pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0050504**
Facility Type	**Municipal**	APS ID	**1050908**
Major / Minor	**Minor**	Authorization ID	**1374893**

Applicant and Facility Information

Applicant Name	**East Goshen Municipal Authority**	Facility Name	**Ridley Creek STP**
Applicant Address	1580 Paoli Pike	Facility Address	1751 Towne Drive
	West Chester, PA 19380-6107		West Chester, PA 19380
Applicant Contact	Derek Davis	Facility Contact	Mark Miller
Applicant Phone	(610) 692-7171	Facility Phone	(610) 692-7171
Client ID	62683	Site ID	256818
Ch 94 Load Status	Not Overloaded	Municipality	East Goshen Township
Connection Status	No Limitations	County	Chester
Date Application Received	November 1, 2021	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Permit Renewal

Summary of Review

Applicant requests renewal of an NPDES application for the continued discharge of treated sewage effluent from Ridley Creek STP to Ridley Creek and an irrigation pond at Applebrook Golf Course.

The treatment plant consists of an influent grinder and screen, 2,100 gpm (3.0 MGD) influent pumping station, four tank SBR system, post equalization tanks, effluent filtration, and UV disinfection, prior to discharge to the Ridley Creek. Also, there is aerobic sludge digestion and a dewatering centrifuge with polymer addition. Screenings and dewatered sludge are hauled off site for disposal at a properly permitted solid waste landfill. There are both influent and effluent flow meters at the treatment plant.

Wastewater treatment chemicals listed in the application are the following: Sodium Carbonate “Soda Ash”, Aluminum Sulfate, Polymer, Ammonia, Bleach, 12.5% and “Strike”.

The permittee is looking to replace the existing UV disinfection system with a new system and control panel. Also, in the process of replacing soda ash with caustic for pH and alkalinity control.

The facility serves the following municipalities: East Goshen Township, Willistown Township, and East Whiteland Township.

Outfall 001 is the regular discharge point. The outfall headwall discharges effluent to a wetland area, which eventually flows into Ridley Creek. Up to 0.135 MGD of treated effluent is pumped through the UV system to the golf course irrigation pond for summertime irrigation activities. Outfall 002 point of discharge is located at the irrigation pond. The spray irrigation for the Applebrook Golf Course is permitted under the WQM Permit # 1500410.

Based on the review of the eDMRs, the discharge is in compliance with the effluent limitations in the permit.

Approve	Deny	Signatures	Date
X		*Sara Abraham* Sara Reji Abraham, E.I.T. / Project Manager	January 19, 2022
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	01/20/2022

Summary of Review

Sludge use and disposal description and location(s): hauled off-site to dispose at a properly permitted solid waste landfill.

Application listed various commercial wastewater contributors that are connected to the sewer system.

Influent monitoring requirements for CBOD5, TSS and BOD5 are included in the draft permit to check compliance with the 85% removal requirement and Chapter 94 requirement. This requirement is consistent with other similar dischargers in the area.

Public Participation

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

Act 14 Notifications:

East Goshen Township - October 27, 2021
Chester County Planning Commission - October 27, 2021

Permit Conditions:

A. No Stormwater
B. Acquire Necessary Property Rights
C. Proper Sludge Disposal
D. Chlorine Optimization
E. Operator Notification
F. Total Flow Limit
G. Fecal Coliform Reporting
H. Solids Management

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	.135
Latitude	40º 0' 19.11"	Longitude	-75º 32' 3.70"
Quad Name	West Chester	Quad Code	1941
Wastewater Description:	Treated Sewage Effluent		
Receiving Waters	Ridley Creek (HQ-TSF, MF)	Stream Code	00621
NHD Com ID	25602045	RMI	18.72
Drainage Area	8.2 miles^2		
Q_{7-10} Flow (cfs)	0.96	Q_{7-10} Basis	Previous fact sheet
Watershed No.	3-G	Chapter 93 Class.	HQ-TSF, MF
Assessment Status	Impaired		
Cause(s) of Impairment	cause unknown, flow regime modification, siltation		
Source(s) of Impairment	urban runoff/storm sewers		
Nearest Downstream Public Water Supply Intake	Borough of media water intake		

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.75
Latitude	39º 59' 3.91"	Longitude	-75º 31' 24.78"
Quad Name	West Chester	Quad Code	1941
Wastewater Description:	Treated Sewage Effluent		
Receiving Waters	Ridley Creek (HQ-TSF, MF)	Stream Code	00621
NHD Com ID	25621510	RMI	18.72
Drainage Area	8.2 miles^2		
Q_{7-10} Flow (cfs)	0.96	Q_{7-10} Basis	Previous fact sheet, USGS gage # 01476480
Elevation (ft)	358.68		
Watershed No.	3-G	Chapter 93 Class.	HQ-TSF, MF
Assessment Status	Impaired		
Cause(s) of Impairment	cause unknown, flow regime modification, siltation		
Source(s) of Impairment	urban runoff/storm sewers		
Nearest Downstream Public Water Supply Intake	Borough of Media Water Intake		

Treatment Facility Summary

Treatment Facility Name: Ridley Creek STP

WQM Permit No.	Issuance Date
1502404	08/5/2008

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Sequencing Batch Reactor W/Sol Removal	Ultraviolet	0.75

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.75	2,098	Not Overloaded	Aerobic Digestion	Landfill

Compliance History

DMR Data for Outfall 001 (from December 1, 2020 to November 30, 2021)

Parameter	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20
Flow (MGD) Average Monthly	0.288	0.267	0.3	0.247	0.244	0.275	0.287	0.355	0.424	0.4	0.378	0.323
Flow (MGD) Daily Maximum	0.336	0.329	0.958	0.429	0.313	0.363	0.390	0.423	0.66	0.66	0.438	0.709
pH (S.U.) Minimum	7.03	7.07	7.08	7.11	7.25	6.8	6.86	6.73	7.06	6.75	6.77	6.56
pH (S.U.) Maximum	7.91	7.86	7.81	7.88	7.79	7.38	7.37	7.39	7.38	7.42	7.43	7.38
DO (mg/L) Minimum	8.53	8.29	8.29	8.1	7.92	7.72	7.87	8.28	8.41	7.86	8.42	7.46
CBOD5 (lbs/day) Average Monthly	< 5.0	< 5	< 5	6	< 5.0	8	7	< 8.0	13	< 12	11	6
CBOD5 (lbs/day) Weekly Average	< 5.0	6	10	7	6.0	10	9	11	23	19	19	11
CBOD5 (mg/L) Average Monthly	< 2.0	< 2	< 2	3	< 3.0	3	3.0	< 3.0	3.0	< 3.0	4	2
CBOD5 (mg/L) Weekly Average	< 2.0	3	4	4	3.0	5	4.0	4.0	4.0	5.0	5	4
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	591	602	507	498	477	592	440	657	906	1121	848	696
BOD5 (mg/L) Raw Sewage Influent Average Monthly	249	280	230	247	245	241	213	238	252	333	266	268
TSS (lbs/day) Average Monthly	< 15	7	8	9	7.0	12	13	19	28	26	13	< 7
TSS (lbs/day) Raw Sewage Influent Average Monthly	831	848	673	795	561	835	768	717	1016	1019	809	678
TSS (lbs/day) Weekly Average	20	11	15	12	10	16	16	23	40	38	15	< 9
TSS (mg/L) Average Monthly	< 6.0	3.5	3.8	4.2	3.5	4.8	5.5	6.7	6.8	7.7	4.3	< 5.8

TSS (mg/L) Raw Sewage Influent Average Monthly	352	397	308	392	289	338	343	258	268	303	255	260
TSS (mg/L) Weekly Average	8.5	5.0	6.0	6.0	5.0	6.0	6.0	7.7	8.3	12.0	5.0	< 6.6
Fecal Coliform (CFU/100 ml) Geometric Mean	< 3	< 1	< 1	< 1.0	< 1.0	< 2	< 3.0	< 2.0	< 1	< 27	< 5	< 2.0
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	5	< 1	1	2.0	1.0	10	39	5	3	136	136	15
Ammonia (lbs/day) Average Monthly	< 0.3	< 0.3	< 0.2	< 0.2	< 0.4	0.4	0.9	1.0	2.0	< 0.8	< 0.9	1.0
Ammonia (mg/L) Average Monthly	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	0.2	0.4	0.4	0.6	< 0.3	< 0.3	0.5
Total Phosphorus (lbs/day) Average Monthly	0.3	< 0.3	< 0.2	0.2	< 0.2	0.3	0.3	< 0.4	< 0.5	0.7	0.5	< 0.4
Total Phosphorus (mg/L) Average Monthly	0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	0.1	< 0.1	< 0.1	0.2	0.2	< 0.2

DMR Data for Outfall 002 (from December 1, 2020 to November 30, 2021)

Parameter	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20
Flow (MGD) Average Monthly	0.0486	0.049417	0.05229	0.052237	0.04905	0.0489	0.0374				0.0420	0.14578
Flow (MGD) Daily Maximum	0.0567	0.055936	0.06248	0.059616	0.05125	0.0553	0.162				0.150128	0.18290
pH (S.U.) Minimum	7.03	7.07	7.08	7.11	7.25	6.8	6.86				6.77	6.56
pH (S.U.) Maximum	7.91	7.86	7.81	7.88	7.79	7.38	7.37				7.43	7.38
DO (mg/L) Minimum	8.53	8.29	8.29	8.1	7.92	7.72	7.87				8.42	7.46
CBOD5 (lbs/day) Average Monthly	< 5.0	< 0.9	< 5	1	< 3.0	8	2.0				3	3
CBOD5 (lbs/day) Weekly Average	< 5.0	1	10	2	3.0	10	3.0				3	4

CBOD5 (mg/L) Average Monthly	< 2.0	< 2	< 2	3	< 1.0	3	3.0				4	2
CBOD5 (mg/L) Weekly Average	< 2.0	3	4	4	1.0	5	4.0				5	4
TSS (lbs/day) Average Monthly	< 15	1	8	2	1.0	12	4.0				5	< 7
TSS (lbs/day) Weekly Average	20	2	15	3	2.0	16	7.0				5	9
TSS (mg/L) Average Monthly	< 6.1	3.5	3.8	4.2	3.5	4.8	5.5				4.3	< 5.8
TSS (mg/L) Weekly Average	8.5	5.0	6.0	6.0	5.0	6.0	6.0				5.0	< 6.6
Fecal Coliform (CFU/100 ml) Geometric Mean	< 3	< 1	< 1.0	< 1	< 1.0	< 2	< 3.0				< 5	< 2
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	5	< 1	1.0	2.0	1.0	10	39				136	15
Ammonia (lbs/day) Average Monthly	< 0.3	< 0.06	< 0.2	< 0.03	< 0.08	0.4	0.3				< 0.7	0.6
Ammonia (mg/L) Average Monthly	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	0.2	0.4				< 0.3	0.5
Total Phosphorus (lbs/day) Average Monthly	0.3	< 0.05	< 0.2	0.04	< 0.05	0.3	0.1				0.1	< 0.2
Total Phosphorus (mg/L) Average Monthly	0.1	< 0.10	< 0.1	0.1	< 0.1	0.1	0.1				0.2	< 0.2

Compliance History

No Violations.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .75
Latitude 39º 59' 9.19" **Longitude** -75º 31' 26.33"
Wastewater Description: Sewage Effluent

Outfall No. 002 **Design Flow (MGD)** .135
Latitude 40º 0' 19.00" **Longitude** -75º 32' 5.00"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine*	0.5	Average Monthly	-	92a.48(b)(2)

*No TRC limit is needed as UV system is used for disinfection.

Water Quality-Based Limitations

Parameter	Limit (mg/l)	SBC	Model
CBOD5(05/01 to 10/31) *	10	Average Monthly	Existing Limit/WQM model
CBOD5(11/01 to 4/30)	20	Average Monthly	Existing /Seasonal limit
TSS	10	Average Monthly	Existing Limit
Dissolved Oxygen	5	Inst. Minimum	Existing limit/Chapter 93
NH3-N (5/1 to 10/31) *	2.5	Average Monthly	Existing limit/WQM model
NH3-N (11/1 to 4/31)	7.0	Average Monthly	Existing /Seasonal limit
pH	6.0 to 9.0 STD at all times		Chapter 95/93
Fecal Coliform (5/1 to 9/30)	# 200/1000	Geo. Mean / IMax.	Existing limit/Chapter 92a
Fecal Coliform (10/1 to 4/30)	# 2000/10,000	Geo. Mean / IMax	Existing limit/Chapter 92a
UV	Monitoring	Daily Minimum	SOP
Total N	Report	Average Monthly	SOP
Total Phosphorus	0.5	Average Monthly	Existing/BPJ
E-Coli	Report	Inst. Maximum	SOP

*The existing limits for $CBOD_5$and NH_3-N are based on water quality modeling and an anti-degradation (no measurable change) analysis conducted by SERO in 1999 for the proposed facility upgrade. No additional modeling or analysis is deemed necessary at this time, as conditions have not significantly changed. The DO limit is the minimum specified in Chapter 93 for HQ-TSF waters and is acceptable.

**Total Nitrogen, E-Coli and UV monitoring are new requirements included in the draft permit.

Best Professional Judgment (BPJ) Limitations

BPJ was used (in the past) to establish a technology-based requirement for TP in the permit of 0.5 mg/L, and the facility is capable of achieving this limit; to be consistent with anti-backsliding requirements the limit will remain in the permit.

A “Reasonable Potential Analysis” determined the following parameters were candidates for limitations/monitoring:

Parameter	Monthly Ave. Conc. (mg/l)	Maximum Daily Conc. (mg/l)	Inst. Max. (mg/l)	Recommendation/Basis
Total Copper*	16.4	25.6	41.0	TMS v.1.3
Total Zinc	Report	Report	Report	TMS v.1.3

*Only 3 samples are available. Quarterly monitoring is included to get more data to be evaluated at the next permit renewal.

Total Copper and Total Zinc monitoring are new requirements in the permit.

See the below TMS model report:

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Ridley Creek STP** NPDES Permit No.: **PA0050504** 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
0.75	100	7						

					0 if left blank		0.6 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		644									
	Chloride (PWS)	mg/L		131									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		105									
	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		15									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	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		61									
	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

Ridley Creek STP, NPDES Permit No. PA0050504, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Ridley Creek**

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	000621	18.72	359	8.2			Yes
End of Reach 1	000621	17.25	247	11.1			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	18.72	0.1	0.96									100	7		
End of Reach 1	17.25	0.1	1.32												

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	18.72														
End of Reach 1	17.25														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Ridley Creek STP, NPDES Permit No. PA0050504, Outfall 001

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

| | *Hydrodynamics*

☐ *Wasteload Allocations*

☑ *AFC* CCT (min): 1.518 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	13.439	14.0	25.6	Chem Translator of 0.96 applied
Total Lead	0	0		0	64.581	81.6	149	Chem Translator of 0.791 applied
Total Zinc	0	0		0	117.180	120	219	Chem Translator of 0.978 applied

☑ *CFC* CCT (min): 1.518 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.00

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	8.956	9.33	17.0	Chem Translator of 0.96 applied
Total Lead	0	0		0	2.517	3.18	5.81	Chem Translator of 0.791 applied
Total Zinc	0	0		0	118.139	120	219	Chem Translator of 0.986 applied

☑ *THH* CCT (min): 1.518 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	

Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 2.224 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	
Total Copper	0	0		0	N/A	N/A	N/A	
Total Lead	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	0.1	0.16	16.4	25.6	41.0	µg/L	16.4	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	140	AFC	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Lead	N/A	N/A	Discharge Conc < TQL

Model Results **1/12/2022** **Page 6**

Anti-Backsliding

N/A

Proposed Effluent Limitations and Monitoring Requirements

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

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
CBOD5 Nov 1 - Apr 30	125	188	XXX	20	30	40	1/week	24-Hr Composite
CBOD5 May 1 - Oct 31	62	94	XXX	10	15	20	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	62	94	XXX	10.0	15.0	XXX	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	44	XXX	XXX	7.0	XXX	14	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	16	XXX	XXX	2.5	XXX	5	1/week	24-Hr Composite
Total Phosphorus	3.0	XXX	XXX	0.5	XXX	1	1/week	24-Hr Composite
Total Copper	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Zinc	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite

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 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	125	188	XXX	20	30	40	1/week	24-Hr Composite
CBOD5 May 1 - Oct 31	62	94	XXX	10	15	20	1/week	24-Hr Composite
TSS	62	94	XXX	10.0	15.0	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
UV intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	44	XXX	XXX	7.0	XXX	14	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	16	XXX	XXX	2.5	XXX	5	1/week	24-Hr Composite
Total Phosphorus	3.0	XXX	XXX	0.5	XXX	1	1/week	24-Hr Composite

Outfall 002, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Copper	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Zinc	Report Avg Qrtly	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite