc = 0.581
PENTOXSD TRG	**5.1b**	LTA_afc= 253781.245	**5.1d**	LTA_cfc = 387949.744

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

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

Figure C.4. Outfall 011

Attachment D:
Recent Effluent Limit Exceedances

Effluent Violations for Outfall 001, from: December 1, 2023 To: October 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	05/31/24	Avg Mo	568.0	mg/L	30.0	mg/L
TSS	05/31/24	Daily Max	568.0	mg/L	60.0	mg/L
Total Aluminum	05/31/24	Avg Mo	2330.0	ug/L	750.0	ug/L
Total Aluminum	03/31/24	Avg Mo	2600.0	ug/L	750.0	ug/L
Total Aluminum	03/31/24	Daily Max	2600.0	ug/L	1000.0	ug/L
Total Aluminum	05/31/24	Daily Max	2330.0	ug/L	1000.0	ug/L
Total Mercury	05/31/24	Avg Mo	< 0.090	ug/L	.05	ug/L
Total Mercury	03/31/24	Avg Mo	< 0.09	ug/L	.05	ug/L
Total Mercury	05/31/24	Daily Max	< 0.090	ug/L	.078	ug/L
Total Mercury	03/31/24	Daily Max	< 0.090	ug/L	.078	ug/L

Effluent Violations for Outfall 002, from: December 1, 2023 To: October 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	06/30/24	Avg Mo	170.0	mg/L	30.0	mg/L
TSS	05/31/24	Avg Mo	162.0	mg/L	30.0	mg/L
TSS	06/30/24	Daily Max	170.0	mg/L	60.0	mg/L
TSS	05/31/24	Daily Max	162.0	mg/L	60.0	mg/L
Total Aluminum	06/30/24	Avg Mo	9.84	mg/L	4.0	mg/L
Total Aluminum	05/31/24	Avg Mo	10.7	mg/L	4.0	mg/L
Total Aluminum	06/30/24	Daily Max	9.84	mg/L	8.0	mg/L
Total Aluminum	05/31/24	Daily Max	10.7	mg/L	8.0	mg/L

Total Iron	06/30/24	Avg Mo	15.2	mg/L	2.0	mg/L
Total Iron	05/31/24	Avg Mo	9.09	mg/L	2.0	mg/L
Total Iron	06/30/24	Daily Max	15.2	mg/L	4.0	mg/L
Total Iron	05/31/24	Daily Max	9.09	mg/L	4.0	mg/L
Total Manganese	06/30/24	Avg Mo	3.88	mg/L	1.0	mg/L
Total Manganese	06/30/24	Daily Max	3.88	mg/L	2.0	mg/L

Effluent Violations for Outfall 003, from: December 1, 2023 To: October 31, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
pH	05/31/24	Daily Max	9.20	S.U.	9.0	S.U.
TSS	05/31/24	Avg Mo	1590.0	mg/L	30.0	mg/L
TSS	05/31/24	Daily Max	1590.0	mg/L	60.0	mg/L