Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0010201**
Facility Type	**Industrial**	APS ID	**23560**
Major / Minor	**Minor**	Authorization ID	**1498321**

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

Applicant and Facility Information

Applicant Name	**Columbia Water Company**	Facility Name	**Walnut Street Water Treatment Facility**
Applicant Address	220 Locust Street	Facility Address	20 Walnut Street
	Columbia, PA 17512		Columbia, PA 17512
Applicant Contact	David Lewis	Facility Contact	David Lewis
Applicant Phone	(717) 684-2188	Facility Phone	(717) 684-2188
Client ID	74974	Site ID	788969
SIC Code	4941	Municipality	Columbia Borough
SIC Description	Trans. & Utilities - Water Supply	County	Lancaster
Date Application Received	September 3, 2024	EPA Waived?	Yes
Date Application Accepted	September 18, 2024	If No, Reason	

Purpose of Application: NPDES Renewal.

Summary of Review

Columbia Water Company has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The existing permit was issued on March 6, 2020, and became effective on April 1, 2020, authorizing discharge of treated sewage from the Walnut Street Water Treatment Facility into the Susquehanna River. The existing permit expiration date was March 31, 2025, and the permit has been administratively extended since that time.

Per the previous fact sheet, the treatment plant has a permitted capacity of 4 mgd, and consists of a surface water intake, conventional water treatment process, finished water pumping station, and a wastewater settling basin. The settling basin receives water from the raw water well drain, sedimentation basin drains, and filter backwash and rinse holding tank, and discharges to the Susquehanna River through Outfall 001. Supernatant from the washwater holding tank is recycled back to the headworks, and only settled sludge is sent to the settling basin. Manual grab samples are taken from the basin outfall structure for all monitoring requirements. Settled solids are hauled off site and land applied by Commonwealth Disposal Inc.

Changes in this renewal: No changes have been made to this renewal.

Supplemental information for this facility is provided at the end of this fact sheet.

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

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	July 16, 2025
X		*Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	July 29, 2025

Summary of Review
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)	.55
Latitude	40º 1' 45"	Longitude	76º 30' 30"
Quad Name		Quad Code	
Wastewater Description:	Water Treatment Effluent		
Receiving Waters	Susquehanna River (WWF, MF)	Stream Code	6685
NHD Com ID	57465419	RMI	27.87
Drainage Area	26,000 mi^2	Yield (cfs/mi^2)	0.13
Q_{7-10} Flow (cfs)	3,360	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	1329	Slope (ft/ft)	
Watershed No.	7-G	Chapter 93 Class.	WWF, MF
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	High pH, Mercury, PCBs, Pathogens		
Source(s) of Impairment	Agriculture, Source Unknown, Source Unknown, Source Unknown		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Lancaster City Water Bureau		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	0.55

Changes Since Last Permit Issuance: USGS PA StreamStats provided a drainage area of 26,000 mi^2 and a Q_{7-10} of 3,360 cfs at the point of discharge.

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Industrial	Physical (Industrial Waste)	Sedimentation	No Disinfection	0.550
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.550	N/A	Not Overloaded	Lagoon Settling	Applied Off-Site

Changes Since Last Permit Issuance: No changes have occurred to the facility or treated flows since the last permit issuance.

Other Comments: None

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet.
Summary of Inspections:	11/7/2024: A routine inspection was conducted. Since the last inspection, the Susquehanna River intake upstream of the traveling screen building was upgraded and a new fine screen was installed on the intake. The concrete lined wastewater lagoon appeared mostly clear with minimal leaf accumulation in the southern portion of the lagoon where the discharge point is located. Field sampling results were within permitted limits. The effluent appeared clear.

Other Comments: There are no open violations for this Applicant.

Compliance History

DMR Data for Outfall 001 (from May 1, 2024 to April 30, 2025)

Parameter	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24
Flow (MGD) Average Monthly	0.016607	0.034573	0.02405	0.03392	0.030739	0.02534 6	0.027638	0.053558	0.04099	0.027535	0.028019	0.026255
Flow (MGD) Daily Maximum	0.0744	0.21466	0.034272	0.05835	0.076304	0.034384	0.039904	0.35596	0.13418	0.035184	0.085856	0.042016
pH (S.U.) Instantaneous Minimum	7.6	7.5	7.5	7.5	7.4	7.9	8.0	7.7	7.5	7.8	8.0	7.7
pH (S.U.) Instantaneous Maximum	8.3	7.8	7.9	7.8	8.0	8.2	8.2	8.3	8.9	8.6	8.7	8.8
TRC (mg/L) Average Monthly	0.08	0.07	0.14	0.12	0.07	0.04	0.03	0.04	0.05	0.04	0.07	0.14
TRC (mg/L) Instantaneous Maximum	0.19	0.22	0.5	0.35	0.18	0.09	0.08	0.08	0.13	0.08	0.39	0.43
TSS (lbs/day) Average Monthly	4.0	3	0.9	< 0.09	0.7	< 0.8	2	2.0	2	1.0	1	< 0.7
TSS (lbs/day) Daily Maximum	0.07	4	0.9	< 1	0.7	< 0.8	2	3.0	4	1.0	2	< 0.7
TSS (mg/L) Average Monthly	22.2	10.4	4	< 4	4	< 4	6.1	6.8	3	5.9	6.4	< 4
TSS (mg/L) Daily Maximum	51	17	4	< 4	4	< 4	6.2	12.5	17	6.2	8.8	< 4
Total Aluminum (lbs/day) Average Monthly	0.09	0.2	0.07	0.03	0.04	0.06	0.2	0.2	0.3	0.2	0.5	0.08
Total Aluminum (lbs/day) Daily Maximum	0.002	0.3	0.1	0.04	0.05	0.07	0.2	0.3	0.5	0.2	0.5	0.08
Total Aluminum (mg/L) Average Monthly	0.576	0.71	0.3	0.144	0.24	0.31	0.85	0.72	1.38	1.04	2.1	0.437
Total Aluminum (mg/L) Daily Maximum	0.895	1.08	0.44	0.19	0.28	0.32	0.96	1.16	2.39	1.13	2.3	0.473
Total Iron (lbs/day) Average Monthly	0.02	0.1	0.02	0.02	0.01	< 0.01	0.02	0.03	0.01	0.1	0.01	0.009

Total Iron (lbs/day) Daily Maximum	0.05	0.1	0.03	0.02	0.02	< 0.01	0.02	0.06	0.01	0.1	0.01	0.009
Total Iron (mg/L) Average Monthly	0.20	0.37	0.1	0.104	0.08	< 0.05	0.07	0.11	0.05	0.057	0.047	0.05
Total Iron (mg/L) Daily Maximum	0.22	0.57	0.15	0.104	0.1	< 0.05	0.08	0.23	0.05	0.066	0.05	0.05
Total Manganese (lbs/day) Average Monthly	0.1	0.1	0.05	0.07	0.04	0.06	0.07	0.1	0.2	0.2	0.1	0.07
Total Manganese (lbs/day) Daily Maximum	0.2	0.1	0.06	0.08	0.05	0.07	0.08	0.3	0.2	0.2	0.2	0.07
Total Manganese (mg/L) Average Monthly	1.0	0.39	0.25	0.308	0.23	0.29	0.28	0.568	0.66	0.91	0.51	0.41
Total Manganese (mg/L) Daily Maximum	1.12	0.58	0.25	0.34	0.28	0.33	0.33	1.14	0.75	1.05	0.72	0.41

Existing Effluent Limitations and Monitoring Requirements

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.50	XXX	1.0	1/day	Grab
Total Suspended Solids	Report	Report	XXX	30	60	75	2/month	8-Hr Composite
Aluminum, Total	Report	Report	XXX	4.0	8.0	10	2/month	8-Hr Composite
Iron, Total	Report	Report	XXX	2.0	4.0	5	2/month	8-Hr Composite
Manganese, Total	Report	Report	XXX	1.0	2.0	2.5	2/month	8-Hr Composite

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

at Outfall 001

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .55
Latitude 40º 1' 45" **Longitude** 76º 30' 30"
Wastewater Description: Water Treatment Effluent

Technology-Based Effluent Limitations

DEP's Guidance Document No. 362-2183-003 (Technology-Based Control Requirements for Water Treatment Plant Wastes) defines Best Practicable Control Technology Currently Available (BPT) effluent control requirements as follows:

Parameter	Monthly Average (mg/L)	Daily Maximum (mg/L)
Total Suspended Solids	30	60
Total Iron	2	4
Total Aluminum	4	8
Total Manganese	1	2
Flow	Monitor	
pH	6 to 9 at all times	
Total Residual Chlorine	0.5	1.0

These technology based limitations are included in the existing permit limitations, and will remain in the renewal. The current monitoring frequencies are less stringent than those listed in Table 6-4 of DEP's Permit Writer's Manual (362-0400-001). Because the permit demonstrated no history of non-compliance within the last two years of eDMR data, the monitoring frequency requirements will remain unchanged for the permit reissuance.

Toxics

Effluent sample results for toxic pollutants reported on the renewal application were entered into DEP's Toxics Management Spreadsheet Version 1.3 to develop appropriate permit requirements for toxic pollutants of concern. The Toxics Management Spreadsheet combines the functions of PENTOXSD and DEP's Toxics Screening Analysis. Based on effluent sample results reported on the application, the Toxics Management Spreadsheet did not recommend any additional parameters receive monitoring or limits.

This data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003) and DEP's SOP No. BPNPSM-PMT-033. The results are attached to this fact sheet. The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and IMAX limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
b. For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
c. For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10%-50% of the WQBEL.

Since the reported maximum concentrations were less than 10% of their respective WQBEL, per DEP's SOP No. BPNPSM-PMT-033, no limits or monitoring are necessary.

PFAS-Related Compounds

DEP's NPDES renewal application for Major Sewage Facilities now requires effluent testing for PFAS related compounds as part of Pollutant Group 1: Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA). PFAS monitoring in NPDES permits will not be required for water treatment plant backwash unless there is a treatment process in place designed to remove PFAS from drinking water. Therefore, monitoring for these parameters will not be required in the permit.

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the Pennsylvania Chesapeake Watershed Implementation Plan (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a Phase 2 Watershed Implementation Plan Wastewater Supplement (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. The Phase 2 Supplement was most recently revised on September 6, 2017. Industrial discharges have been prioritized by Central Office based on their delivered TN and TP loadings to the Bay. Significant industrial wastewater dischargers are facilities that discharge more than 75 lbs/day of TN or 25 lbs/day of TP on an average annual basis and the rest are classified as non-significant dischargers. DEP developed a Chesapeake Bay industrial waste (IW) monitoring plan for all industrial facilities that discharge to the Chesapeake Bay. This facility is classified as a non-significant discharger with little or no potential to introduce nutrients to the receiving stream; therefore, no monitoring for TP and TN series will be required at this time.

Total Dissolved Solids (TDS)

DEP's SOP No. BCW-PMT-032 states that at a minimum, a monitoring requirement should be established for TDS for any discharge that exceeds 1,000 mg/l. Columbia Water Company reported a maximum effluent value of 257 mg/l for TDS in the NPDES application. Therefore, a monitoring requirement for TDS is not required.

Stormwater

According to 40 CFR 122.26(b)(14), facilities having SIC Code 4941 are not required by EPA to have its stormwater covered by an NPDES permit. According to the previous fact sheet, roof drains are connected to the water treatment system and the runoff is processed as raw water. No stormwater is directly connected to the settling basin.

Total Residual Chlorine (TRC)

Based on the attached TRC Spreadsheet output, which uses the equations and calculations from the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (ID No. 391-2000-015), the facility's discharge must meet a monthly average limit of 0.50 mg/L and an instantaneous maximum limit of 1.63 mg/L. The technology limits provided by 362-2183-003 are more stringent and will therefore be applied in the permit.

Oil and Grease

DEP's SOP No. BPNPSM-PMT-032 recommends a monitor requirement for Oil and Grease if the maximum concentration reported in the application is greater than 4 mg/l. Oil and Grease analysis results in the application were non-detect, so Oil and Grease monitoring will not be included in the permit.

Anti-Degradation

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303(d) Listed Streams

This discharge is located on a 303(d) listed stream segment that is impaired for pathogens, PCBs, and mercury due to an unknown source, and high pH due to agriculture.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions addressed by DEP in this fact sheet.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
TRC	XXX	XXX	XXX	0.50	XXX	1.0	1/day	Grab
TSS	Report	Report	XXX	30	60	75	2/month	8-Hr Composite
Total Aluminum	Report	Report	XXX	4.0	8.0	10	2/month	8-Hr Composite
Total Iron	Report	Report	XXX	2.0	4.0	5	2/month	8-Hr Composite
Total Manganese	Report	Report	XXX	1.0	2.0	2.5	2/month	8-Hr Composite

Compliance Sampling Location: Outfall 001

Other Comments: None

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-032, No. BPNPSM-PMT-001
☐	Other:

Columbia Water Company PA0010201 Outfall 001

Region ID: PA
Workspace ID: PA20250710182354354000
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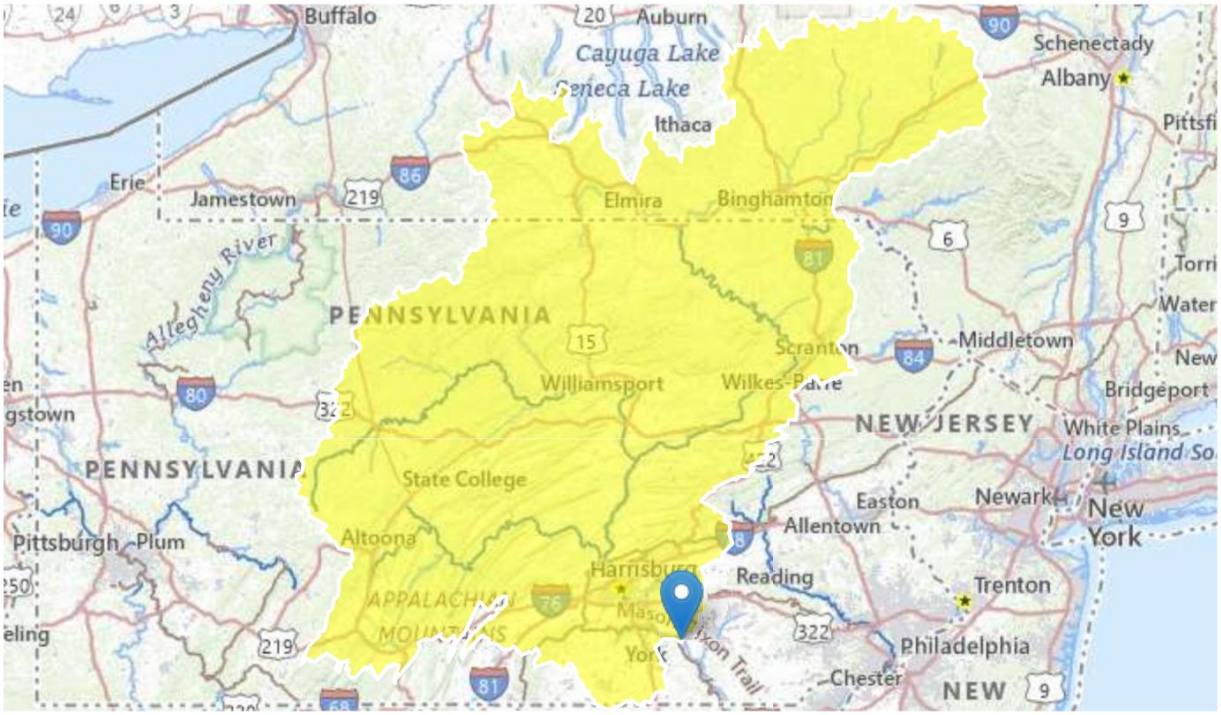
Time: 2025-07-10 14:24:33 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	8.1397	degrees
CARBON	Percentage of area of carbonate rock	6.64	percent
DRNAREA	Area that drains to a point on a stream	26000	square miles
ELEV	Mean Basin Elevation	1329	feet
FOREST	Percentage of area covered by forest	67.813	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	45.4321	percent

Parameter Code	Parameter Description	Value	Unit
PRECIP	Mean Annual Precipitation	40	inches
ROCKDEP	Depth to rock	4.5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.76	miles per square mile
URBAN	Percentage of basin with urban development	2.8813	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [4.0 Percent (984 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	8.1397	degrees	1.7	6.4
DRNAREA	Drainage Area	26000	square miles	4.78	1150
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	2.8813	percent	0	89

Low-Flow Statistics Parameters [43.0 Percent (11100 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	6.64	percent	0	99
DRNAREA	Drainage Area	26000	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
STRDEN	Stream Density	1.76	miles per square mile	0.51	3.1

Low-Flow Statistics Parameters [6.0 Percent (1600 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	26000	square miles	2.33	1720

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
ELEV	Mean Basin Elevation	1329	feet	898	2700
PRECIP	Mean Annual Precipitation	40	inches	38.7	47.9

Low-Flow Statistics Parameters [47.0 Percent (12300 square miles) Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	26000	square miles	4.84	982
FOREST	Percent Forest	67.813	percent	41	100
GLACIATED	Percent of Glaciation	45.4321	percent	0	100
PRECIP	Mean Annual Precipitation	40	inches	33.1	47.1

Low-Flow Statistics Disclaimers [4.0 Percent (984 square miles) Low Flow Region 1]

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

Low-Flow Statistics Flow Report [4.0 Percent (984 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	9290	ft^3/s
30 Day 2 Year Low Flow	10300	ft^3/s
7 Day 10 Year Low Flow	7270	ft^3/s
30 Day 10 Year Low Flow	7650	ft^3/s
90 Day 10 Year Low Flow	8160	ft^3/s

Low-Flow Statistics Disclaimers [43.0 Percent (11100 square miles) Low Flow Region 2]

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

Low-Flow Statistics Flow Report [43.0 Percent (11100 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	5970	ft^3/s

Statistic	Value	Unit
30 Day 2 Year Low Flow	7050	ft^3/s
7 Day 10 Year Low Flow	4460	ft^3/s
30 Day 10 Year Low Flow	5250	ft^3/s
90 Day 10 Year Low Flow	6520	ft^3/s

Low-Flow Statistics Disclaimers [6.0 Percent (1600 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 [6.0 Percent (1600 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2410	ft^3/s
30 Day 2 Year Low Flow	2980	ft^3/s
7 Day 10 Year Low Flow	1450	ft^3/s
30 Day 10 Year Low Flow	1810	ft^3/s
90 Day 10 Year Low Flow	2480	ft^3/s

Low-Flow Statistics Disclaimers [47.0 Percent (12300 square miles) Low Flow Region 5]

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

Low-Flow Statistics Flow Report [47.0 Percent (12300 square miles) Low Flow Region 5]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3530	ft^3/s
30 Day 2 Year Low Flow	4460	ft^3/s
7 Day 10 Year Low Flow	2270	ft^3/s
30 Day 10 Year Low Flow	2980	ft^3/s
90 Day 10 Year Low Flow	3840	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	4740	ft^3/s
30 Day 2 Year Low Flow	5720	ft^3/s
7 Day 10 Year Low Flow	3360	ft^3/s
30 Day 10 Year Low Flow	4070	ft^3/s
90 Day 10 Year Low Flow	5080	ft^3/s

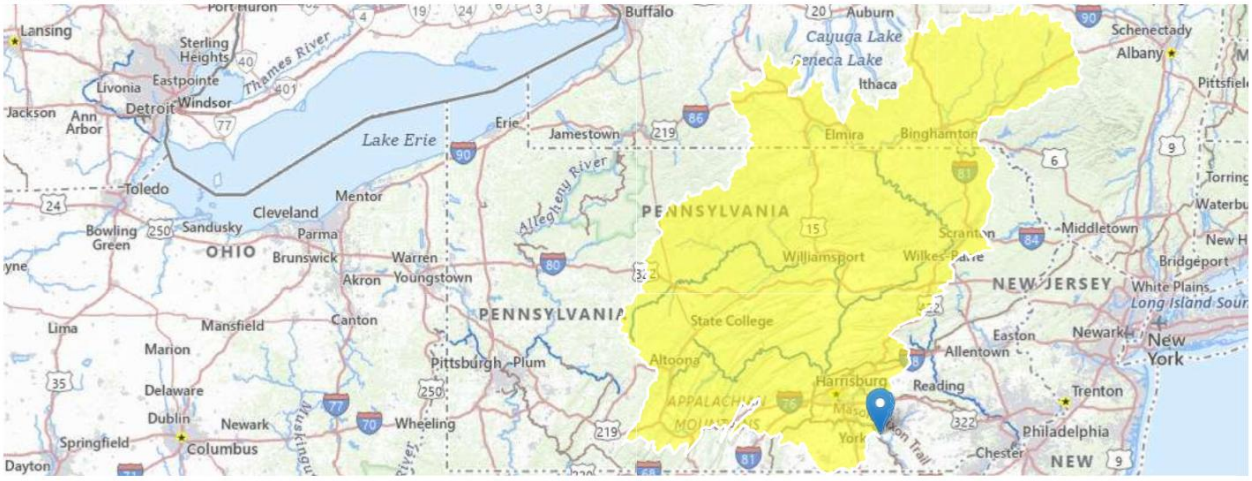
Low-Flow Statistics Citations

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/)

Application Version: 4.29.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Columbia Water Company PA0010201 Downstream Pt.

Region ID: PA
Workspace ID: PA20250715153225910000
Clicked Point (Latitude, Longitude): 39.97891, -76.48113
Time: 2025-07-15 11:33:03 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLOPD	Mean basin slope measured in degrees	8.1331	degrees
CARBON	Percentage of area of carbonate rock	6.72	percent
DRNAREA	Area that drains to a point on a stream	26100	square miles
ELEV	Mean Basin Elevation	1328	feet
FOREST	Percentage of area covered by forest	67.7246	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	45.339	percent
PRECIP	Mean Annual Precipitation	40	inches
ROCKDEP	Depth to rock	4.5	feet
STRDEN	Stream Density -- total length of streams divided by drainage area	1.75	miles per square mile
URBAN	Percentage of basin with urban development	2.8989	percent

Low-Flow Statistics

Low-Flow Statistics Parameters [4.0 Percent (1040 square miles) Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLOPD	Mean Basin Slope degrees	8.1331	degrees	1.7	6.4
DRNAREA	Drainage Area	26100	square miles	4.78	1150
ROCKDEP	Depth to Rock	4.5	feet	4.13	5.21
URBAN	Percent Urban	2.8989	percent	0	89

Low-Flow Statistics Parameters [43.0 Percent (11100 square miles) Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CARBON	Percent Carbonate	6.72	percent	0	99
DRNAREA	Drainage Area	26100	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	40	inches	35	50.4
ROCKDEP	Depth to Rock	4.5	feet	3.32	5.65
STRDEN	Stream Density	1.75	miles per square mile	0.51	3.1

Low-Flow Statistics Parameters [6.0 Percent (1600 square miles) Low Flow Region 3]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	26100	square miles	2.33	1720
ELEV	Mean Basin Elevation	1328	feet	898	2700
PRECIP	Mean Annual Precipitation	40	inches	38.7	47.9

Low-Flow Statistics Parameters [47.0 Percent (12300 square miles) Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	26100	square miles	4.84	982
FOREST	Percent Forest	67.7246	percent	41	100
GLACIATED	Percent of Glaciation	45.339	percent	0	100
PRECIP	Mean Annual Precipitation	40	inches	33.1	47.1

Low-Flow Statistics Disclaimers [4.0 Percent (1040 square miles) Low Flow Region 1]

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

Low-Flow Statistics Flow Report [4.0 Percent (1040 square miles) Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	9320	ft^3/s
30 Day 2 Year Low Flow	10400	ft^3/s
7 Day 10 Year Low Flow	7290	ft^3/s
30 Day 10 Year Low Flow	7670	ft^3/s
90 Day 10 Year Low Flow	8190	ft^3/s

Low-Flow Statistics Disclaimers [43.0 Percent (11100 square miles) Low Flow Region 2]

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

Low-Flow Statistics Flow Report [43.0 Percent (11100 square miles) Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	6030	ft^3/s
30 Day 2 Year Low Flow	7120	ft^3/s
7 Day 10 Year Low Flow	4510	ft^3/s
30 Day 10 Year Low Flow	5310	ft^3/s
90 Day 10 Year Low Flow	6590	ft^3/s

Low-Flow Statistics Disclaimers [6.0 Percent (1600 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 [6.0 Percent (1600 square miles) Low Flow Region 3]

Statistic	Value	Unit
7 Day 2 Year Low Flow	2420	ft^3/s
30 Day 2 Year Low Flow	2990	ft^3/s
7 Day 10 Year Low Flow	1460	ft^3/s
30 Day 10 Year Low Flow	1810	ft^3/s
90 Day 10 Year Low Flow	2490	ft^3/s

Low-Flow Statistics Disclaimers [47.0 Percent (12300 square miles) Low Flow Region 5]

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

Low-Flow Statistics Flow Report [47.0 Percent (12300 square miles) Low Flow Region 5]

Statistic	Value	Unit
7 Day 2 Year Low Flow	3540	ft^3/s
30 Day 2 Year Low Flow	4470	ft^3/s
7 Day 10 Year Low Flow	2270	ft^3/s
30 Day 10 Year Low Flow	2980	ft^3/s
90 Day 10 Year Low Flow	3840	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	4770	ft^3/s
30 Day 2 Year Low Flow	5760	ft^3/s
7 Day 10 Year Low Flow	3390	ft^3/s
30 Day 10 Year Low Flow	4100	ft^3/s
90 Day 10 Year Low Flow	5120	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/)

Application Version: 4.29.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

TRC_CALC

1A	B	C	D	E	F	G
2	**TRC EVALUATION**					
3	Input appropriate values in B4:B8 and E4:E7					
4	840	= Q stream (cfs)		0.5	= CV Daily	
5	0.55	= Q discharge (MGD)		0.5	= CV Hourly	
6	30	= no. samples		1	= AFC_Partial Mix Factor	
7	0.3	= Chlorine Demand of Stream		1	= CFC_Partial Mix Factor	
8	0	= Chlorine Demand of Discharge		15	= AFC_Criteria Compliance Time (min)	
9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min)	
	0	= % Factor of Safety (FOS)			=Decay Coefficient (K)	
10	Source	Reference	AFC Calculations		Reference	CFC Calculations
11	TRC	1.3.2.iii	WLA afc = 314.951		1.3.2.iii	WLA cfc = 307.045
12	PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
13	PENTOXSD TRG	5.1b	LTA_afc= 117.358		5.1d	LTA_cfc = 178.502
14						
15	Source		Effluent Limit Calculations			
16	PENTOXSD TRG	5.1f	AML MULT = 1.231			
17	PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
18			INST MAX LIMIT (mg/l) = 1.635			

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)**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Columbia Water Company** NPDES Permit No.: **PA0010201** Outfall No.: **001**

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.55	120	7						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		257									
	Chloride (PWS)	mg/L		38.7									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		45									
	Fluoride (PWS)	mg/L	<	0.2									
Group 2	Total Aluminum	µg/L		34.4									
	Total Antimony	µg/L	<	0.3									
	Total Arsenic	µg/L	<	0.4									
	Total Barium	µg/L		0.058									
	Total Beryllium	µg/L	<	0.1									
	Total Boron	µg/L	<	10									
	Total Cadmium	µg/L	<	0.1									
	Total Chromium (III)	µg/L	<	0.2									
	Hexavalent Chromium	µg/L		0.5									
	Total Cobalt	µg/L		0.0002									
	Total Copper	µg/L		0.003									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L	<	0.1									
	Total Iron	µg/L		0.82									
	Total Lead	µg/L	<	0.01									
	Total Manganese	µg/L		5.25									
	Total Mercury	µg/L	<	0.09									
	Total Nickel	µg/L		0.002									
	Total Phenols (Phenolics) (PWS)	µg/L	<	5									
	Total Selenium	µg/L	<	0.5									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	mg/L		0.012									
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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

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

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Columbia Water Company, NPDES Permit No. PA0010201, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Susquehanna River**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	006685	27.87	228.5	26000			Yes
End of Reach 1	006685	24.3	226.7	26100			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	27.87	0.1	3360									100	7		
End of Reach 1	24.3	0.1	3390									100	7		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	27.87														
End of Reach 1	24.3														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Columbia Water Company, NPDES Permit No. PA0010201, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.003 Analysis Hardness (mg/l): 101.54 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	750	750	9,766	
Total Antimony	0	0		0	1,100	1,100	14,323	
Total Arsenic	0	0		0	340	340	4,427	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	273,443	
Total Boron	0	0		0	8,100	8,100	105,471	
Total Cadmium	0	0		0	2.044	2.17	28.2	Chem Translator of 0.943 applied
Total Chromium (III)	0	0		0	576.921	1,826	23,773	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	212	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	1,237	
Total Copper	0	0		0	13.634	14.2	185	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	65.662	83.2	1,084	Chem Translator of 0.789 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	21.4	Chem Translator of 0.85 applied
Total Nickel	0	0		0	474.313	475	6,188	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	3.302	3.88	50.6	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	846	
Total Zinc	0	0		0	118.704	121	1,580	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 720 PMF: 0.021 Analysis Hardness (mg/l): 100.24 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	18,543	
Total Arsenic	0	0		0	150	150	12,643	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	345,567	
Total Boron	0	0		0	1,600	1,600	134,855	
Total Cadmium	0	0		0	0.246	0.27	22.8	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.259	86.3	7,278	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	876	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	1,601	
Total Copper	0	0		0	8.974	9.35	788	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	5,924,988	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.523	3.19	269	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	76.4	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.111	52.3	4,405	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	421	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	1,096	
Total Zinc	0	0		0	118.376	120	10,119	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 720 PMF: 0.021 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	472	
Total Arsenic	0	0		0	10	10.0	843	
Total Barium	0	0		0	2,400	2,400	202,283	
Total Boron	0	0		0	3,100	3,100	261,282	
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	25,285	
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	84,285	
Total Mercury	0	0		0	0.050	0.05	4.21	
Total Nickel	0	0		0	610	610	51,414	
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	20.2	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 720 PMF: 0.029 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	6,259	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	175,266	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	67,603	µg/L	Discharge Conc < TQL
Total Cadmium	18.1	µg/L	Discharge Conc < TQL
Total Chromium (III)	7,278	µg/L	Discharge Conc < TQL
Hexavalent Chromium	136	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	793	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	119	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	25,285	µg/L	Discharge Conc < TQL
Total Iron	5,924,988	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	269	µg/L	Discharge Conc < TQL
Total Manganese	84,285	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	4.21	µg/L	Discharge Conc < TQL
Total Nickel	3,967	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	Discharge Conc < TQL
Total Selenium	421	µg/L	Discharge Conc < TQL
Total Silver	32.4	µg/L	Discharge Conc < TQL
Total Thallium	20.2	µg/L	Discharge Conc < TQL
Total Zinc	1.01	mg/L	Discharge Conc ≤ 10% WQBEL