pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0030597**
Facility Type	**Municipal**	APS ID	**29413**
Major / Minor	**Minor**	Authorization ID	**1346207**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Franklin County General Authority**	Facility Name	**South Patrol Road STP**
Applicant Address	5540 Coffey Avenue	Facility Address	4759 Inovation Drive
	Chambersburg, PA 17201-4113		Chambersburg, PA 17201-4113
Applicant Contact	Ron Artley	Facility Contact	John Fetterhoff
Applicant Phone	(717) 267-6025	Facility Phone	(717) 267-6025
Client ID	119241	Site ID	532837
Ch 94 Load Status	Existing Organic Overload	Municipality	Letterkenny Township
Connection Status	No Limitations	County	Franklin
Date Application Received	March 16, 2021	EPA Waived?	No
Date Application Accepted	March 29, 2021	If No, Reason	Significant CB Discharge
Purpose of Application	NPDES Renewal.		

Summary of Review

Franklin County General Authority (FCGA) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was last reissued on December 27, 2016 and became effective on January 1, 2017. The permit was amended on August 30, 2018 to correct the BOD loading specified in the original permit renewal. The permit will expire on December 31, 2021.

Based on the review, it is recommended that the permit be drafted.

Sludge use and disposal description and location(s): Sludge is treated onsite and then sent to a landfill

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.

Approve	Deny	Signatures	Date
X		*Jinsu Kim* Jinsu Kim / Environmental Engineering Specialist	August 2, 2021
X		Maria D. Bebenek for Daniel W. Martin Daniel W. Martin, P.E. / Environmental Engineer Manager	August 9, 2021
X		Maria D. Bebenek Maria D. Bebenek, P.E. / Program Manager	August 9, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.25
Latitude	39º 58' 58.47"	Longitude	-77º 41' 17.83"
Quad Name	Chambersburg	Quad Code	1924
Wastewater Description:	Sewage Effluent		
Receiving Waters	Rocky Spring Branch (TSF)	Stream Code	60038
NHD Com ID	49479816	RMI	2.78
Drainage Area	3.32 sq.mi	Yield (cfs/mi^2)	0.111
Q_{7-10} Flow (cfs)	See comments below	Q_{7-10} Basis	USGS gage 0614500
Elevation (ft)	583	Slope (ft/ft)	
Watershed No.	13-C	Chapter 93 Class.	TSF
Existing Use	None	Existing Use Qualifier	None
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Non-Attaining		
Cause(s) of Impairment	See comments below		
Source(s) of Impairment	See comments below		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Hagerstown, MD		
PWS Waters	Potomac River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	43.2

Drainage Area
The discharge is to Rocky Spring Branch at RM 2.78. A drainage area upstream of the discharge point is estimated to be 3.32 sq.mi. according to USGS StreamStats available at https://streamstats.usgs.gov/ss/.

Streamflow
USGS StreamStats produced a Q7-10 flow of 0.0323 cfs at the point of discharge. However, the estimated drainage area is lower than the required value to be used in regression equation, resulting in potential errors in calculations. Presumably, this is the reason a low flow yield method was used in the last permit renewal. This low flow yield method is shown below.

Nearest USGS Streamgage is 0614500 on Conococheague Creek near Fairview, MD. Recent stream flow retrievals resulted in a Q_{7-10}, Q_{1-10}, and $Q3_{0-10}$ of 55.0 cfs, 48.1 cfs, and 65.3 cfs, respectively at this gage for record period of 1930-2008. The drainage area is reported to be 494 mi^2. These values were obtained from the latest USGS streamflow report. The drainage area at discharge point was found to be 3.35 mi^2 from StreamStats Version 3.0 Flow Statistics Ungaged Site Report on June 20, 2016.

Q_{7-10} runoff rate = 55.0/494 = 0.111 cfs/mi^2.
Q_{30-10}:Q_{7-10} = 65.3/551 = 1.187:1
Q_{1-10}:Q_{7-10} = 48.1/55 = 0.87:1
Q_{7-10} = 0.111*3.35 = 0.372 cfs

This is a reasonable approach; although the drainage area used in this method is slightly different than the drainage area obtained during this renewal, this 3.35 sq.mi. will be used in this renewal for consistency purposes.

Rocky Spring Branch
Under 25 Pa Code §93.9z, Rocky Spring Branch is designated as trout stocking fishes and supports migratory fishes. No special protection waters are therefore impacted by this discharge. No Class A Wild Trout Fishery is impacted by this discharge. DEP's latest integrated water quality report issued in 2020 indicates that Rocky Spring Branch nearby the discharge point is impaired for siltation due to the rural area condition, agricultural activities and surface mining activities. The stream is also impaired for turbidity due to an unknown source. A TMDL has not yet been developed to address these impairments.

Public Water Supply Intake
The fact sheet developed for the last permit renewal indicates that the nearest downstream PWS is the Hagerstown intake located on the Potomac River, south of Williamsport, Maryland. The discharge is greater than 43.2 miles upstream from the intake. Given the distance, the discharge is not expected to impact the water supply.

Treatment Facility Summary

Treatment Facility Name: South Patrol Road STP

WQM Permit No.	Issuance Date
2810401	February 11, 2011

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Contact Stabilization	Ultraviolet	0.25

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.25	600	Existing Organic Overload	Aerobic Digestion	Landfill

FCGA owns and operates a sanitary wastewater treatment plant located at 2326 South Patrol Road Chambersburg in Greene/Letterkenny Townships, Franklin County. The plant serves Green Township (75%) and Letterkenny Township (25%) and all sewer systems are 100% separated. The plant also receives sanitary wastewater from certain buildings within the Letterkenny Army Depot. With the annual average design flow and hydraulic design capacity of 0.25 MGD, the plant utilizes an Aero-mod Sequox BNR system consisting of an EQ basin, fermentation tanks (2), fine aeration tanks (2), course aeration tanks (2), clarifiers (2), UV disinfection and outfall structure.

Digesters (2) and drying beds (4) are available for solids treatment. Solids are then sent to a landfill (Advance Disposal) for ultimate disposal. Caustic Soda and Alum are used for pH adjustment and phosphorus removal, respectively.

There are two (2) industrial/commercial users contributing wastewater into the sewer system; Volvo (0.008 MGD) and Access Lift (0.0045 MGD). The application indicates that the facility does not have an EPA-approved pretreatment program.

Compliance History

Summary of DMRs:	A summary of past 12-month DMR data is presented on the next page.
Summary of Inspections:	11/21/19 – Brandon Bettinger, DEP Water Quality Specialist, conducted an administrative inspection pertaining to a Chesapeake Bay TMDL monitoring results. Several errors/issues were noted and requested the permittee to resubmit the forms. No violation was noted at the time of inspection. 07/12/18 – Pat Bowen, former DEP Water Quality Specialist, conducted a routine inspection and noted that all treatment units appeared to be on-line and effluent appeared to be clear. No violation was noted at the time of inspection. 10/24/17 – Pat Bowen conducted a routine inspection and noted that no abnormal conditions were observed. No violation was noted at the time of inspection.
Other Comments:	DEP's database revealed that there is no open violation associated with the permittee or facility.

Effluent Date

DMR Data for Outfall 001 (from June 1, 2020 to May 31, 2021)

Parameter	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20
Flow (MGD) Average Monthly	0.08917	0.09687	0.12065	0.07543	0.07051	0.09323	0.07488	0.0775	0.09889	0.07989	0.06766	0.07409
Flow (MGD) Daily Maximum	0.17934	0.28513	0.40277	0.22046	0.16051	0.30855	0.16674	0.15965	0.1636	0.16341	0.11148	0.10318
pH (S.U.) Daily Minimum	6.9	7.0	6.8	6.8	6.6	6.6	6.2	6.8	6.7	6.7	6.9	6.8
pH (S.U.) Instantaneous Maximum	7.5	7.4	7.4	7.2	7.3	7.4	7.7	7.3	7.5	7.5	7.7	7.4
DO (mg/L) Daily Minimum	5.5	5.6	5.9	6.7	6.2	8.0	6.9	6.5	5.6	5.3	5.1	5.1
CBOD5 (lbs/day) Average Monthly	< 3.3	< 3.8	< 11.5	4.5	< 2.6	< 3.7	< 2.0	< 2.3	< 3.7	< 3.3	< 2.0	< 1.9
CBOD5 (lbs/day) Weekly Average	< 4.2	< 5.9	32.0	7.8	< 5.4	< 8.9	< 2.7	< 2.9	< 5.5	< 5.3	< 2.3	< 2.0
CBOD5 (mg/L) Average Monthly	< 4.0	< 4.0	< 8.5	9.6	< 4.0	< 4.0	< 3.0	< 3.8	< 4.0	< 4.0	< 3.2	< 3.0
CBOD5 (mg/L) Weekly Average	< 4.0	< 4.0	20.0	13.9	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	3.7	< 3.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	479	367	288	90	90	175	186	105	449	260	616	593
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	858	825	420	100	97	672	357	184	1240	502	951	920
BOD5 (mg/L) Raw Sewage Influent Average Monthly	622	417	282	198	212	261	279	174	497	299	925	955
TSS (lbs/day) Average Monthly	3.5	4.6	16.6	9.9	6.4	13.7	6.3	4.5	< 7.9	< 4.3	< 4.1	< 3.1
TSS (lbs/day) Raw Sewage Influent Average Monthly	547	550	323	114	60	153	85	77	312	465	1226	1615
TSS (lbs/day) Raw Sewage Influent Daily Maximum	1232	676	594	173	80	506	132	202	761	1509	2104	6590
TSS (lbs/day) Weekly Average	4.7	7.1	54.3	13.9	10.0	28.9	7.2	7.3	17.8	7.3	4.8	< 3.4

Parameter	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20
TSS (mg/L) Average Monthly	4.5	5.5	10.5	20.8	10.3	16.1	9.6	7.3	< 8.2	< 5.1	< 6.4	< 5.0
TSS (mg/L) Raw Sewage Influent Average Monthly	644	663	357	239	114	222	128	120	329	416	1825	2680
TSS (mg/L) Weekly Average	6.4	9.8	18.0	28.0	12.8	21.0	10.8	10.0	15.0	5.5	8.0	< 5.0
Fecal Coliform (No./100 ml) Geometric Mean	< 2	< 2	< 5	< 3	< 1	< 1	< 2	< 2	< 4	< 4	< 4	< 4
Fecal Coliform (No./100 ml) Instantaneous Maximum	3	17	222	16	< 1	1	11	7	206	352	22	35
UV Intensity (mW/cm²) Daily Minimum	7.8	6.55	2.25	1.45	1.9	2.75	6.0	4.65	2.75	9.25	9.55	7.7
Nitrate-Nitrite (mg/L) Average Monthly	< 7.13	< 12.69	< 12.82	21	< 22.43	< 24.064	< 28.82	27.88	< 21.688	16.96	< 9.266	9.184
Nitrate-Nitrite (lbs) Total Monthly	< 195	< 323	< 442	332	< 323	< 483	< 592	600	< 546	362	< 174	191
Total Nitrogen (mg/L) Average Monthly	< 9.8	< 14.3	< 15.01	27.44	< 25.08	< 25.719	< 29.84	< 29.29	< 23.164	< 18.21	< 10.781	< 10.494
Total Nitrogen (lbs) Effluent Net Total Monthly	< 260	< 364	< 516	451	< 354	< 520	< 613	< 632	< 581	< 390	< 202	< 218
Total Nitrogen (lbs) Total Monthly	< 260	< 364	< 516	451	< 354	< 520	< 613	< 632	< 581	< 390	< 202	< 218
Total Nitrogen (lbs) Effluent Net Total Annual									< 5088.0			
Total Nitrogen (lbs) Total Annual									< 5088			
Ammonia (lbs/day) Average Monthly	< 1.3	< 0.6	< 1.0	3.0	< 0.6	< 0.6	< 0.3	< 0.5	< 0.3	< 0.3	< 0.4	< 0.3
Ammonia (mg/L) Average Monthly	< 1.62	< 0.77	< 1.42	5.17	< 2.02	< 0.83	< 0.43	< 0.88	< 0.47	< 0.38	< 0.61	< 0.44
Ammonia (lbs) Total Monthly	< 41	< 18	< 43	97	< 18.0	< 17	< 10	< 17	< 10	< 8	< 11	< 9
Ammonia (lbs) Total Annual									< 310			
TKN (mg/L) Average Monthly	< 2.67	< 1.61	< 2.19	6.44	< 2.65	< 1.66	< 1.03	< 1.41	< 1.48	< 1.25	< 1.52	< 1.31
TKN (lbs) Total Monthly	< 65	< 40	< 75	119	< 31	< 37	< 21	< 32	< 36	< 28	< 28	< 27

Parameter	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20
Total Phosphorus (lbs/day) Average Monthly	0.1	0.1	0.4	0.4	0.2	0.3	0.1	0.1	0.2	0.08	0.08	0.05
Total Phosphorus (mg/L) Average Monthly	0.14	0.13	0.27	0.75	0.36	0.39	0.19	0.17	0.25	0.102	0.136	0.07
Total Phosphorus (lbs) Effluent Net Total Monthly	4	3	11	11	6	9	4	4	7	2	2	1
Total Phosphorus (lbs) Total Monthly	4	3	11	11	6	9	4	4	7	2	2	1
Total Phosphorus (lbs) Effluent Net Total Annual									< 56.0			
Total Phosphorus (lbs) Total Annual									< 56			

Existing Effluent Limits and Monitoring Requirements

Tables below summarize effluent limits and monitoring requirements specified in the current NPDES permit renewal.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	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	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5	52.0	83.0	XXX	25.0	40.0	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	62.0	93.0	XXX	30.0	45.0	60	1/week	24-Hr Composite
Fecal Coliform (No/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ultraviolet light intensity (mW/cm^2)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Ammonia-Nitrogen Nov 1 - Apr 30	18.0	XXX	XXX	9.0	XXX	18	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	6.0	XXX	XXX	3.0	XXX	6	2/week	24-Hr Composite
Total Phosphorus	4.0	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite

Existing Effluent Limits and Monitoring Requirements (continued)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Net Total Nitrogen	Report	9132.0	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	1218.0	XXX	XXX	XXX	XXX	1/month	Calculation

Development of Effluent Limitations and Monitoring Requirements

Outfall No. 001 **Design Flow (MGD)** .25
Latitude 39º 58' 58.52" **Longitude** -77º 41' 17.90"
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)

Comments: UV disinfection is utilized; therefore, TRC effluent standards are not applicable.

Water Quality-Based Limitations

CBOD5, NH3-N and Dissolved Oxygen (DO)
WQM 7.0 is a water quality model designed to assist DEP to determine appropriate permit requirements for CBOD5, NH3-N and DO. DEP's guidance no. 391-2000-007 provides the technical methods contained in WQM 7.0 for conducting wasteload allocation and for determining recommended NPDES effluent limits for point source discharges. DEP recently updated this model (ver. 1.1) to include new ammonia criteria that has been approved by US EPA as part of the 2017 Triennial Review. The model output indicates that all existing effluent limits for these pollutants are still appropriate. No changes are therefore recommended.

Toxic Pollutants
This is a minor sewage facility with a design flow less than 1.0 MGD; therefore, only certain metals were required to be sampled as part of the application. The application reported non-detect results of Total Copper and Total Lead. Total Zinc was 0.043 mg/L which is lower than the current DEP water quality criteria (0.12 mg/L). No reasonable potential has been determined for these toxic pollutants.

Best Professional Judgment (BPJ) Limitations

Dissolved Oxygen
The existing minimum DO effluent limit is the current trout stocking fishery water quality criterion for DO listed in 25 Pa Code §93.7(a). It is recommended that this limit be maintained in the permit to ensure the protection of water quality standards. This approach is consistent with DEP's current Standard Operating Procedure (SOP) no. BPNPSM-PMT-033 and has been applied to other point source dischargers throughout the state.

Total Phosphorus
The existing permit contains average monthly and instantaneous maximum (IMAX) effluent limits of 2.0 mg/L and 4.0 mg/L, respectively. Historically a TP effluent limit of 2.0 mg/L was established in the permit when DEP generally determines that

the facility is expected to contribute 0.25% or more of the total point source phosphorus loading at the point of impact (page 17 of DEP's technical guidance no. 391-2000-018). DEP previously documented that the discharge contributes more than 0.25% and phosphorus controls were therefore needed. There is no reason to relax or remove these effluent limits; therefore, continuation of existing effluent limits is still appropriate in accordance with 40 CFR §122.44(l)(1).

Additional Considerations

Flow Monitoring Requirement
The requirement to monitor the volume of effluent will remain in the draft permit per 40 CFR § 122.44(i)(1)(ii).

Influent BOD & TSS Monitoring Requirement
As a result of negotiation with EPA, the existing influent monitoring reporting requirement for TSS and BOD5 will be maintained in the draft permit. This requirement has been consistently assigned to all municipal wastewater treatment facilities.

E. Coli Monitoring Requirement
As recommended by DEP's SOP no. BPNPSM-PMT-033, a routine monitoring for E. Coli will be included in the permit under 25 Pa Code §92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 1/quarter will be included permit to be consistent with the recommendation from this SOP.

UV Monitoring Requirement
The existing UV monitoring requirement will remain unchanged in the permit. This requirement is recommended by DEP's SOP no. BPNPSM-PMT-033 and has been applied to all sewage facilities greater than 0.002 MGD that are equipped with the UV system.

Total Dissolved Solids (TDS)
TDS and its associated solids including Bromide, Chloride, and Sulfate have become statewide pollutants of concern. The requirement to monitor these pollutants must be considered under the criteria specified in 25 Pa. Code § 95.10 and the following January 23, 2014 DEP Central Office Directive:

> *For point source discharges and upon issuance or reissuance of an individual NPDES permit:*
>
> *-Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.*
>
> *- Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.*

The permittee reported maximum concentrations of 513 mg/L for TDS and 0 mg/L for bromide. Accordingly, the requirement to monitor for these pollutants is not necessary.

Mass Loading Limitations
All effluent mass loading limits will be based on the formula: design flow x concentration limit x conversion factor of 8.34.

Chesapeake Bay TMDL
On March 30, 2012, DEP finalized Pennsylvania's Chesapeake Watershed Implementation Plan Phase 2 (i.e., Phase 2 WIP) to address U.S EPA's expectations for the Chesapeake Bay TMDL. The Chesapeake Bay TMDL identifies the necessary pollution reductions from major sources of nitrogen, phosphorus and sediment across the Bay jurisdictions and sets pollution limits necessary to meet water quality standards. The Phase 2 WIP is an update to the Pennsylvania's Chesapeake Bay TMDL Strategy (2004) and the Chesapeake WIP Phase I (2011). In August 2019, DEP finalized Phase 3 Chesapeake Bay Watershed Implementation Plan to provide the plans in place by 2025 to further achieve the nutrient and sediment reduction targets. The more details on the TMDL are available at www.dep.pa.gov.

As part of the Phase 3 WIP process, a Supplement to the Phase 3 WIP was developed, providing an update on TMDL implementation for point sources and a discussion of adjustments to the permitting strategy as a result of implementation experience. According to this document, Silver Spring Township WWTP is a Phase 3 significant discharger located within the Chesapeake Bay watershed. The following Cap Loads specified in the current Supplement to the Phase 3 WIP will be included in the draft permit:

NPDES Permit No.	Phase	Facility	Latest Permit Issuance Date	Permit Expiration Date	Cap Load Compliance Start Date	TN Cap Load (lbs/yr)	TN Offsets Included in Cap Load (lbs/yr)	TP Cap Load (lbs/yr)	TN Delivery Ratio	TP Delivery Ratio
PA0030597	3	Franklin County General Authority	12/27/2016	12/31/2021	10/1/2012	9,132	-	1,218	0.683	0.67

Class A Wild Trout Fishery
A Class A Wild Trout stream is not impacted by this discharge.

Anti-backsliding Requirements
Unless stated otherwise in this fact sheet, all permit requirements proposed in this fact sheet are at least as stringent as those specified in the existing 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
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Total Nitrogen (lbs) Effluent Net	XXX	9132.0 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Nitrogen (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Ammonia (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs)	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus (lbs) Effluent Net	XXX	1218.0 Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

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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	Instant. 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	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Daily Min	XXX	XXX	XXX	1/day	Grab
CBOD5	52.0	83.0	XXX	25.0	40.0	50	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	62.0	93.0	XXX	30.0	45.0	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Recorded
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation

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

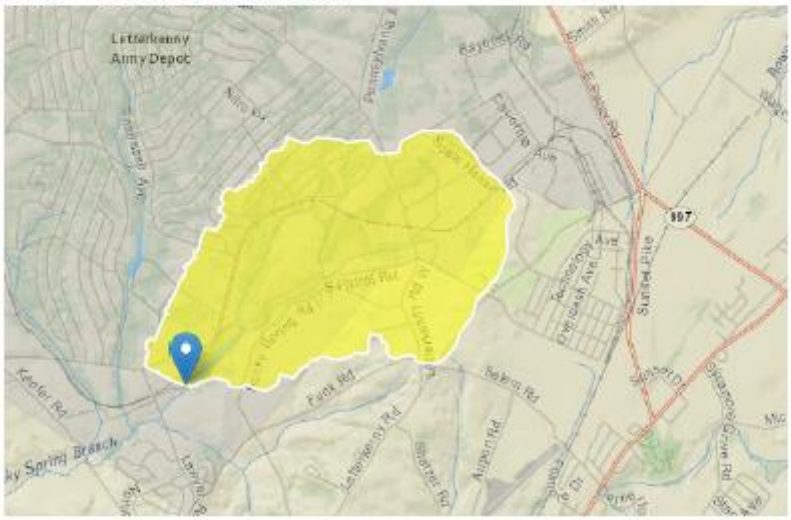
Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instant. Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia Nov 1 - Apr 30	18.0	XXX	XXX	9.0	XXX	18	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	6.0	XXX	XXX	3.0	XXX	6	2/week	24-Hr Composite
Ammonia (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
TKN	XXX	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TKN (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	4.0	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Total Phosphorus (lbs)	Report Total Mo	XXX	XXX	XXX	XXX	XXX	1/month	Calculation
E. Coli (No. / 100 mL)	XXX	XXX	Report Daily Min	XXX	XXX	XXX	1/quarter	Grab

Attachments

1. StreamStats

StreamStats Report

Region ID: PA
Workspace ID: PA20210730121828394000
Clicked Point (Latitude, Longitude): 39.98284, -77.68834
Time: 2021-07-30 08:18:44 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3.32	square miles
PRECIP	Mean Annual Precipitation	39	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	2.83	miles per square mile
ROCKDEP	Depth to rock	3	feet
CARBON	Percentage of area of carbonate rock	36.78	percent

Low-Flow Statistics Parameters [Low Flow Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.32	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	39	inches	35	50.4
STRDEN	Stream Density	2.83	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	3	feet	3.32	5.65
CARBON	Percent Carbonate	36.78	percent	0	99

Low-Flow Statistics Disclaimers [Low Flow Region 2]

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

Low-Flow Statistics Flow Report [Low Flow Region 2]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.121	ft^3/s
30 Day 2 Year Low Flow	0.192	ft^3/s
7 Day 10 Year Low Flow	0.0323	ft^3/s
30 Day 10 Year Low Flow	0.0564	ft^3/s
90 Day 10 Year Low Flow	0.109	ft^3/s

Low-Flow Statistics Citations

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

2. WQM 7.0 ver. 1.1

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
13C	60038	ROCKY SPRING BRANCH	2.780	583.00	3.35	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.111	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
SouthPatrol STP	PA0030597	0.2500	0.2500	0.2500	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	3.00	0.00	0.00	0.70

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Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
13C	60038	ROCKY SPRING BRANCH	2.570	574.00	3.48	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.111	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
13C	60038	ROCKY SPRING BRANCH

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
2.780	0.37	0.00	0.37	.3868	0.00812	.48	11	22.91	0.14	0.089	22.55	7.00
Q1-10 Flow												
2.780	0.32	0.00	0.32	.3868	0.00812	NA	NA	NA	0.14	0.093	22.72	7.00
Q30-10 Flow												
2.780	0.44	0.00	0.44	.3868	0.00812	NA	NA	NA	0.15	0.085	22.34	7.00

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WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
13C	60038	ROCKY SPRING BRANCH

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.780	0.250	22.549	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
11.001	0.480	22.912	0.144
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
13.73	1.385	1.53	0.852
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.590	24.404	Owens	5
Reach Travel Time (days)			
0.089			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.009	13.54	1.52	6.71
0.018	13.35	1.51	6.81
0.027	13.16	1.49	6.89
0.036	12.98	1.48	6.96
0.045	12.80	1.47	7.02
0.054	12.63	1.46	7.08
0.063	12.45	1.45	7.12
0.071	12.28	1.44	7.16
0.080	12.11	1.43	7.20
0.089	11.94	1.42	7.23

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.87	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.187	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

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WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
13C	60038	ROCKY SPRING BRANCH

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.780	SouthPatrol STP	13.37	6	13.37	6	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.780	SouthPatrol STP	1.62	3	1.62	3	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
2.78	SouthPatrol STP	25	25	3	3	5	5	0	0

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WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19C	60038	ROCKY SPRING BRANCH

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
2.780	SouthPatrol STP	PA0030597	0.250	CBOD5	25		
				NH3-N	3	6	
				Dissolved Oxygen			5

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Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other: