pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0028614**
Facility Type	**Municipal**	APS ID	**1017593**
Major / Minor	**Minor**	Authorization ID	**1316578**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Spring City Borough Chester County**	Facility Name	**Spring City Borough STP**
Applicant Address	6 S Church Street	Facility Address	99 Gay Street
	Spring City, PA 19475-1876		Spring City, PA 19475
Applicant Contact	Dennis Rittenhouse	Facility Contact	Steve Fegan
Applicant Phone	(610) 948-3660	Facility Phone	(610) 948-7979
Client ID	67692	Site ID	257174
Ch 94 Load Status	Not Overloaded	Municipality	Spring City Borough
Connection Status	No Limitations	County	Chester
Date Application Received	May 27, 2020	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Permit Renewal.

Summary of Review

The permittee has submitted a renewal application for their treated sewage discharge into French Creek (WWF, MF) through Outfall 001.

The facility is serving the Borough of Spring City (95%) and East Vincent Township (5%).

It consists of grit removal area, mechanical bar screen, an equalization tank, two (2) primary clarifiers, one (1) first stage trickling filter, one (1) second stage trickling filter, two (2) final clarifiers, and an ultraviolet (UV) disinfection system.

The annual average design flow is 0.61 MGD, the hydraulic design capacity is 0.787 MGD, and the organic design capacity is 1,272 lbs BOD_5/day

DEP has conducted a review of their Chapter 94 report for 2019 and no problems found in hydraulic loading of the facility.

Inspection on 5/06/2020 showed no violations at the site. The chemical used in the process for phosphorus removal is Del-pac. Copy of the infection attached:

PA0028614_SEWAGE_RTPT_20200506.pd

No violations noted.

Following work are completed at STP during last 5 years: upgrade to existing trickling filters to allow a media depth of at least 9 feet with a 4 foot wind screen, aerobic sludge digester (320,000 gallon), Ballasted Floc Clarification Process (CoMAG) which includes two 10 -15 foot diameter final clarifiers and a reaction tank, and UV light disinfection system

Approve	Deny	Signatures	Date
X		*Begay Omuralieva* Begay Omuralieva / Environmental Engineering Specialist	September 17, 2020
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	09/18/2020

Summary of Review

installed.

There are no changes in quality and quality of the wastewater discharge. Determination of Effluent limits and monitoring requirements are listed on pp. 8 -9 and are proposed same as existing on pp.10-11 of this factsheet.

Act 14 Notifications: East Vincent TWP received a notification on April 1, 2020.
Borough of Spring City planning Commission received a notification on April 1, 2020.

Public Participation

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

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.610
Latitude	40Âº 10' 22.84"	Longitude	-75Âº 32' 9.14"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Schuylkill River (WWF, MF)	Stream Code	00833
NHD Com ID	133228812	RMI	0.5600
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-D	Chapter 93 Class.	WWF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	POLYCHLORINATED BIPHENYLS (PCBS)		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status	Final	Name	Schuylkill River PCB TMDL

Changes Since Last Permit Issuance: No known

Compliance History

DMR Data for Outfall 001 (from June 1, 2019 to May 31, 2020)

Parameter	MAY-20	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19
Flow (MGD) Average Monthly	0.403	0.509	0.402	0.407	0.310	0.364	0.304	0.276	0.233	0.283	0.333	0.288
Flow (MGD) Daily Maximum	0.751	1.313	0.904	0.615	1.114	0.533	0.624	0.608	0.301	0.356	0.620	0.416
pH (S.U.) Minimum	6.14	6.21	6.11	6.44	6.15	6.29	6.10	6.43	6.40	6.7	6.7	6.41
pH (S.U.) Instantaneous Maximum	7.12	7.24	7.55	7.21	7.62	7.13	7.06	7.21	7.39	7.23	7.2	7.29
DO (mg/L) Minimum	7.17	8.06	8.83	9.62	8.90	9.32	9.43	7.24	6.68	6.61	6.28	7.36
CBOD5 (lbs/day) Average Monthly	25	< 16	< 15	8	< 8	< 12	< 10	10	10	8	9	8
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	844	1396	606	560	395	436	426	563	454	263	495	380
CBOD5 (lbs/day) Weekly Average	73	35	18	12	14	17	17	16	12	10	15	11
CBOD5 (mg/L) Average Monthly	7.3	< 4	3.7	2.6	< 3.5	< 4.4	< 4.4	4.6	5.3	3.8	3.3	3.5
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	276	342	163	177	210	153	184	258	239	120	175	167
CBOD5 (mg/L) Weekly Average	18.4	6	4	3.3	6	10	6.7	7.0	6.7	4.0	5.0	5.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	1750	631	595	540	355	739	617	597	667	527	452	675
BOD5 (mg/L) Raw Sewage Influent Average Monthly	439	206	238	200	210	321	238	302	328	235	211	301

TSS (lbs/day) Average Monthly	45	44	61	43	28	31	25	23	16	29	24	15
TSS (lbs/day) Raw Sewage Influent Average Monthly	526	850	429	463	716	584	543	574	426	403	409	462
TSS (lbs/day) Weekly Average	50	76	135	73	58	51	39	36	26	44	55	27
TSS (mg/L) Average Monthly	16	11	18	13	11	10	11	10	8	14	8	7
TSS (mg/L) Raw Sewage Influent Average Monthly	179	207	132	146	328	201	235	261	225	184	144	204
TSS (mg/L) Weekly Average	21	16	51	17	19	19	15	18	13	20	12	12
Total Dissolved Solids (lbs/day) Average Monthly			634			887			1093			1197
Total Dissolved Solids (lbs/day) Daily Maximum			634			887			1093			1197
Total Dissolved Solids (mg/L) Average Monthly			398			537			510			416
Total Dissolved Solids (mg/L) Daily Maximum			398			537			510			416
Fecal Coliform (CFU/100 ml) Geometric Mean	18	23	< 5	< 4	< 2	< 7	35	< 9	< 7	35	69	46
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	350	217	18	45	3	136	86	45	36	40	361	96
UV Transmittance (%) Minimum	46.5	42.7	57	58.4	53.8	57.4	56.4	52.2	53.7	52.0	58.5	49.2
Total Nitrogen (lbs/day) Average Monthly	80	< 70	< 49	65	< 44	< 51	55	46	50	55	57	64
Total Nitrogen (mg/L) Average Monthly	20.1	< 22.74	< 19.75	23.9	< 27.79	< 22.34	21.2	23.4	24.5	24.3	26.6	28.6
Ammonia (lbs/day) Average Monthly	1	1	< 0.40	< 0.30	< 3	< 0.50	< 1	1	6	13	11	12

Ammonia (mg/L) Average Monthly	0.54	0.23	< 0.10	< 0.10	< 1.21	< 0.17	< 0.52	0.55	3.18	6.0	3.79	5.4
Total Phosphorus (lbs/day) Average Monthly	6	4	7	6	4	5	4	4	5	4	6	4
Total Phosphorus (mg/L) Average Monthly	2.13	1.09	1.99	1.74	1.78	1.61	1.86	1.95	2.62	1.93	1.94	1.88
PCBs (Dry Weather) (pg/L) Daily Maximum						2760						

Compliance History

Effluent Violations for Outfall 001, from: July 1, 2019 To: May 31, 2020

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	03/31/20	Wkly Avg	51	mg/L	45	mg/L
Total Phosphorus	09/30/19	Avg Mo	2.62	mg/L	2.0	mg/L
Total Phosphorus	05/31/20	Avg Mo	2.13	mg/L	2.0	mg/L

Summary of Inspections:

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.345
Latitude 40° 10' 22.65" **Longitude** 75° 32' 12.27"
Wastewater Description: Effluent discharge from Spring City Borough STP and Sewer System

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	200 / 100 ml	Geo Mean	-	DRBC, 92a.47(a)(4)
Fecal Coliform	1,000 / 100 ml	IMAX	-	DRBC, 92a.47(a)(4)

Water Quality-Based Limitations

Following is a summary of the previous WQ based limits determination based on the anticipated expansion of the plant :

A PTR (preliminary treatment requirements) letter for expanded flow from 0.345 MGD to 0.61 MGD was attached to the NPDES permit application. Since there is an insignificant increase in the BOD loading from the facility after expansion, there is no need to remodel this segment of the Schuylkill River.

The existing limits, PTR limits, and draft permit limits are as follows:

Parameter	*Existing limit*	*PTR limit*	*Draft Permit Limit*
$CBOD_5$	*25.0 mg/l*	*20.0 mg/l*	*15.0/25.0 mg/l (seasonal)*
TSS	*30.0 mg/l*	*20.0 mg/l*	*20.0 mg/l*
NH3-N	*8.0/12.0 mg/l*	*6.0 mg/l*	*6.0/12.0 mg/l (seasonal)*
Total Phosphorus	*2.0 mg/l*	*2.0 mg/l*	*2.0 mg/l*
DO	*6.0 mg/l*	*6.0 mg/l*	*6.0 mg/l*
Fecal Coliform	*200/100 ml geometric mean and 1,000/100 ml instantaneous maximum*		
TRC	*0.5 mg/l*	*0.5 mg/l **	*N/A*
pH (s.u)	*6.0 to 9.0*	*6.0 to 9.0*	*6.0 to 9.0*
TDS	*-------*	*1000 mg/l*	*1000 mg/l*

CBOD5: The summer $CBOD_5$ limit is based on the existing permitted load: 25 mg/l x (0.345/0.61) = 14.1 mg/l (say 15 mg/l). The winter season $CBOD_5$ limit is calculated as twice the summer limit, up to 25 mg/l. Therefore, it is recommended to include seasonal limits of 15 mg/l (summer) and 25 mg/l (winter) for the expanded facility.
NH3-N

Based on the previously PTR (preliminary treatment requirements) attached to the 2015 NPDES permit application, the proposed limit for NH3-N after expansion was 6 mg/l (May – September) and 12 mg/l (October – April).

A review of the DMR data indicated that the monthly average ammonia-nitrogen limit was exceeded 13 out of 12 months after the permit was last renewed in May 2015.
Total Phosphorus: Total Phosphorus limit of 2 mg/l was included in the permit issued in 2011. This limit was included to be consistent with Department regulations for waters which are threatened to be impaired by nutrients. There is no requirement to lower the Total Phosphorus limit at this time.

DO: The treatment plant is currently achieving the DO limit of 6.0 mg/l.

TRC: Since UV disinfection system is proposed for plant expansion, the TRC limit is removed after expansion.

TDS: The TDS limit of 1000 mg/l is a DRBC requirement.

Total Nitrogen: Monitoring for total nitrogen was added to permit in order to obtain nutrient data.

TSS: The facility reported a DMR exceedance of their permit limit for TSS in the past year (51.0 mg/l above 45 mg/l of average weekly). The operator has indicated it was laboratory error.

Reasonable Potential Analysis

This is a minor POTW permit application with limited toxics data. The application included data for copper (0.0280 mg/l) and zinc (0.061 mg/l). With 400:1 dilution ratio with the Schuylkill River, the concentrations of copper and zinc will be well below instream criteria. Therefore, no PENTOXSD modeling is required.

Schuylkill River PCB TMDL

Following determination was provided in previous permit's *draft* and **final** renewal review.

On October 17, 2007 Department notified the permittee regarding the Total Maximum Discharge load (TMDL) for Polychlorinated Biphenyl (PCB) for the Schuylkill River. Prior to the NPDES permit reissued in 2011, the permittee collected one wet weather and dry weather sample and analyzed for PCBs using Analytical Method 1668A. The results were 8,160 pg/l and 15,500 pg/l. The permittee commenced a PMP (pollution minimization plan) which included a trackback study of tributary sewer mains. The results were non-detected using less sensitive PCB test methods. The permittee collected another effluent dry weather PCB samples in 2013 and tested using Method 1668A, with reported results of 437 pg/l (grab sample) and 2,120 pg/l (24-hour composite).

The PCB results from the dry weather sample collected in 2013 suggest that there may be a significant decrease in PCB concentrations. Based on natural attenuation and upgrades to the treatment facility proposed for completion in three years, it is possible that further decrease in PCBs concentration can be achieved. Annual PCB sampling using Analytical Method 1668A is required to provide a baseline PCB level and to show progress towards achieving the instream PCB criteria of 44 pg/l.

Guidelines developed by DRBC for the Delaware River TMDL suggests once per year dry weather PCB sampling using method 1668A for less significant point sources of PCBs. The guidance suggests both dry and wet weather samples for facilities influenced by stormwater. Therefore, the draft permit proposed both dry and wet weather sampling for the first year, followed by annual dry weather sampling for the following years. The facility is also required to submit annual PMP reports.

The EPA asked for an explanation why a wet weather PCB sample is required to be collected only during the first year after permit renewal. The presumption is that since the influent flow to the POTW is <u>not</u> from a combined sewer system, the POTW is not directly influenced by stormwater. For these facilities, DRBC guidance recommends only annual dry weather PCB sampling. However, a wet weather PCB sample collected during the first year is required to confirm that wet weather does not influence the facility.

Therefore, one dry weather PCB sampling for year is established. And remained in proposed draft 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.

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	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	127	203	XXX	25	40	50	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	76	114	XXX	15	22.5	30	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) Raw Sewage Influent	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	153	229	XXX	30	45	60	1/week	24-Hr Composite
Total Dissolved Solids	Report Avg Qrtly	Report Daily Max	XXX	1000.0 Avg Qrtly	2000.0 Daily Max	2500	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	61	XXX	XXX	12	XXX	24	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	31	XXX	XXX	6	XXX	12	1/week	24-Hr Composite

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 Phosphorus	10	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite
PCBs Dry Weather Analysis (pg/L)	XXX	XXX	XXX	Report Daily Max	XXX	XXX	1/year	24-Hr Composite

Compliance Sampling Location: Outfall 001