SPDES Permit Fact Sheet
STAMP Sewer Works, Inc.
ONSITE STAMP WWTF
NY0272078

Department of
Environmental
Conservation

Contents

Summary of Permit

A new State Pollutant Discharge Elimination System (SPDES) permit has been drafted for the ONSITE STAMP WWTF. The following is the summary of the permit limits and monitoring requirements:

New:

- *Flow* – Added a monthly average limit and a daily maximum monitoring requirements for three construction phases (Phase 1 - 0.25 MGD; Phase 2 – 0.5 MGD; Phase 3: 1.0 MGD).
- *pH* – Added a pH range of 6.5 – 8.5 SU.
- *BOD_5* – Added 7-day average concentration of 5.0 mg/l for all phases and mass loading for different phases are given below:
    - At phase 1 mass loading is 10 lbs/d.
    - At phase 2 mass loading is 21 lbs/d.
    - At phase 3 mass loading is 42 lbs/d.
- *DO* – Added a daily minimum concentration of 7.0 mg/l for all phases.
- *Temperature* – Added an instantaneous maximum limit of 90°*F for phases.*
- *TSS* – Added a 7-day average concentration of 10 mg/l and loading for different phases are given below:
    - At phase 1 mass loading is 21 lbs/d.
    - At phase 2 mass loading is 42 lbs/d.
    - At phase 3 mass loading is 83 lbs/d
- *Settleable Solids* – Added a daily maximum limit of 0.1 ml/l for phases.
- *Ammonia (as N) (Summer)* – Added a monthly average concentration of 1.2 mg/l and loading for different phases are given below:
    - At phase 1 mass loading is 2.5 lbs/d.
    - At phase 2 mass loading is 5.0 lbs/d.
    - At phase 3 mass loading is 10 lbs/d.
- *Ammonia (as N) (Winter)* – Added a monthly average concentration of 1.9 mg/l loading for different phases are given below:
    - At phase 1 mass loading is 4.0 lbs/d.
    - At phase 2 mass loading is 8.0 lbs/d.
    - At phase 3 mass loading is 16 lbs/d
- *TKN – Added a daily maximum monitoring requirement.*
- *Total Phosphorus (as P)* – Added a monthly average concentration of 0.2 mg/l; loading for different phases are given below:
    - At phase 1 mass loading is 0.42 lbs/d.
    - At phase 2 mass loading is 0.83 lbs/d.
    - At phase 3 mass loading is 1.7 lbs/d.
- *Mercury, Low Level* – Added a daily maximum concentration of 0.7 ng/l for all phases.
- *Coliform, Fecal* – Added 30-day Geometric Mean of 200 #/ml for all phases.
- *Coliform, Fecal* – Added 70-day Geometric Mean of 400 #/ml for all phases.
- *Chlorine, Total Residual* – Added a daily maximum concentration limit of 0.03 mg/l for all phases.
- *WET Testing* – Added an Action Level of WET testing for the period one year over the course permit period for all phases.
- *Schedule of compliance* – Added schedule of compliance to construct wastewater treatment plant.
- *Schedule of Additional Submittals* – see page 10.

- **This factsheet summarizes the information used to determine the effluent limitations (limits) and other conditions contained in the permit. General background information about the regulatory bases for the effluent limitations and other conditions contained in this permit are in the Appendix linked throughout this factsheet.**

Administrative History

7/20/2020 Received NY-2C permit application to obtain a new permit.

9/21/2020 Received resubmitted NY-2C permit application to obtain a permit.

1/20/2021 Received application to transfer SPDES Permit Application to STAMP Sewer Works, Inc.

8/2/2021 The Department published a notice of complete application in the Environmental Notice Bulletin (ENB).

8/10/2021 STAMP Sewer Works, Inc.provided notice of complete application in the Daily News in Batavia. The publications contain information on the public notice process. The public comment period commenced on 8/2/2021.

Please see the Notice of Complete Application, published in the Environmental Notice Bulletin and newspapers, for information on the public notice process.

Facility Information

The Western New York Science & Technology Advanced Manufacturing Park (STAMP) Wastewater Project (Project) is a proposed advanced manufacturing campus on approximately 1,262 acres in the Town of Alabama. The Project will have the capability to accommodate a combined flow (treated sanitary and treated industrial process discharges) from the Project site of up to 6 MGD. The STAMP Wastewater Treatment Facility (WWTF), for which this permit is proposed, is designed to receive only sanitary wastewaters generated on the project site and future domestic waste from the Town. Separate individual permits will be issued to STAMP Project industrial tenants which discharge an industrial wastewater. Industrial wastewaters cannot be discharged under this permit.

The WWTF discharges to a wet well, where all treated site discharges will be conveyed, prior to being pumped through a 24-inch PVC outlet pipe approximately nine miles long, generally situated northerly along State Route 63, discharging to Oak Orchard Creek, approximately 1 mile south of the Village of Medina (see figure below).

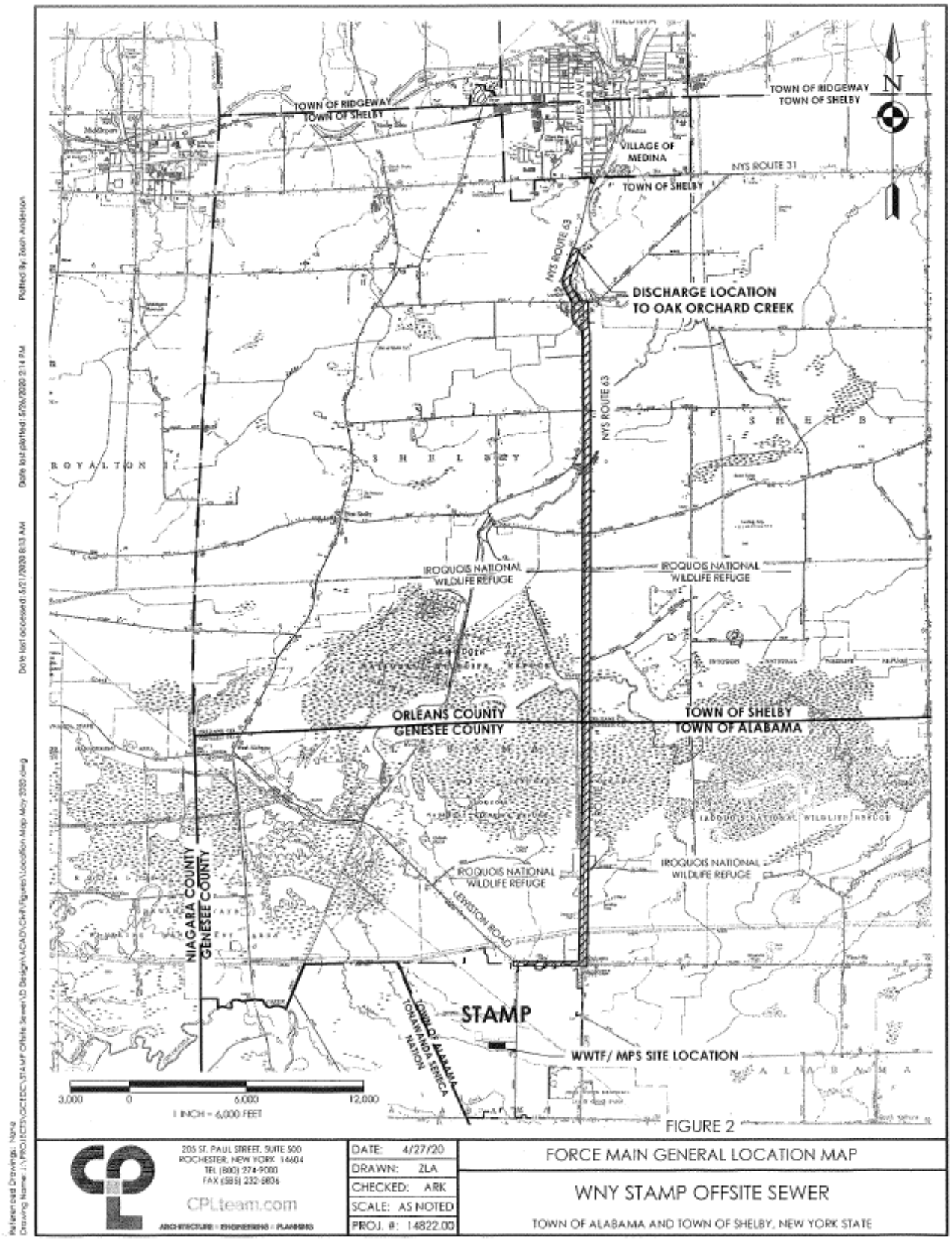
The WWTF will consist of the following treatment processes:

- Preliminary Treatment: Screening.
- Secondary Treatment: Sequencing Batch Reactors (SBR)
- Tertiary Treatment: Disc filters
- Disinfection: UV disinfection

Sludge is hauled off-site for disposal.

The WWTF is expected to be constructed in three phases. This permit includes effluent limit tables for the three expected WWTF construction phases: 0.25 MGD, 0.50 MGD, and 1.0 MGD. Proposed construction of a design other than these design flows would require a modification to this SPDES permit. As identified in the permit compliance schedule, the WWTF design report must demonstrate conformance with design standards for the phase of the WWTP that will be constructed. DEC understands that build out of the WWTF plant is dependent upon the STAMP tenant(s) and the capacity of the sanitary wastewater that will be delivered from the tenant(s) to the WWTF. At the completion of construction of each phase, the permittee must submit the completed Construction Completion Certification form (Form) signed by a NYS-licensed professional engineer (PE), identifying that the construction was performed under the general supervision of the PE and fully completed in accordance with the approved engineering report, plans and specifications, and permit. The permittee may not commence operation of the WWTF prior to written acceptance from of the Form by DEC.

Site Overview



Enforcement History
This is a new discharger; therefore, there is no enforcement history.

Existing Effluent Quality
This is a new discharger; therefore, there is no existing effluent quality.

Additional Site-Specific Concerns
In accordance with 6 NYCRR 703.3, the dissolved oxygen (DO) effluent limit for this permit is based upon a minimum daily average not to be less than 4.0 mg/L as required for a non-trout Class C receiving water. This limit is applied at the receiving water, but the monitoring location will be at the STAMP site, approximately nine miles from the receiving water. With a DO limit set at 5.0 mg/L, there is a potential that oxygen could be depleted along the length of the outfall pipe and result in a DO near or less than 4.0 mg/L in the receiving water. Therefore, the Department included a DO limit of 7.0 mg/l, which in combination with the technology based effluent limitations (TBEL) for carbonaceous and nitrogenous oxygen demanding substances (BOD [5.0 mg/L] and ammonia [1.2mg/L summer limit/1.9mg/L winter limit]), will be protective of the DO in the receiving water. The permit condition that requires short-term monitoring in-stream of the DO remains in the permit to confirm that the DO limit is being met.

Receiving Water Information
The facility proposes to discharge via the following outfalls:

Outfall No.	SIC Code	Wastewater Type	Receiving Water
001	4592	Treated Sanitary Wastewater	Oak Orchard Creek

The location of the outfall(s), and the name, classification, and index numbers of the receiving waters are indicated in the Outfall and Receiving Water Summary Table at the end of this fact sheet. Appendix Link

Impaired Waterbody Information
The Oak Orchard segment (PWL No. 0301 - 0014) was first listed on the 1998 New York State Section 303(d) List of Impaired/TMDL Waters as impaired due to Phosphorus from Agriculture (see 6 NYCRR Part 703.2). The segment continues to be listed as of the 2018 NYS Section 303(d) List. A TMDL has not been developed to address the impairment.

DEC reviewed the Oak Orchard Creek Biological Stream Assessment (BSA) dated July 1, 2017, to understand the basis and magnitude of the impairment. The BSA was conducted to update water quality assessment information for the Oak Orchard watershed and provide biological and water chemical data for modeling purposes of the watershed. One of the sampling points in this survey (ORCH 21.6) is located in Oak Orchard Creek in the Town of Shelby, immediately downstream of the Shelby Center Dam, and approximately 1 mile south of the proposed STAMP discharge to Oak Orchard Creek. The Total Phosphorus measured during sampling at this location was approximately 250 µg/L (0.25mg/L) and represents the background concentration the ORCH 21.6 stream segment, in Oak Orchard Creek. To ensure that the total phosphorus concentration in this segment of the stream is not increased by this discharge, the phosphorus permit limit for the STAMP discharge is set below the background concentration, which is technologically achievable.

The STAMP site is currently primarily agricultural in use. The agricultural offset load is computed based on a load coefficient[1] multiplied by the agricultural area of agricultural lands (cultivated crops and pasture/hay). The removal of the agricultural component from the STAMP site results in a phosphorus load offset of approximately 2.4 lbs./d. In comparison, the discharge at full WWTP buildout (1.0 MGD) will result in a phosphorus mass loading increase to the stream of 1.7 lbs./d. Therefore, the WWTF discharge will not contribute to the phosphorus impairment.

Coverage under the SPDES General Permit for Stormwater Discharge from Construction Activities (GP-0-20-001) (CGP) is required prior to construction activities at the STAMP site. Under the CGP the permittee is required to implement post construction controls designed in accordance with the NYS Stormwater Management Design Manual (2015), which may include infiltration practices, bioretention, stormwater ponds, and/or runoff reduction techniques/Green Infrastructure, which will in turn equate to a lesser phosphorus runoff contribution from the site.

The implementation of the CGP and a reduction in the Total Phosphorus limit to 0.2 mg/L will ensure that there is no net increase of total phosphorus concentration in Oak Orchard Creek. The discharge from STAMP will benefit Oak Orchard Creek by decreasing the existing phosphorus concentration due to the elimination of agricultural use and treated discharge under the proposed SPDES permit.

Mixing Zone and Critical Receiving Water Data

The 7Q10 flow for the Oak Orchard Creek of 0.46 MGD (0.70 CFS) was used to calculate the chronic A(C) dilution ratio. The 7Q10 flow was obtained from the USGS/NYSDEC, Bulletin 74, 1979, at gage station # 04220100 at Shelby. The 30Q10 flow of 0.55 MGD (0.84 CFS) was obtained from the same source and used to calculate the Human, Aesthetic, Wildlife (HEW) dilution ratio. A 1Q10 flow of 0.23 MGD (0.35 CFS) was estimated as half the 7Q10 and used to calculate the acute A(A) dilution ratio.

Critical receiving water data are listed in the Pollutant Summary Table at the end of this fact sheet. Appendix Link

Outfall No.	Acute Dilution Ratio A(A)	Chronic Dilution Ratio A(C)	Human, Aesthetic, Wildlife Dilution Ratio (HEW)	Basis
001	1.2:1	1.5:1	1.6:1	TOGS 1.3.1

Dilutions in the table above are based on 1 MGD effluent and quite small. The dilution from the shared outfall is expected to decrease further when the effluent from industrial tenants is added to this shared outfall. The final dilution is estimated to need to reflect a 6 MGD effluent from this outfall but this value is uncertain since the actual tenancy of the industrial park has not been established. As more tenants with effluent are added, the dilution will come closer to a 1:1 or zero dilution.

Critical receiving water data are listed in the Pollutant Summary Table at the end of this fact sheet. Appendix Link

[1] Export Coefficient: Worrall et al.,1999; Haith et al., 1992; Harmel et al.,2006

Permit Requirements

The technology based effluent limitations (TBELs), water quality-based effluent limitations (WQBELs), existing effluent quality, and a discussion of the selected effluent limitation for each pollutant present in the discharge are provided in the Pollutant Summary Table.

Whole Effluent Toxicity (WET) Testing

An evaluation of the discharge indicates the potential for toxicity based on the following criteria: Appendix Link

- Treatment plants which equal or exceed a discharge of 1MGD. (#7)

The requirement for whole effluent toxicity (WET) testing is new. No previous WET data was available to perform a reasonable potential analysis. Consistent with TOGS 1.3.2, given the dilution available and location within the Great Lakes basin, the permit requires chronic WET testing. Samples will be collected Quarterly in years ending in 0 and 5. WET testing action levels of 0.3 TUa and 1.0 TUc have been included in the permit for each species. The acute action levels for each species represent the acute dilution ratio times a factor of 0.3. The chronic action levels represent the chronic dilution ratio. Appendix Link

Anti-backsliding

This is a new discharger; therefore, there is no anti-backsliding. Appendix Link

Antidegradation

The permit contains effluent limitations which ensure that the designated best use of the receiving waters will be maintained. Please see the Environmental Notice Bulletin for information on the State Environmental Quality Review (SEQR)[2] determination. Appendix Link

Discharge Notification Act Requirements

In accordance with the Discharge Notification Act (ECL 17-0815-a), the permittee is required to post a sign at each point of wastewater discharge to surface waters. The permit also contains a requirement that the permittee make the sampling data available, upon request, to the public.

Stormwater Pollution Prevention Requirements

The facility is a publicly owned treatment works ≥ 1 MGD that requires SPDES permit coverage under 40 CFR 122.26 (b)(14)(ix).

BMPs consistent with requirements contained in the SPDES Multi-sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) (GP-0-17-004), Sector T, have been included in the permit. This requirement is new.

Mercury[3]

The facility is a new discharger located within the Great Lakes basin and, therefore, the permit includes a monthly average mercury effluent limitation of 0.7 ng/L. As the facility is being given the water quality standard as an effluent limitation, and is not subject to the multiple discharge variance (MDV), a mercury minimization program (MMP) is not required.

[2] As prescribed by 6 NYCRR Part 617
[3] In accordance with NYS' Mercury TOGS 1.3.10.

Schedule(s) of Compliance

A Schedule of Compliance, in accordance with 40 CFR 122.47, for a new facility, is being included in the permit[4] based on a reasonable finding of the following:

- Permittee will build the new wastewater treatment plant to meet either the TBEL or WQBEL, as required by the permit.
- Permit limits and permit requirements will be met by the end of the Compliance Schedule.

Items in the Schedule of Compliance:

- Submittal of an approvable engineering report detailing the new treatment system components needed to comply with the final effluent limitations for all pollutant parameters included in the permit.
- Engineering design, approval, and construction schedules for the new WWTP.
- Submittal of the Certificate of Construction Completion.

Schedule(s) of Submittals

A schedule of submittals has been included:

- Whole Effluent Toxicity (WET) testing result report
- Biennial Pollutant Scan
- Public notification
- Water Treatment Chemical (WTC) annual report

[4] Pursuant to 6 NYCRR 750-1.14

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USEPA Major/Class 05 Municipal

Date: September 1, 2022
Permit Writer: Demissie Woyecha
Water Quality Reviewer: DW
Full Technical Review

OUTFALL AND RECEIVING WATER SUMMARY TABLE

Outfall	Latitude	Longitude	Receiving Water Name	Water Class	Water Index No. / Priority Waterbody Listing (PWL) No.	Major / Sub Basin	Hardness (mg/l)	1Q10 (MGD)	7Q10 (MGD)	30Q10 (MGD)	Critical Effluent Flow (MGD)	Dilution Ratio		
												A(A)	A(C)	HEW
001	43° 06' 28" N	78° 16' 57" W	Oak Orchard Creek	C	Ont. 138 PWL: 0301-0014	03 / 01	400[5]	0.23	0.46	0.55	1.5	1.2:1	1.5:1	1.6:1

POLLUTANT SUMMARY TABLE FOR THREE DIFFERENT PHASES

Phase 1

Outfall #	001	**Description of Wastewater:** Sanitary wastewater from tenants														
		Type of Treatment: Activated Sludge														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL		
General Notes: No existing data were obtained.															
Flow Rate	MGD	Monthly Avg	-	- Actual Average	-	0.25	Design Flow	Narrative: No alterations that will impair the waters for their best usages.					703.2	-	TBEL
	The flow limit is set at the design flow of the wastewater treatment facility.														
pH	SU	Minimum	-	-	-	6.0	TOGS 1.3.3	unknown	-	6.5 – 8.5	Range	-	703.3	-	WQBEL
		Maximum	-	-	-	9.0									
	Consistent with ECL 17-0509, TBELs for facilities treating sanitary sewage are reflective of secondary treatment standards . Given that adequate dilution is not available, an effluent limitation equal to the WQS is appropriate.														
Temperature	°F	Daily Max	-	-	-	-	-	Unknown	-	90	Daily Max	90	704.2	-	WQBEL
	Consistent 6 NYRR 704.2, narrative (Non-Trout): The water temperature at the surface of a stream shall not be raised to more than 90 deg. F at any point.														
Dissolved Oxygen (DO)	mg/L	Daily Min	-	-	-	7.0	-	-	-	4.0	minimum	-	Part 703.3	-	TBEL
	See the Additional Site-Specific Concerns Section.														
BOD_5	mg/L	Monthly Avg	-	-	-	5.0	-	unknown				25	703.3	-	TBEL

[5] Ambient hardness data obtained from RIBS at Gage Station ID 03011424. The hardness value at this station is as high as 1450 mg/l. In accordance with Chapter 3 of USEPA's Water Quality Standards Handbook (EPA 8234-8-17-001) a default value of 400 mg/l has been used.

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Water Quality Reviewer: DW
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Outfall #	001	**Description of Wastewater:** Sanitary wastewater from tenants **Type of Treatment:** Activated Sludge														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement	
			Permit Limit	Existing Effluent Quality	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL			
	lbs/d	Daily Max	-	-	-	10	-					52				
	The downstream DO concentration was modeled using the Streeter-Phelps equations in the RSAT model using the following assumptions: Effluent DO = 5.0 mg/l, Effluent $CBOD_5$ = 25 mg/l and Effluent Ammonia (as N) = 1.2 mg/l. The TBEL is more stringent than WQBEL and the TBEL shall become effective in the limit.															
TSS	mg/L	Monthly Avg	-	-	-	10	-	Unknown	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages. (703.2)			-	TOGS 1.3.1	-	TBEL	
	lbs/d	Daily Max	-	-	-	21	-					-				
	Consistent 6 NYRR 703.2, the effluent limitation of 10 mg/l is protective of the best usage of the receiving water.															
Settleable Solids	mL/L	Daily Max	-	-	-	0.1	BPJ	Unknown	Narrative:			0.1	TOGS 1.3.1B	-	TBEL	
	Consistent with TOGS 1.3.3 the effluent limitation is equal to the TBEL of 0.1 ml/l for facilities providing secondary treatment and filtration. Given that adequate dilution is available the TBEL is reasonably protective of the WQS.															
Nitrogen, Ammonia (as N) June 1st-Oct 31st	mg/L	Monthly Avg	-	-	-	1.2	BPJ	-	-	-	A(C)	1.2	TOGS 1.1.1	-	TBEL	
	lbs/d	Monthly Avg	-	-	-	2.5	BPJ	-	-	-	-	2.5				
	The WQS for Ammonia was determined from TOGS 1.1.1 from a winter pH of 7.5 and a temperature of 25 deg. F. The pH and temperature of the receiving waterbody were assumed values. Effluent is based on TOG 1.1.1 ambient criteria for seasonal temperature and no dilution is considered.															
Nitrogen, Ammonia (as N) Nov 1st-May 31st	mg/L	Monthly Avg	-	-	-	-	-	-	-	-	A(C)	1.9	TOGS 1.1.1	-	WQBEL	
	lbs/d	Monthly Avg	-	-	-	-	-	-	-	-		4.0				
	The WQS for Ammonia was determined from TOGS 1.1.1 from a winter pH of 7.5 and a temperature of 10 deg. F. The pH and temperature of the receiving waterbody were assumed values. Effluent is based on TOG 1.1.1 ambient criteria for seasonal temperature and no dilution is considered.															
TKN	mg/l	Daily Max	-	-	-	Monitor	BPJ	-	-	NA	-	-	-	-	Monitor	
	lbs/d	Daily Max	-	-	-	Monitor		-	-	-		-				
	TKN monitoring has been added for informational purpose.															

Outfall #	001	**Description of Wastewater:** Sanitary wastewater from tenants														
		Type of Treatment: Activated Sludge														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement	
			Permit Limit	Existing Effluent Quality	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL			
Total Phosphorus	mg/L	Monthly Avg	-	-	-	0.20	TOGS 1.3.6	0.30	0.40	Narrative: None in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages		-	703.2	-	TBEL	
	lbs/d	Monthly Avg	-	-	-	0.42		-	-			-				
	The facility discharges into Oak Orchard Creek which is listed on New York's Final 2018 Section of 303(d) List as impaired waterbody for Phosphorus. As discussed in the Impaired Waterbody Information Section above a TP limit of 0.2mg/L is proposed to protect the receiving water and ensure the discharge will not cause or contribute to a water quality violation.															
Mercury	ng/L	Monthly Avg	-	-	-	-	-	-	-	0.7	H(FC)	0.7	-TOGS 1.3.10	-	WQBEL	
	Consistent with TOGS 1.3.10, effluent limitation of 0.7 ng/L of Mercury for new discharge to Great Lakes Watershed. The permittee must sample for mercury using USEPA Method 1631															
Coliform, Fecal	#/100 ml	30d Geo Mean	-	-	-	200	TOGS 1.3.3	-	Narrative: The monthly geometric mean, from a minimum of five examinations, shall not exceed 200.				703.4	-	WQBEL	
		7d Geo Mean	-	-	-	400		-								
	Consistent with TOGS 1.3.3, effluent disinfection is required seasonally from May 1st - October 31st, due to the class of the receiving waterbody. Fecal coliform limits equal to the TBEL are specified.															
Total Residual Chlorine	mg/L	Daily Max	-	-	-	2.0	TOGS 1.3.3	Unknown	-	0.005	A(C)	-	703.4	0.03	ML	
	Seasonal effluent disinfection is being added to the permit. Due to the low dilution, the calculated WQBEL is less than the TBEL and less than the minimum level of detection. Therefore, an effluent limitation equal to the minimum level of detection of 0.030 mg/L is appropriate.															
WET testing	T_a	Acute	-	-	-	-	-	Unknown	-	-	A(A)	0.3	TOGS 1.3.2	-	AL	
	T_u	Chronic	-	-	-	-	-				A(C)	1.5				
	Treatment plants which equal or exceed a discharge of 1.0 MGD require WET testing.															

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Phase 2

Outfall #	001	**Description of Wastewater:** Sanitary wastewater from tenants **Type of Treatment:** Activated Sludge														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL		
General Notes: No existing data were obtained.															
Flow Rate	MGD	Monthly Avg	-	- Actual Average	-	0.50	Design Flow	Narrative: No alterations that will impair the waters for their best usages.					703.2	-	TBEL
	The flow limit is set at the design flow of the wastewater treatment facility.														
pH	SU	Minimum	-	-	-	6.0	TOGS 1.3.3	unknown	-	6.5 – 8.5	Range	-	703.3	-	WQBEL
		Maximum	-	-	-	9.0									
	Consistent with ECL 17-0509, TBELs for facilities treating sanitary sewage are reflective of secondary treatment standards . Given that adequate dilution is not available, an effluent limitation equal to the WQS is appropriate.														
Temperature	°F	Daily Max	-	-	-	-	-	Unknown	-	90	Daily Max	90	704.2	-	WQBEL
	Consistent 6 NYRR 704.2, narrative (Non-Trout): The water temperature at the surface of a stream shall not be raised to more than 90 deg. F at any point.														
Dissolved Oxygen (DO)	mg/L	Daily Min	-	-	-	7.0	-	-	-	4.0	minimum	-	Part 703.3	-	TBEL
	See the Additional Site-Specific Concerns Section														
BOD_5	mg/L	Monthly Avg	-	-	-	5.0	-	unknown				15	703.3	-	TBEL
	lbs/d	Daily Max	-	-	-	21	-					63			
	The downstream DO concentration was modeled using the Streeter-Phelps equations in the RSAT model using the following assumptions: Effluent DO = 5.0 mg/l, Effluent $CBOD_5$ = 15 mg/l and Effluent Ammonia (as N) = 1.2 mg/l. TBEL is more stringent than WQBEL and the TBEL shall become effective in the limit.														
TSS	mg/L	Monthly Avg	-	-	-	10	-	Unknown	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages. (703.2)			-	TOGS 1.3.1	-	TBEL
	lbs/d	Daily Max	-	-	-	42	-					-			
	Consistent 6 NYRR 703.2, the effluent limitation of 10 mg/l is protective of the best usage of the water.														
Settleable Solids	mL/L	Daily Max	-	-	-	0.1	BPJ	Unknown	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages. (703.2)			0.1	TOGS 1.3.1B	-	TBEL

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Outfall #	001	**Description of Wastewater:** Sanitary wastewater from tenants **Type of Treatment:** Activated Sludge														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data: Permit Limit	Existing Discharge Data: Existing Effluent Quality	Existing Discharge Data: # of Data Points Detects / Non-Detects	TBELs: Limit	TBELs: Basis	Water Quality Data & WQBELs: Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL	ML	Basis for Permit Requirement
	Consistent with TOGS 1.3.3 the effluent limitation is equal to the TBEL of 0.1 ml/l for facilities providing secondary treatment and filtration. Given that adequate dilution is available the TBEL is protective of the WQS.														
Nitrogen, Ammonia (as N) June 1st-Oct 31st	mg/L	Monthly Avg	-	-	-	1.2	BPJ	-	-	-	A(C)	1.2	TOGS 1.1.1	-	TBEL
	lbs/d	Monthly Avg	-	-	-	5.0	BPJ	-	-	-	-	5.0			
	The WQS for Ammonia was determined from TOGS 1.1.1 from a winter pH of 7.5 and a temperature of 25 deg.F. The pH and temperature of the receiving waterbody were assumed values because the discharge is effluent dominated discharge. Effluent is based on TOG 1.1.1 ambient criteria for seasonal temperature and no dilution is considered. Both TBEL and WQBEL are equal values and made the basis TBEL.														
Nitrogen, Ammonia (as N) Nov 1st-May 31st	mg/L	Monthly Avg	-	-	-	-	-	-	-	-	A(C)	1.9	TOGS 1.1.1	-	WQBEL
	lbs/d	Monthly Avg	-	-	-	-	-	-	-	-		8.0			
	The WQS for Ammonia was determined from TOGS 1.1.1 from a winter pH of 7.5 and a temperature of 10 deg. F. The pH and temperature of the receiving waterbody were assumed values because the discharge is effluent dominated discharge. Effluent is based on TOG 1.1.1 ambient criteria for seasonal temperature and no dilution is considered.														
TKN	mg/l	Daily Max	-	-	-	Monitor	BPJ	-	-	NA	-	-	-	-	Monitor
	lbs/d	Daily Max	-	-	-	Monitor		-	-	-		-			
	TKN monitoring has been added for informational purpose.														
Total Phosphorus	mg/L	Monthly Avg	-	-	-	0.20	TOGS 1.3.6	0.30	0.40	Narrative: None in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages.		-	703.2	-	TBEL
	lbs/d	Monthly Avg	-	-	-	0.83		-	-			-			
	The facility discharges into Oak Orchard Creek which is listed on New York's Final 2018 Section of 303(d) List as impaired waterbody for Phosphorus. As discussed in the Impaired Waterbody Information Section above a TP limit of 0.2mg/L is proposed to protect the receiving water and ensure the discharge will not cause or contribute to a water quality violation.														
Mercury	ng/L	Monthly Avg	-	-	-	-	-	-	-	0.7	H(FC)	0.7	-TOGS 1.3.10	-	WQBEL
	Consistent with TOGS 1.3.10, effluent limitation of 0.7 ng/L of Mercury for new discharge to Great Lakes Watershed. The permittee must sample for mercury using USEPA Method 1631														

Outfall #	001	**Description of Wastewater:** Sanitary wastewater from tenants														
		Type of Treatment: Activated Sludge														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement	
			Permit Limit	Existing Effluent Quality	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL			
Coliform, Fecal	#/100 ml	30d Geo Mean	-	-	-	200	TOGS 1.3.3	-	Narrative: The monthly geometric mean, from a minimum of five examinations, shall not exceed 200.				703.4	-	WQBEL	
		7d Geo Mean	-	-	-	400		-								
	Consistent with TOGS 1.3.3, effluent disinfection is required seasonally from May 1st - October 31st, due to the class of the receiving waterbody. Fecal coliform limits equal to the TBEL are specified.															
Total Residual Chlorine	mg/L	Daily Max	-	-	-	2.0	TOGS 1.3.3	Unknown	-	0.005	A(C)	-	703.4	0.03	ML	
	Seasonal effluent disinfection is being added to the permit. Due to the low dilution, the calculated WQBEL is less than the TBEL and less than the minimum level of detection. Therefore, an effluent limitation equal to the minimum level of detection of 0.030 mg/L is appropriate.															
WET testing	T_a	Acute	-	-	-	-	-	Unknown	-	-	A(A)	0.3	TOGS 1.3.2	-	AL	
	T_u	Chronic	-	-	-	-	-				A(C)	1.5				
	Treatment plants which equal or exceed a discharge of 1.0 MGD require WET testing.															

Permittee: STAMP Sewer Works, Inc.
Facility: ONSITE STAMP WWTF
SPDES Number: NY0272078
USEPA Major/Class 05 Municipal

Date: September 1, 2022
Permit Writer: Demissie Woyecha
Water Quality Reviewer: DW
Full Technical Review

Phase 3

Outfall #	001	**Description of Wastewater:** Sanitary wastewater from tenants **Type of Treatment:** Activated Sludge														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL		
General Notes: No existing data were obtained.															
Flow Rate	MGD	Monthly Avg	-	- Actual Average	-	1.0	Design Flow	Narrative: No alterations that will impair the waters for their best usages.					703.2	-	TBEL
	The flow limit is set at the design flow of the wastewater treatment facility.														
pH	SU	Minimum	-	-	-	6.0	TOGS 1.3.3	unknown	-	6.5 – 8.5	Range	-	703.3	-	WQBEL
		Maximum	-	-	-	9.0									
	Consistent with ECL 17-0509, TBELs for facilities treating sanitary sewage are reflective of secondary treatment standards . Given that adequate dilution is not available, an effluent limitation equal to the WQS is appropriate.														
Temperature	°F	Daily Max	-	-	-	-	-	Unknown	-	90	Daily Max	90	704.2	-	WQBEL
	Consistent 6 NYRR 704.2, narrative (Non-Trout): The water temperature at the surface of a stream shall not be raised to more than 90 deg. F at any point.														
Dissolved Oxygen (DO)	mg/L	Daily Min	-	-	-	7.0	-	-	-	4.0	minimum	-	Part 703.3	-	TBEL
	See the Additional Site-Specific Concerns Section.														
BOD_5	mg/L	Monthly Avg	-	-	-	5.0	-	unknown				15	703.3	-	TBEL
	lbs/d	Daily Max	-	-	-	42	-					130			
	The downstream DO concentration was modeled using the Streeter-Phelps equations in the RSAT model using the following assumptions: Effluent DO = 5.0 mg/l, Effluent $CBOD_5$ = 15 mg/l and Effluent Ammonia (as N) = 1.2 mg/l. TBEL is more stringent than WQBEL and the TBEL shall become effective in the limit.														
TSS	mg/L	Monthly Avg	-	-	-	10	-	Unknown	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages. (703.2)			-	TOGS 1.3.1	-	TBEL
	lbs/d	Daily Max	-	-	-	83	-					-			
	Consistent 6 NYRR 703.2, the effluent limitation of 10 mg/l is protective of the best usage of the water.														
Settleable Solids	mL/L	Daily Max	-	-	-	0.1	BPJ	Unknown	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages. (703.2)			0.1	TOGS 1.3.1B	-	TBEL

Permittee: STAMP Sewer Works, Inc.
Facility: ONSITE STAMP WWTF
SPDES Number: NY0272078
USEPA Major/Class 05 Municipal

Date: September 1, 2022
Permit Writer: Demissie Woyecha
Water Quality Reviewer: DW
Full Technical Review

Outfall #	001	**Description of Wastewater:** Sanitary wastewater from tenants **Type of Treatment:** Activated Sludge														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data: Permit Limit	Existing Discharge Data: Existing Effluent Quality	Existing Discharge Data: # of Data Points Detects / Non-Detects	TBELs: Limit	TBELs: Basis	Water Quality Data & WQBELs: Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL	ML	Basis for Permit Requirement
	Consistent with TOGS 1.3.3 the effluent limitation is equal to the TBEL of 0.1 ml/l for facilities providing secondary treatment and filtration. Given that adequate dilution is available the TBEL is protective of the WQS.														
Nitrogen, Ammonia (as N) June 1st-Oct 31st	mg/L	Monthly Avg	-	-	-	1.2	BPJ	-	-	-	A(C)	1.2	TOGS 1.1.1	-	TBEL
	lbs/d	Monthly Avg	-	-	-	10	BPJ	-	-	-	-	10			
	The WQS for Ammonia was determined from TOGS 1.1.1 from a winter pH of 7.5 and a temperature of 25 deg. F. The pH and temperature of the receiving waterbody were assumed values because the discharge is effluent dominated discharge. Effluent is based on TOG 1.1.1 ambient criteria for seasonal temperature and no dilution is considered. .														
Nitrogen, Ammonia (as N) Nov 1st-May 31st	mg/L	Monthly Avg	-	-	-	-	-	-	-	-	A(C)	1.9	TOGS 1.1.1	-	WQBEL
	lbs/d	Monthly Avg	-	-	-	-	-	-	-	-		16			
	The WQS for Ammonia was determined from TOGS 1.1.1 from a winter pH of 7.5 and a temperature of 10 deg. F. The pH and temperature of the receiving waterbody were assumed values because the discharge is effluent dominated discharge. Effluent is based on TOG 1.1.1 ambient criteria for seasonal temperature and no dilution is considered.														
TKN	mg/l	Daily Max	-	-	-	Monitor	BPJ	-	-	NA	-	-	-	-	Monitor
	lbs/d	Daily Max	-	-	-	Monitor		-	-	-		-			
	TKN monitoring has been added for informational purpose.														
Total Phosphorus	mg/L	Monthly Avg	-	-	-	0.20	TOGS 1.3.6	0.30	0.40	Narrative: None in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages.		-	-	-	TBEL
	lbs/d	Monthly Avg	-	-	-	1.7		-	-			-			
	The facility discharges into Oak Orchard Creek which is listed on New York's Final 2018 Section of 303(d) List as impaired waterbody for Phosphorus. As discussed in the Impaired Waterbody Information Section above a TP limit of 0.2mg/L is proposed to protect the receiving water and ensure the discharge will not cause or contribute to a water quality violation.														
Mercury	ng/L	Monthly Avg	-	-	-	-	-	-	-	0.7	H(FC)	0.7	-TOGS 1.3.10	-	WQBEL
	Consistent with TOGS 1.3.10, effluent limitation of 0.7 ng/L of Mercury for new discharge to Great Lakes Watershed. The permittee must sample for mercury using USEPA Method 1631														
Coliform, Fecal	#/100 ml	30d Geo Mean	-	-	-	200	TOGS 1.3.3	-					703.4	-	WQBEL

Outfall #	001	**Description of Wastewater:** Sanitary wastewater from tenants														
		Type of Treatment: Activated Sludge														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement	
			Permit Limit	Existing Effluent Quality	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis for WQBEL			
		7d Geo Mean	-	-	-	400		-	Narrative: The monthly geometric mean, from a minimum of five examinations, shall not exceed 200.							
	Consistent with TOGS 1.3.3, effluent disinfection is required seasonally from May 1st - October 31st, due to the class of the receiving waterbody. Fecal coliform limits equal to the TBEL are specified.															
Total Residual Chlorine	mg/L	Daily Max	-	-	-	2.0	TOGS 1.3.3	Unknown	-	0.005	A(C)	-	703.4	0.03	ML	
	Seasonal effluent disinfection is being added to the permit. Due to the low dilution, the calculated WQBEL is less than the TBEL and less than the minimum level of detection. Therefore, an effluent limitation equal to the minimum level of detection of 0.030 mg/L is appropriate.															
WET testing	T_a	Acute	-	-	-	-	-	Unknown	-	-	A(A)	0.3	TOGS 1.3.2	-	AL	
	T_u	Chronic	-	-	-	-	-				A(C)	1.5				
	Treatment plants which equal or exceed a discharge of 1.0 MGD require WET testing.															

Appendix: Regulatory and Technical Basis of Permit Authorizations

The information presented in the Appendix is meant to supplement the factsheet for multiple types of permits and may not be applicable to this specific permit.

Regulatory References

The requirements included in SPDES permits are based on both federal and state laws, regulations, policies, and guidance.

- Clean Water Act (CWA) 33 section USC 1251 to 1387
- Environmental Conservation Law (ECL) Articles 17 and 70
- Federal Regulations
  - 40 CFR, Chapter I, subchapters D, N, and O
- State environmental regulations
  - 6 NYCRR Part 621
  - 6 NYCRR Part 750
  - 6 NYCRR Parts 700 - 704 – Best use and other requirements applicable to water classes
  - 6 NYCRR Parts 800 – 941 - Classification of individual surface waters
- NYSDEC water program policy, often referred to as Technical and Operational Guidance Series memos (TOGS)
- USEPA Office of Water Technical Support Document for Water Quality-based Toxics Control, March 1991, Appendix E

The following is a quick guide to the references used within the factsheet:

SPDES Permit Requirements	Regulatory Reference
Anti-backsliding	6 NYCRR 750-1.10(c)
Best Management Practices (BMPS) for CSOs	6 NYCRR 750-2.8(a)(2)
Environmental Benefits Permit Strategy (EBPS)	6 NYCRR 750-1.18, NYS ECL 17-0817(4), TOGS 1.2.2 (revised January 25,2012)
Exceptions for Type I SSO Outfalls (bypass)	6 NYCRR 750-2.8(b)(2), 40 CFR 122.41
Mercury Multiple Discharge Variance	Division of Water Program Policy 1.3.10 (TOGS 1.3.10)
Mixing Zone and Critical Water Information	TOGS 1.3.1 & Amendments
PCB Minimization Program	40 CFR Part 132 Appendix F Procedure 8, 6 NYCRR 750-1.13(a) and 750-1.14(f), and TOGS 1.2.1
Pollutant Minimization Program (PMP)	6 NYCRR 750-1.13(a), 750-1.14(f), TOGS 1.2.1
Schedules of Compliance	6 NYCRR 750-1.14
Sewage Pollution Right to Know (SPRTK)	NYS ECL 17-0826-a, 6 NYCRR 750-2.7
State Administrative Procedure Act (SAPA)	State Administrative Procedure Act Section 401(2), 6 NYCRR 621.11(l)
State Environmental Quality Review (SEQR)	6 NYCRR Part 617
USEPA Effluent Limitation Guidelines (ELGs)	40 CFR Parts 405-471
USEPA National CSO Policy	33 USC Section 1342(q)
Whole Effluent Toxicity (WET) Testing	TOGS 1.3.2
General Provisions of a SPDES Permit Department Request for Additional Information	NYCRR 750-2.1(i)

The provisions of the permit are based largely upon 40 CFR 122 subpart C and 6 NYCRR Part 750 and include monitoring, recording, reporting, and compliance requirements, as well as general conditions applicable to all SPDES permits.

Outfall and Receiving Water Information

Impaired Waters

The NYS 303(d) List of Impaired/TMDL Waters (http://www.dec.ny.gov/chemical/31290.html) identifies waters where specific designated uses are not fully supported and for which the state must consider the development of a TMDL or other strategy to reduce the input of the specific pollutant(s) that restrict waterbody uses, in order to restore and protect such uses. SPDES permits must include effluent limitations necessary to implement a

WLA of an EPA-approved TMDL (6 NYCRR 750-1.11(a)(5)(ii)), if applicable. In accordance with 6 NYCRR 750-1.13(a), permittees discharging to waters which are on the list but do not yet have a TMDL developed may be required to perform additional monitoring for the parameters causing the impairment. Accurate monitoring data is needed for the development of the TMDL, and to allow the Department to accurately determine the existing capabilities of the wastewater treatment plant to assure that waste load allocations (WLAs) are allocated equitably.

Existing Effluent Quality

During development of the permit, a statistical evaluation of existing effluent quality is performed to calculate the 95th (monthly average) and 99th (daily maximum) percentiles of the existing effluent quality. That evaluation is completed in accordance with TOGS 1.2.1 and the USEPA Office of Water Technical Support Document for Water Quality-based Toxics Control, March 1991, Appendix E. When there are three or fewer non-detects, a lognormal distribution of the data is assumed, and lognormal calculations are used to determine the monthly average and daily maximum concentrations of the existing effluent. When there are greater than three non-detects, a delta-lognormal distribution is assumed, and delta-lognormal calculations are used to determine the monthly average and daily maximum pollutant concentrations. Statistical calculations are not performed for parameters where there are less than ten data points. If additional data is needed, a monitoring requirement may be specified either through routine monitoring or a short-term high intensity monitoring program. The Pollutant Summary Table identifies the number of sample data points available.

Permit Requirements

Basis for Effluent Limitations

Sections 101, 301, 304, 308, 401, 402, and 405 of the CWA and Titles 5, 7, and 8 of Article 17 ECL, as well as their implementing federal and state regulations, and related guidance, provide the basis for the effluent limitations and other conditions in the permit.

When conducting a full technical review of an existing permit, the previous permit limitations form the basis for the next permit. Existing effluent quality is evaluated against the existing permit limitations to determine if these should be continued, revised, or deleted. Generally, existing limitations are continued unless there are changed conditions at the facility, the facility demonstrates an ability to meet more stringent limitations, and/or in response to updated regulatory requirements. Pollutant monitoring data is also reviewed to determine the presence of additional contaminants that should be included in the permit based on a reasonable potential analysis to cause or contribute to a water quality standards violation.

Anti-backsliding

Anti-backsliding requirements are specified in the CWA sections 402(o) and 303(d)(4), ECL 17-0809, and regulations at 40 CFR 122.44(*l*) and 6 NYCRR 750-1.10(c) and (d). These requirements are summarized in TOGS 1.2.1. Generally, the relaxation of effluent limitations in permits is prohibited unless one of the specified exceptions applies, which will be cited on a case-by-case basis in this factsheet.

Antidegradation Policy

New York State implements the antidegradation portion of the CWA based upon two documents: (1) Organization and Delegation Memorandum #85-40, “Water Quality Antidegradation Policy” (September 9, 1985); and (2) TOGS 1.3.9, “Implementation of the NYSDEC Antidegradation Policy – Great Lakes Basin (Supplement to Antidegradation Policy dated September 9, 1985) (undated).” The permit for the facility contains effluent limitations which ensure that the existing best usage of the receiving waters will be maintained. To further support the antidegradation policy, SPDES applications have been reviewed in accordance with the State Environmental Quality Review Act (SEQR) as prescribed by 6 NYCRR Part 617.

Effluent Limitations

In developing a permit, the Department determines the technology-based effluent limitations (TBELs) and then evaluates the water quality expected to result from technology controls to determine if any exceedances of water

quality criteria in the receiving water might result. If there is a reasonable potential for exceedances of water quality criteria to occur, water quality-based effluent limitations (WQBELs) are developed. A WQBEL is designed to ensure that the water quality standards of receiving waters are met. In general, the CWA requires that the effluent limitations for a particular pollutant are the more stringent of either the TBEL or WQBEL.

Technology-based Effluent Limitations (TBELs)

CWA sections 301(b)(1)(B) and 304(d)(1), 40 CFR 133.102, ECL section 17-0509, and 6 NYCRR 750-1.11 require technology-based controls, known as secondary treatment. These and other requirements are summarized in TOGS 1.3.3. Equivalent secondary treatment, as defined in 40 CFR 133.105, allow for effluent limitations of the more stringent of the consistently achievable concentrations or monthly/weekly averages of 45/65 mg/l, and the minimum monthly average of at least 65% removal. Consistently achievable concentrations are defined in 40 CFR 133.101(f) as the 95th percentile value for the 30-day (monthly) average effluent quality achieved by the facility in a period of two years. The achievable 7-day (weekly) average value is equal to 1.5 times the 30-day average value calculated above. Equivalent secondary treatment applies to those facilities where the principal treatment process is either a trickling filter or a waste stabilization pond; the treatment works provides significant biological treatment of municipal wastewater; and the effluent concentrations consistently achievable through proper operation and maintenance of the facility cannot meet traditional secondary treatment requirements.

Other Technology Based Effluent Limitations:

There are no federal technology-based standards for toxic pollutants from POTWs. For each toxic parameter present in the discharge a Reasonable Potential Analysis is conducted. This may be a statistical analysis of existing data in accordance with TOGS 1.2.1, or an assessment of the technology employed at the facility and selection of the appropriate limitation from TOGS 1.2.1 Attachment C. Where the TBEL is more stringent than the WQBEL, the TBEL is applied as an action level in accordance with TOGS 1.3.3.

Water Quality-Based Effluent Limitations (WQBELs)

In addition to the TBELs, permits must include additional or more stringent effluent limitations and conditions, including those necessary to protect water quality. CWA sections 101 and 301(b)(1)(C), 40 CFR 122.44(d)(1), and 6 NYCRR Parts 700-704 and 750-1.11 require that permits include limitations for all pollutants or parameters which are or may be discharged at a level which may cause or contribute to an exceedance of any State water quality standard adopted pursuant to NYS ECL 17-0301. The limitations must be stringent enough to ensure that water quality standards are met and must be consistent with any applicable WLA which may be in effect through a TMDL for the receiving water. These and other requirements are summarized in TOGS 1.1.1, 1.3.1, 1.3.2, 1.3.5 and 1.3.6.

Mixing Zone Analyses

Mixing zone analyses are conducted in accordance with the following:
"EPA Technical Support Document for Water Quality-Based Toxics Control" (March 1991); EPA Region VIII's "Mixing Zones and Dilution Policy" (December 1994); NYSDEC TOGS 1.3.1, "Total Maximum Daily Loads and Water Quality-Based Effluent Limitations" (July 1996); "CORMIX v11.0" (2019).

Critical Flows

In accordance with TOGS 1.2.1 and 1.3.1, water quality-based effluent limitations are developed using dilution ratios that relate the critical low flow condition of the receiving waterbody to the critical effluent flow. The critical low flow condition used in the dilution ratio will be different depending on whether the limitations are for aquatic or human health protection. For chronic aquatic protection, the critical low flow condition of the waterbody is typically represented by the 7Q10 flow and is calculated as the lowest average flow over a 7-day consecutive period within 10 years. For acute aquatic protection, the critical low flow condition is typically represented by the 1Q10 and is calculated as the lowest 1-day flow within 10 years. However, NYSDEC considers

using 50% of the 7Q10 to be equivalent to the 1Q10 flow. For the protection of human health, the critical low flow condition is typically represented by the 30Q10 flow and is calculated as the lowest average flow over a 30-day consecutive period within 10 years. However, NYSDEC considers using 1.2 x 7Q10 to be equivalent to the 30Q10. The 7Q10 or 30Q10 flow is used with the critical effluent flow to calculate the dilution ratio. The critical effluent flow can be the maximum daily flow reported on the permit application, the maximum of the monthly average flows from discharge monitoring reports for the past three years, or the facility design flow. When more than one applicable standard exists for aquatic or human health protection for a specific pollutant, a reasonable potential analysis is conducted for each applicable standard and corresponding critical flow to ensure effluent limitations are sufficiently stringent to ensure all applicable water quality standards are met as required by 40 CFR 122.44(d)(1)(i). For brevity, the pollutant summary table reports the results of the most conservative scenario.

Reasonable Potential Analysis (RPA)

The Reasonable Potential Analysis (RPA) is a statistical estimation process, outlined in the 1991 USEPA Technical Support Document for Water Quality-based Toxics Control (TSD), Appendix E. This process uses existing effluent quality data and statistical variation methodology to project the maximum amounts of pollutants that could be discharged by the facility. This projected instream concentration (PIC) is calculated using the appropriate ratio and compared to the water quality standard (WQS). When the RPA process determines the WQS may be exceeded, a WQBEL is required. The procedure for developing WQBELs includes the following steps:

1) identify the pollutants present in the discharge(s) based upon existing data, sampling data collected by the permittee as part of the permit application or a short-term high intensity monitoring program, or data gathered by the Department;

2) identify water quality criteria applicable to these pollutants;

3) determine if WQBELs are necessary (i.e., reasonable potential analysis (RPA)). The RPA will utilize the procedure outlined in Chapter 3.3.2 of EPA's Technical Support Document (TSD). As outlined in the TSD, for parameters with limited effluent data the RPA may include multipliers to account for effluent variability; and,

4) calculate WQBELs (if necessary). Factors considered in calculating WQBELs include available dilution of effluent in the receiving water, receiving water chemistry, and other pollutant sources.

The Department uses modeling tools to estimate the expected concentrations of the pollutant in the receiving water and develop WQBELs. These tools were developed in part using the methodology referenced above. If the estimated concentration of the pollutant in the receiving water is expected to exceed the ambient water quality standard or guidance value, then there is a reasonable potential that the discharge may cause or contribute to an exceedance of any State water quality standard adopted pursuant to NYS ECL 17-0301. If a TMDL is in place, the facility's WLA for that pollutant is applied as the WQBEL.

For carbonaceous and nitrogenous oxygen demanding pollutants, the Department uses a model which incorporates the Streeter-Phelps equation. The equation relates the decomposition of inorganic and organic materials along with oxygen reaeration rates to compute the downstream dissolved oxygen concentration for comparison to water quality standards.

Whole Effluent Toxicity (WET) Testing:

WET tests use small vertebrate and invertebrate species to measure the aggregate toxicity of an effluent. There are two different durations of toxicity tests: acute and chronic. Acute toxicity tests measure survival over a 96-hour test exposure period. Chronic toxicity tests measure reductions in survival, growth, and reproduction over a 7-day exposure. TOGS 1.3.1 includes guidance for determining when aquatic toxicity testing should be included in SPDES permits. The authority to require toxicity testing is in Part 702.16(b) of Chapter X, Title 6 of the New York State Codes, Rules, and Regulations. TOGS 1.3.2 describes the

procedures which should be followed when determining whether to include toxicity testing in a SPDES permit and how to implement a toxicity testing program. Per TOGS 1.3.2, WET testing may be required when any one of the following seven criteria are applicable:

1. There is the presence of substances in the effluent for which ambient water quality criteria do not exist.
2. There are uncertainties in the development of TMDLs, WLAs, and WQBELs, caused by inadequate ambient and/or discharge data, high natural background concentrations of pollutants, available treatment technology, and other such factors.
3. There is the presence of substances for which WQBELs are below analytical detectability.
4. There is the possibility of complex synergistic or additive effects of chemicals, typically when the number of metals or organic compounds discharged by the permittee equals or exceeds five.
5. There are observed detrimental effects on the receiving water biota.
6. Previous WET testing indicated a problem.
7. POTWs which exceed a discharge of 1 MGD. Facilities of less than 1 MGD may be required to test, e.g., POTWs <1 MGD which are managing industrial pretreatment programs.

Minimum Level of Detection

Pursuant to 40 CFR 122.44(i)(1), SPDES permits must contain monitoring requirements using sufficiently sensitive test procedures approved under 40 CFR Part 136. A method is “sufficiently sensitive” when the method’s minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant parameter; or the lowest ML of the analytical methods approved under 40 CFR Part 136. The ML represents the lowest level that can be measured within specified limitations of precision and accuracy during routine laboratory operations on most effluent matrices. When establishing effluent limitations for a specific parameter (based on technology or water quality requirements), it is possible that the calculated limitation will fall below the ML established by the approved analytical method(s). In these instances, the calculated limitation is included in the permit with a compliance level set equal to the ML of the most sensitive method.

Monitoring Requirements

CWA section 308, 40 CFR 122.44(i), and 6 NYCRR 750-1.13 require that monitoring be included in permits to determine compliance with effluent limitations. Additional effluent monitoring may also be required to gather data to determine if effluent limitations may be required. The permittee is responsible for conducting the monitoring and reporting results on Discharge Monitoring Reports (DMRs). The permit contains the monitoring requirements for the facility. Monitoring frequency is based on the minimum sampling necessary to adequately monitor the facility’s performance and characterize the nature of the discharge of the monitored flow or pollutant. Variable effluent flows and pollutant levels may be required to be monitored at more frequent intervals than relatively constant effluent flow and pollutant levels (6 NYCRR 750-1.13). For industrial facilities, sampling frequency is based on guidance provided in TOGS 1.2.1. For municipal facilities, sampling frequency is based on guidance provided in TOGS 1.3.3.

Other Conditions

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Schedules of Submittals

Schedules of Submittals are used to summarize the deliverables required by the permit.