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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHWEST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0218413**
Facility Type	**Sewage**	APS ID	**758875**
Major / Minor	**Major**	Authorization ID	**1221240**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**Economy Borough Municipal Authority**	Facility Name	**Big Sewickley Creek WWTP**
Applicant Address	2860 Conway Wallrose Road	Facility Address	120 Wine Road
	Baden, PA 15005-2306		Sewickley, PA 15143
Applicant Contact	Ms. Janet Miklos	Facility Contact	Mr. Joseph DeLuca
Applicant Phone	(724) 869-3201	Facility Phone	(724) 869-3201
Client ID	64903	Site ID	532567
SIC Code	4952	Municipality	Economy Borough
SIC Description	Trans. & Utilities - Sewerage Systems	County	Beaver
Date Published in PA Bulletin	July 11, 2020	EPA Waived?	No
Comment Period End Date	August 10, 2020	If No, Reason	

Purpose of Application: Application for a renewal of an NPDES permit for discharge of treated Sewage

Internal Review and Recommendations

The Authority's Engineer, KLH, commented on the Draft NPDES Permit on July 30, 2020 & September 8, 2020. The comment letter request that free available cyanide, dissolved iron, total mercury, total selenium, and total zinc be removed from Part A & C of the Draft NPDES Permit. As a follow up to that letter, the Authority's Operations Manager submitted additional laboratory results on August 26, 2020 & August 12, 2021.

As a result, the following changes have been made to the "Development of Effluent Limitation" section of the Fact Sheet.

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

Parameter	Limit (ug/l)	SBC	Model
Copper, Total	12.7	Average Monthly	Toxics Management Spreadsheet Version 1.3
Cyanide, Free	4.32	Average Monthly	Toxics Management Spreadsheet Version 1.3
Zinc, Total	151.0	Average Monthly	Toxics Management Spreadsheet Version 1.3

Please note that the criteria for free cyanide has changed since the permit was Drafted. The Authority will have 24 months to comply with the new final free cyanide limit of 4.32 ug/L and in the interim the Department will impose the existing free cyanide limit of 6.0 ug/L.

Based upon the Toxics Management Spreadsheet, Version 1.3, Monitoring for total lead is recommended, because the discharge concentration greater than 10% of the WQBEL.

Dissolved iron, total selenium, and total mercury limits were removed from the Draft Permit. Part A.I.A, Part A.I.B, and Part C.III has been revised accordingly.

Approve	Return	Deny	Signatures	Date
X			William C. Mitchell, E.I.T. / Project Manager	August 26, 2021
X			Christopher Kriley, P.E. / Program Manager	August 30, 2021

Internal Review and Recommendations

On July 29, 2020, EPA Region III made the following Comments:

- The compliance schedule includes a TRE that is to be completed within 18 months after permit issuance. A 36 month compliance schedule does not appear to be justified based on the TRE schedule. If the facility needs additional time to develop and implement the TRE the permit should include additional time for that requirement, which could justify the 36 month schedule provided in the permit. If additional time is not warranted, the schedule should be shortened to the time needed to comply with the final limits per 40 CFR 122.47(a)(1).

The Department offers the following response:

- Revised Part C Language, Part C.III Water Quality-Based Effluent Limitations for Toxic Pollutants, has been added to the permit. The Authority will have 24 months to comply with the WQBELs for free cyanide & total zinc. A revised compliance schedule has been added to Part C.III.D.1 of the permit.

The Authority's Laboratory, CWM Environmental, commented on the Draft NPDES Permit on September 8, 2020. Mr. Jones requested that the sampling frequency for copper, lead, mercury, and zinc be reduced from monthly to quarterly.

The Department offers the following response:

- No Justification exists to reduce the sampling frequency from the frequency recommended by Department Guidance and reflected in the Draft NPDES Permit. The sampling frequency for metals found in the Draft NPDES Permit will remain as 1/week reported monthly for copper, lead, and zinc.

No changes to the Draft Permit resulted from these comments.

Sewage discharges will include monitoring, at a minimum, for E. Coli, in new and reissued permits, with a monitoring frequency of 1/month for facilities with a design flows >= 1 MGD per Chapter 92.a.61. Part A.I.C of the Draft Permit has been updated to reflect this added parameter.

Reviewer/Permit Engineer: W. Mitchell

Facility: Big Sewickley Creek WWTP
NPDES #: PA0218413
Outfall No: 001
n (Samples/Month): 4

Parameter	Distribution Applied	Coefficient of Variation (daily)	Avg. Monthly
Free Cyanide (mg/L)	Delta-Lognormal	0.6105430	0.0123088

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Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Big Sewickley Creek WWTP** NPDES Permit No.: **PA0218413** Outfall No.: **001**

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

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
1.25	132	7	1	1				

	Discharge Pollutant	Units	Max Discharge Conc		0 if left blank: Trib Conc	0 if left blank: Stream Conc	0.5 if left blank: Daily CV	0.5 if left blank: Hourly CV	0 if left blank: Stream CV	0 if left blank: Fate Coeff	0 if left blank: FOS	1 if left blank: Criteria Mod	1 if left blank: Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L											
	Chloride (PWS)	mg/L											
	Bromide	mg/L											
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L											
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L		16									
	Free Cyanide	µg/L		12.3			0.6105						
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L		2									
	Total Manganese	µg/L											
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L											
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L		76									
	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											

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Big Sewickley Creek WWTP, NPDES Permit No. PA0218413, 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	036596	3.43	787	26.41			Yes
End of Reach 1	036596	2.91	772	26.57			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	3.43	0.0058			18	27	1.5					116.8	7		
End of Reach 1	2.91	0.0058													

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	3.43														
End of Reach 1	2.91														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Big Sewickley Creek WWTP, NPDES Permit No. PA0218413, Outfall 001

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

☑ ***Hydrodynamics***

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

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
3.43	0.15		0.15	1.934	0.005	1.5	27.	18.	0.052	0.617	0.04
2.91	0.15		0.154								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
3.43	1.44		1.44	1.934	0.005	1.853	27.	14.568	0.067	0.471	0.977
2.91	1.449		1.45								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.040 PMF: 1 Analysis Hardness (mg/l): 130.88 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 Copper	0	0		0	17.318	18.0	19.5	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	23.7	
Total Lead	0	0		0	86.461	115	124	Chem Translator of 0.752 applied
Total Mercury	0	0		0	1.400	1.65	1.78	Chem Translator of 0.85 applied
Total Zinc	0	0		0	147.195	151	162	Chem Translator of 0.978 applied

☑ ***CFC*** CCT (min): 0.040 PMF: 1 Analysis Hardness (mg/l): 130.88 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 Copper	0	0		0	11.272	11.7	12.7	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	5.61	
Total Lead	0	0		0	3.369	4.48	4.84	Chem Translator of 0.752 applied

Total Mercury	0	0		0	0.770	0.91	0.98	Chem Translator of 0.85 applied
Total Zinc	0	0		0	148.399	151	162	Chem Translator of 0.986 applied

☑ ***THH*** CCT (min): 0.040 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 Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	4.32	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.050	0.05	0.054	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 0.977 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 Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Mercury	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 Copper	0.13	0.21	12.7	19.8	31.7	µg/L	12.7	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Free Cyanide	0.045	0.074	4.32	7.12	10.8	µg/L	4.32	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	4.84	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	1.57	1.69	151	162	162	µg/L	151	AFC	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 Mercury	N/A	N/A	Discharge Conc < TQL