pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0263877**
Facility Type	**Industrial**	APS ID	**1055452**
Major / Minor	**Minor**	Authorization ID	**1382857**

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

Applicant and Facility Information

Applicant Name	**Jay Township Water Authority**	Facility Name	**Jay Township Water Authority WTP**
Applicant Address	49 Kennedy Street	Facility Address	53 Taylor Street
	Byrnedale, PA 15827		Byrnedale, PA 15827
Applicant Contact	Donavan Allen	Facility Contact	Donavan Allen
Applicant Phone	(814) 787-8853	Facility Phone	(814) 592-8997
Client ID	36778	Site ID	448379
SIC Code	4941	Municipality	Jay Township
SIC Description	Trans. & Utilities - Water Supply	County	Elk
Date Application Received	January 24, 2022	EPA Waived?	Yes
Date Application Accepted	November 24, 2022	If No, Reason	

Purpose of Application: Renewal of an NPDES application.

Summary of Review

The Jay Township Water Authority WTP is a potable public water treatment plant (WTP). Backwash, raw rinse water, and waste water from analyzer are discharged to two settling basins where solids settle out before clear water goes over a baffle wall. Sodium thiosulfate is added as needed for chlorine residual reduction.

A TMDL for the Bennett Branch Sinnemahoning Creek was approved on February 27, 2009. For this TMDL, Jay Township Water Authority WTP was assigned wasteload allocations for Total Aluminum, Total Iron and Total Manganese. The wasteload allocations included in the TMDL were equal to the recommended best practicable control technology currently available (BPT) effluent limits included in *Technology-Based Control Requirements For Water Treatment Plant Wastes* (362-2183-003). Jay Township Water Authority ceased discharging from the facility on May 5, 2008 and the NPDES permit (PA0222500) was terminated; after May 5, 2008 all effluent wastewater from the facility was routed to the sanitary sewer system. After issues encountered by discharging to the sanitary sewer, a new NDPES permit (PA0263877) was issued effective 1/1/2012. This permit incorporated effluent limits for Total Aluminum, Total Iron and Total Manganese that were based on the BPT effluent limits. The NPDES permit was reissued effective 8/1/2017 and incorporated the effluent limits for Total Aluminum, Total Iron and Total Manganese that were based on the BPT effluent limits.

Changes to the permit: A Total Cadmium limit has been added. The limit may potentially be removed during the draft permit period if additional Cadmium sampling is provided.

There are no open violations for this Applicant.

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*,

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	April 4, 2024
		Adam Olesnanik / Environmental Engineer Manager	Okay to Draft JCD 4/4/2025

Summary of Review
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)	.0167
Latitude	41º 17' 33.4572"	Longitude	-78º 30' 27.2628"
Quad Name		Quad Code	
Wastewater Description:	Water Treatment Filter Backwash		
Receiving Waters	Kersey Run	Stream Code	24868
NHD Com ID	61431564	RMI	1.79 mi
Drainage Area	25.2 mi^2	Yield (cfs/mi^2)	0.02
Q_{7-10} Flow (cfs)	0.543	Q_{7-10} Basis	StreamStats
Elevation (ft)	1225	Slope (ft/ft)	
Watershed No.	8-A	Chapter 93 Class.	CWF; MF
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			
Source(s) of Impairment			
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Keystone Water Company		
PWS Waters	W. Br. Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	127

Changes Since Last Permit Issuance: None

Compliance History

DMR Data for Outfall 001 (from November 1, 2021 to October 31, 2022)

Parameter	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22	DEC-21	NOV-21
Flow (MGD) Average Monthly	0.048391	0.069307	0.04041	0.041149	0.036546	0.076939	0.03938	0.036456	8141	0.04131	0.042149	59538
pH (S.U.) Minimum	6.68	7.54	8.11	7.56	6.36	6.49	6.39	6.63	6.63	6.83	7.01	6.98
pH (S.U.) Maximum	7.41	7.77	8.38	7.65	8.1	6.89	7.21	7.15	7.06	7.03	7.77	7.45
TRC (mg/L) Average Monthly	0.04	0.02	0.02	0.02	0.02	0.02	0.006	0.04	0.03	0.02	0.01	< 0.5
TRC (mg/L) Instantaneous Maximum	0.3	0.03	0.02	0.02	0.04	0.03	0.04	0.06	0.04	0.03	0.04	< 1.00
TSS (mg/L) Average Monthly	3.0	3.0	4.0	3.0	0.6	< 4.0	4.0	5.0	6.0	< 3.0	< 3.0	< 3.0
TSS (mg/L) Daily Maximum	4.0	3.0	4.0	3.0	3.0	4.0	4.0	6.0	7.0	< 3.0	3.0	< 3.00
Total Aluminum (mg/L) Average Monthly	0.2	0.02	0.09	0.2	0.1	0.3535	0.2525	0.630	1.034	0.178	0.300	0.1
Total Aluminum (mg/L) Daily Maximum	0.3	0.03	0.1	0.06	0.256	0.589	0.405	0.874	1.45	0.212	0.400	0.157
Total Iron (mg/L) Average Monthly	0.1	0.01	0.02	0.03	0.3	0.0774	< 0.200	0.2145	0.376	0.03555	0.10	0.05
Total Iron (mg/L) Daily Maximum	0.07	0.2	0.03	0.04	0.525	0.133	0.402	0.229	0.390	0.0511	0.167	0.0786
Total Manganese (mg/L) Average Monthly	0.02	0.1	0.08	0.2	0.2	0.074	0.09	0.3165	0.3505	0.1165	0.10	0.03
Total Manganese (mg/L) Daily Maximum	0.01	0.2	0.1	0.09	0.2	0.092	0.106	0.368	0.481	0.125	0.121	0.046

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .0167
Latitude 41º 17' 33.4572" **Longitude** -78º 30' 27.2628"
Wastewater Description: Water Treatment Effluent

Technology-Based Limitations

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

Parameter	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Total Suspended Solids	30	Average Monthly		362-2183-001
Total Suspended Solids	40	Daily Maximum		362-2183-001
Aluminum	4.0	Average Monthly		362-2183-001
Aluminum	8.0	Daily Maximum		362-2183-001
Manganese	1.0	Average Monthly		362-2183-001
Manganese	2.0	Daily Maximum		362-2183-001
Total Iron	2.0	Average Monthly		362-2183-001
Total Iron	4.0	Daily Maximum		362-2183-001
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Total Residual Chlorine	1.0	Daily Maximum		362-2183-001
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)

Comments: The DEP Guidance “Technology-based Control Requirements for Water Treatment Plant Wastes” (362-2183-001) provides these limits that are based on Best Practical Control Technology (BPT).The Jay Township Water Authority WTP is not subject to Federal Effluent Limitation Guidelines (ELGs) as the SIC code is not listed under 40 CFR parts 405 through 471.

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. Per the previous permit writer, although indicated as units of µg/L, the samples reported on the application for Pollutant Group 2 are believed to be in units of mg/l. Based on the values reported, it was believed the values are more consistent with units of mg/l rather than µg/L. The Applicant was not able to provide the laboratory analysis sheets to verify the units of the sampling due to Applicant staffing turnover and a change in laboratories used. The values were input into the TMS using units of mg/l, and the TMS recommended limits for Total Cadmium.

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. Spreadsheet 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.

A Total Cadmium limit will be placed in the draft permit with an average monthly limit of 0.006 mg/l, daily maximum limit of 0.009 mg/l, and an instantaneous maximum limit of 0.014 mg/l. Due to the discrepancy with the reporting units on the permit application, the Applicant will be allowed to sample for Total Cadmium prior to permit issuance to determine the Total Cadmium concentration in the effluent discharge. Any resampling completed by the Applicant can result in modification or removal of the proposed Total Cadmium limitations.

Total Dissolved Solids

DEP's SOP No. BPNPSM-PMT-032 recommends monitoring for TDS when the discharge concentrations exceed 1,000 mg/l. Outfall 001 sampling results did not exceed 1,000 mg/l for TDS, so TDS monitoring is not included in the permit.

Additional Considerations

Monitoring for PFAS parameters – PFOA, PFOS, PFBS, and HFPO-DA –will not be required at this time because the facility does not currently have treatment to remove PFAS. The current permit has an instantaneous maximum effluent limitation for Total Residual Chlorine, this limit will be included in the draft permit in addition to the BPT average monthly and maximum daily effluent limitations for Total Residual Chlorine.

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.

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	1/day	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.5	1.0	1.6	1/day	Grab
Total Suspended Solids	XXX	XXX	XXX	30	60	75	2/month	Grab
Aluminum, Total	XXX	XXX	XXX	4.0	8.0	10.0	2/month	Grab
Iron, Total	XXX	XXX	XXX	2.0	4.0	5.0	2/month	Grab
Manganese, Total	XXX	XXX	XXX	1.0	2.0	2.5	2/month	Grab
Cadmium, Total	XXX	XXX	XXX	0.006	0.009	0.014	2/month	Grab

Compliance Sampling Location: Outfall 001 - prior to mixing with any other waters

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.543	= Q stream (cfs)	0.5	= CV Daily
0.0167	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 6.724	1.3.2.iii	WLA cfc = 6.548
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 2.505	5.1d	LTA_cfc = 3.806

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		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)**

Jay Township Municipal Authority PA0263877 Outfall 001

Region ID: PA
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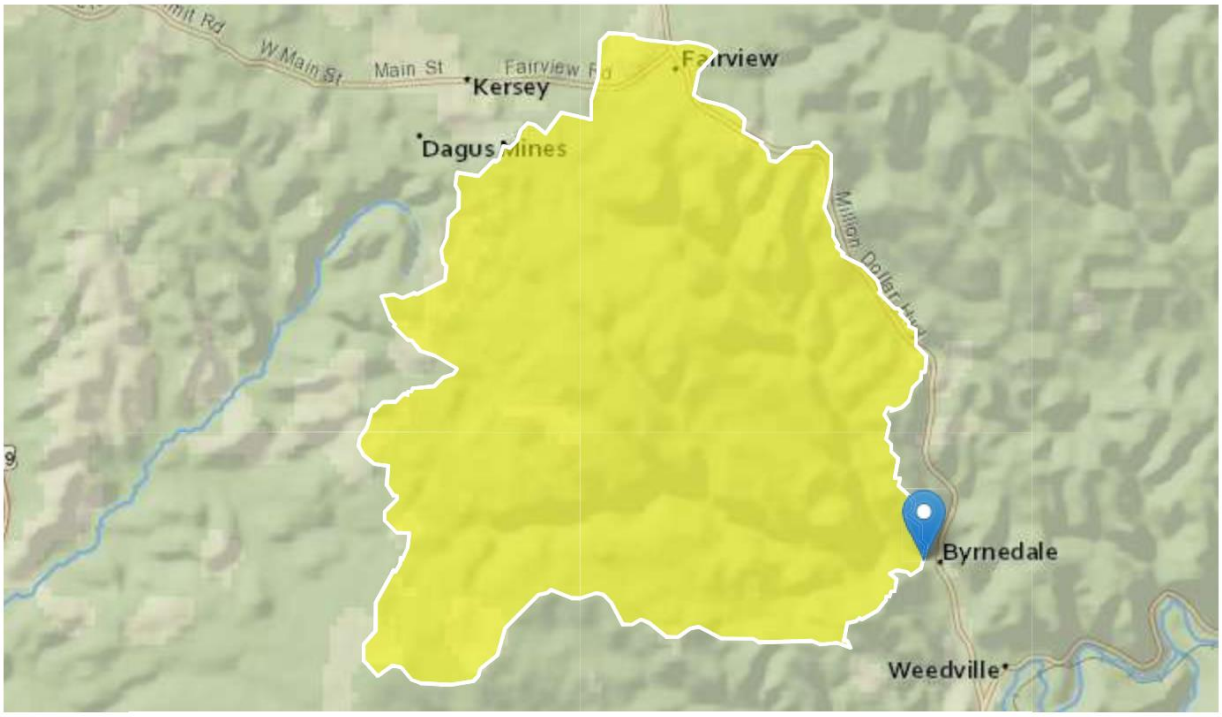

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	25.2	square miles
FOREST	Percentage of area covered by forest	92.8993	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	0	percent
PRECIP	Mean Annual Precipitation	45	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25.2	square miles	4.84	982
FOREST	Percent Forest	92.8993	percent	41	100
GLACIATED	Percent of Glaciation	0	percent	0	100
PRECIP	Mean Annual Precipitation	45	inches	33.1	47.1

Low-Flow Statistics Flow Report [Low Flow Region 5]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	1.84	ft^3/s	38	38
30 Day 2 Year Low Flow	2.94	ft^3/s	33	33
7 Day 10 Year Low Flow	0.543	ft^3/s	57	57
30 Day 10 Year Low Flow	1.07	ft^3/s	51	51
90 Day 10 Year Low Flow	1.89	ft^3/s	41	41

Low-Flow Statistics Citations

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

Jay Township Municipal Authority PA0263877 RMI = 0.5

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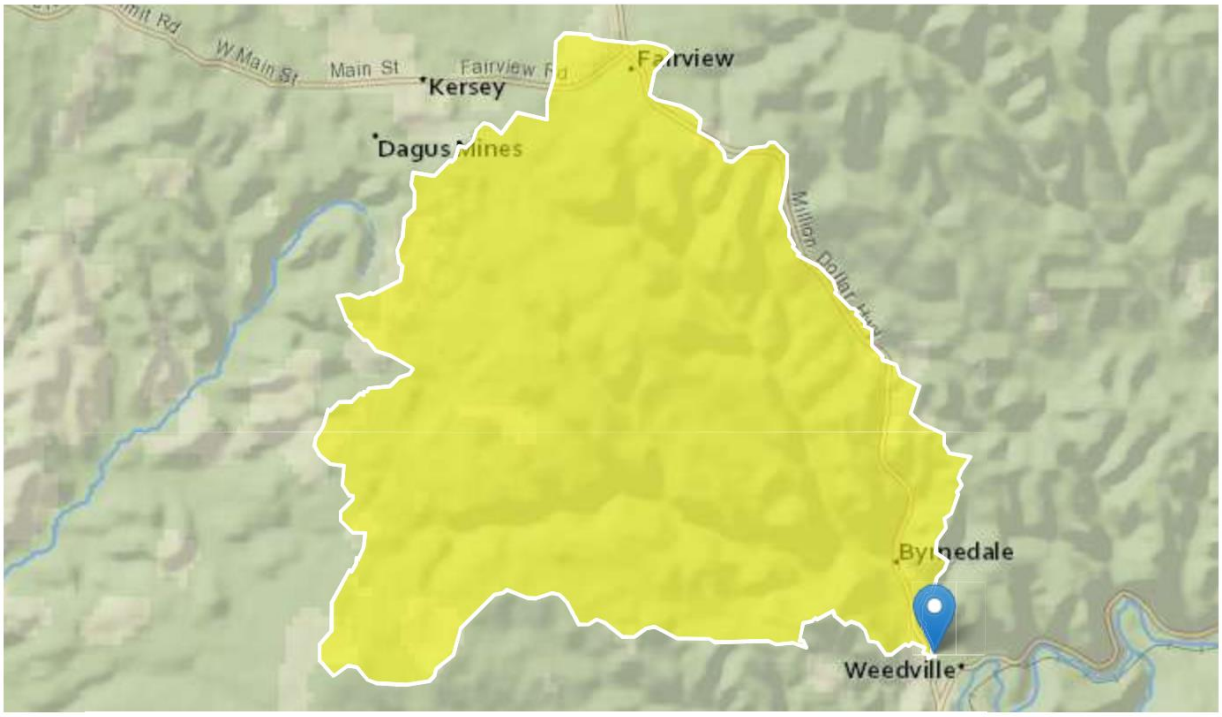
Time: 2025-04-02 21:30:28 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	27.4	square miles
FOREST	Percentage of area covered by forest	92.2521	percent
GLACIATED	Percentage of basin area that was historically covered by glaciers	0	percent
PRECIP	Mean Annual Precipitation	45	inches

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 5]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	25.2	square miles	4.84	982
FOREST	Percent Forest	92.8993	percent	41	100
GLACIATED	Percent of Glaciation	0	percent	0	100
PRECIP	Mean Annual Precipitation	45	inches	33.1	47.1

Low-Flow Statistics Flow Report [Low Flow Region 5]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

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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/)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Jay Township Water Authority** NPDES Permit No.: **PA0263877** Outfall No.: **001**

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

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
0.0167	11.2	7.03						

					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		6.4									
	Chloride (PWS)	mg/L		6.62									
	Bromide	mg/L	<	0.1									
	Sulfate (PWS)	mg/L		11.1									
	Fluoride (PWS)	mg/L	<	0.06									
Group 2	Total Aluminum	mg/L		0.282									
	Total Antimony	mg/L		0.00014									
	Total Arsenic	mg/L		0.00082									
	Total Barium	mg/L		0.0325									
	Total Beryllium	mg/L	<	0.0001									
	Total Boron	mg/L	<	0.0005									
	Total Cadmium	mg/L	<	0.05									
	Total Chromium (III)	mg/L	<	0.0005									
	Hexavalent Chromium	mg/L	<	0.0008									
	Total Cobalt	mg/L	<	0.0005									
	Total Copper	mg/L	<	0.0008									
	Free Cyanide	mg/L											
	Total Cyanide	mg/L	<	0.005									
	Dissolved Iron	mg/L		0.0495									
	Total Iron	mg/L		0.02									
	Total Lead	mg/L		0.00192									
	Total Manganese	mg/L		0.049									
	Total Mercury	mg/L	<	0.0002									
	Total Nickel	mg/L		0.00055									
	Total Phenols (Phenolics) (PWS)	mg/L	<	0.005									
	Total Selenium	mg/L	<	0.0008									
	Total Silver	mg/L	<	0.0001									
	Total Thallium	mg/L	<	0.0001									
	Total Zinc	mg/L		0.00282									
	Total Molybdenum	mg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

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

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

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Jay Township Water Authority, NPDES Permit No. PA0263877, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: _____ 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	024868	1.79	1225	25.2			Yes
End of Reach 1	024868	0.5	1167	27.4			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	1.79	0.1	0.543									100	7		
End of Reach 1	0.5	0.1	0.596									100	7		

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	1.79														
End of Reach 1	0.5														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Jay Township Water Authority, NPDES Permit No. PA0263877, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 8.095 PMF: 1 Analysis Hardness (mg/l): 95.967 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	16,514	
Total Antimony	0	0		0	1,100	1,100	24,220	
Total Arsenic	0	0		0	340	340	7,486	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	462,380	
Total Boron	0	0		0	8,100	8,100	178,346	
Total Cadmium	0	0		0	1.935	2.05	45.0	Chem Translator of 0.946 applied
Total Chromium (III)	0	0		0	550.874	1,743	38,384	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	359	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	2,092	
Total Copper	0	0		0	12.928	13.5	297	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	61.749	77.5	1,706	Chem Translator of 0.797 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	36.3	Chem Translator of 0.85 applied
Total Nickel	0	0		0	452.209	453	9,977	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	2.997	3.53	77.6	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	1,431	
Total Zinc	0	0		0	113.164	116	2,548	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 8.095 PMF: 1 Analysis Hardness (mg/l): 95.967 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	4,844	
Total Arsenic	0	0		0	150	150	3,303	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	90,274	
Total Boron	0	0		0	1,600	1,600	35,229	
Total Cadmium	0	0		0	0.239	0.26	5.78	Chem Translator of 0.911 applied
Total Chromium (III)	0	0		0	71.657	83.3	1,835	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	229	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	418	
Total Copper	0	0		0	8.646	9.01	198	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	33,027	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.406	3.02	66.5	Chem Translator of 0.797 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	19.9	Chem Translator of 0.85 applied
Total Nickel	0	0		0	50.226	50.4	1,109	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	110	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	286	
Total Zinc	0	0		0	114.089	116	2,548	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 8.095 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	123	
Total Arsenic	0	0		0	10	10.0	220	
Total Barium	0	0		0	2,400	2,400	52,843	
Total Boron	0	0		0	3,100	3,100	68,256	
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	6,605	
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	22,018	
Total Mercury	0	0		0	0.050	0.05	1.1	
Total Nickel	0	0		0	610	610	13,431	
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	5.28	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 2.281 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

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

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Cadmium	0.0008	0.001	0.006	0.009	0.014	mg/L	0.006	CFC	Discharge Conc ≥ 50% WQBEL (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	Discharge Conc < TQL
Total Aluminum	10.6	mg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	0.12	mg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	0.22	mg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	52.8	mg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	35.2	mg/L	Discharge Conc < TQL
Total Chromium (III)	1.83	mg/L	Discharge Conc < TQL
Hexavalent Chromium	0.23	mg/L	Discharge Conc < TQL
Total Cobalt	0.42	mg/L	Discharge Conc < TQL
Total Copper	0.19	mg/L	Discharge Conc < TQL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	6.61	mg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	33.0	mg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	0.066	mg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	22.0	mg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.001	mg/L	Discharge Conc < TQL
Total Nickel	1.11	mg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		mg/L	Discharge Conc < TQL
Total Selenium	0.11	mg/L	Discharge Conc < TQL
Total Silver	0.05	mg/L	Discharge Conc < TQL
Total Thallium	0.005	mg/L	Discharge Conc < TQL
Total Zinc	1.63	mg/L	Discharge Conc ≤ 10% WQBEL