State Pollutant Discharge Elimination System (SPDES) DISCHARGE PERMIT

SIC Code:	**5411**	NAICS Code:	**445110**	SPDES Number:	**NY0103501**
Discharge Class (CL):	**02**			DEC Number:	**3-3354-00009/00003**
Toxic Class (TX):	**N**			Effective Date (EDP):	
Major-Sub Drainage Basin:	**13 - 06**			Expiration Date (ExDP):	
Water Index Number:	H-139-13-61-9-13	Item No.:	**219**	Modification Dates (EDPM):	
Compact Area:	**-**				

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. '1251 et.seq.)

PERMITTEE NAME AND ADDRESS					
Name:	**SHOP-RITE SUPERMARKETS INC**	Attention:	**John Medulla, Facility Manager**		
Street:	**176 N Main Street**				
City:	**Florida**	State:	**NY**	Zip Code:	**10921**
Email:	john.medulla@wakefern.com	Phone:			

is authorized to discharge from the facility described below:

FACILITY NAME, ADDRESS, AND PRIMARY OUTFALL														
Name:	**Warwick Shoprite Center**													
Address / Location:	**153 State Route 94S**									County:	**Orange**			
City:	**Warwick**					State:	**NY**			Zip Code:	**10990**			
Facility Location:	Latitude:	**41**	°	**14**	'	**12.7**	" N	& Longitude:	**74**	°	**22**	'	**50.7**	" W
Primary Outfall No.:	Latitude:	**41**	°	**14**	'	**13**	" N	& Longitude:	**74**	°	**22**	'	**49**	" W
Outfall Description:	**Treated Sanitary**	Receiving Water:	Unnamed Tributary to the Lower Wawayanda Creek					Class:	**C**		Standard:		**C**	

in accordance with: effluent limitations; monitoring and reporting requirements; other provisions and conditions set forth in this permit; and 6 NYCRR Part 750-1 and 750-2. The co-permittees subject to one or more conditions of this permit are listed on page 2.

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal not less than 180 days prior to the expiration date shown above.

DISTRIBUTION:
BWP Permit Coordinator (permit.coordinator@dec.ny.gov)
BWP Permit Writer
RWE
RPA

Permit Administrator:	
Address:	
Signature	Date

Contents

DEFINITIONS

TERM	DEFINITION
7-Day Geo Mean	The highest allowable geometric mean of daily discharges over a calendar week.
7-Day Average	The average of all daily discharges for each 7-days in the monitoring period. The sample measurement is the highest of the 7-day averages calculated for the monitoring period.
12-Month Rolling Average (12 MRA)	The current monthly value of a parameter, plus the sum of the monthly values over the previous 11 months for that parameter, divided by the number of months for which samples were collected in the 12-month period.
30-Day Geometric Mean	The highest allowable geometric mean of daily discharges over a calendar month, calculated as the antilog of: the sum of the log of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
Action Level	Action level means a monitoring requirement characterized by a numerical value that, when exceeded, triggers additional permittee actions and DEC review to determine if numerical effluent limitations should be imposed.
Compliance Level / Minimum Level	A compliance level is an effluent limitation. A compliance level is given when the water quality evaluation specifies a Water Quality Based Effluent Limit (WQBEL) below the Minimum Level. The compliance level shall be set at the Minimum Level (ML) for the most sensitive analytical method as given in 40 CFR Part 136, or otherwise accepted by the DEC.
Daily Discharge	The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants expressed in units of mass, the 'daily discharge' is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the 'daily discharge' is calculated as the average measurement of the pollutant over the day.
Daily Maximum	The highest allowable Daily Discharge.
Daily Minimum	The lowest allowable Daily Discharge.
Effective Date of Permit (EDP or EDPM)	The date this permit is in effect.
Effluent Limitations	Effluent limitation means any restriction on quantities, quality, rates and concentrations of chemical, physical, biological, and other constituents of effluents that are discharged into waters of the state.
Expiration Date of Permit (ExDP)	The date this permit is no longer in effect.
Instantaneous Maximum	The maximum level that may not be exceeded at any instant in time.
Instantaneous Minimum	The minimum level that must be maintained at all instants in time.
Monthly Average	The highest allowable average of daily discharges over a calendar month, calculated as the sum of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
Outfall	The terminus of a sewer system, or the point of emergence of any waterborne sewage, industrial waste or other wastes or the effluent therefrom, into the waters of the State.
Range	The minimum and maximum instantaneous measurements for the reporting period must remain between the two values shown.
Receiving Water	The classified waters of the state to which the listed outfall discharges.
Sample Frequency / Sample Type / Units	See NYSDEC's "DMR Manual for Completing the Discharge Monitoring Report for the SPDES" for information on sample frequency, type and units.

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL	LIMITATIONS APPLY	RECEIVING WATER	EFFECTIVE	EXPIRING
001	All year unless otherwise noted	NY0103501	EDP	ExDP

PARAMETER	EFFLUENT LIMITATION					MONITORING REQUIREMENTS				FN
								Location		
	Type	Limit	Units	Limit	Units	Sample Frequency	Sample Type	Inf.	Eff.	
Flow	Monthly Average	12,000	GPD			Continuous	Meter		X	
pH	Range	6.5-8.5	SU			1/day	Grab		X	
Temperature	Daily Maximum	Monitor	ºF			1/day	Grab		X	
BOD5 June 1st – October 31st	Monthly Average	12.7	mg/L	1.27	lbs/d	Quarterly	Grab	X	X	1
BOD5 November 1st – May 31st	Monthly Average	20.0	mg/L	2.0	lbs/d	Quarterly	Grab	X	X	1
Total Suspended Solids (TSS) June 1st – October 31st	Monthly Average	12.7	mg/L	1.27	lbs/d	Quarterly	Grab	X	X	1
Total Suspended Solids (TSS) November 1st – May 31st	Monthly Average	20.0	mg/L	2.0	lbs/d	Quarterly	Grab	X	X	1
Settleable Solids	Daily Maximum	0.1	mL/L			1/day	Grab		X	
Dissolved Oxygen	Daily Minimum	7.0	mg/L			Quarterly	Grab		X	
Ammonia (as N) June 1st – October 31st	Monthly Average	1.08	mg/L	0.11	lbs/d	Quarterly	Grab		X	
Ammonia (as N) November 1st – May 31st	Monthly Average	1.53	mg/L	0.15	lbs/d	Quarterly	Grab		X	

EFFLUENT DISINFECTION Required Seasonal from May 1st - October 31st	Limit	Units	Limit	Units	Sample Frequency	Sample Type	Inf.	Eff.	FN
Coliform, Fecal	30-Day Geometric Mean	200	No./ 100 mL			Quarterly	Grab		X	2
Coliform, Fecal	7-Day Geometric Mean	400	No./ 100 mL			Quarterly	Grab		X	2
Chlorine, Total Residual	Daily Maximum	0.03	mg/L			1/day	Grab		X	2,3

Footnotes Continued on Next Page

FOOTNOTES:

1. Effluent shall not exceed 15% and 15% of influent concentration values for BOD5 & TSS respectively.

2. Limits and monitoring requirements are not in effect until completion of disinfection construction. See the Schedule of Compliance on page 8.

3. Reporting for Total Residual Chlorine is only applicable if chlorine is used for disinfection, elsewhere in the treatment process, or the facility otherwise has reasonable potential to discharge chlorine.

DISCHARGE NOTIFICATION REQUIREMENTS

(a) The permittee shall install and maintain identification signs at all outfalls to surface waters listed in this permit, unless the Permittee has obtained a waiver in accordance with the Discharge Notification Act (DNA). Such signs shall be installed before initiation of any new discharge location.

(b) Subsequent modifications to or renewal of this permit does not reset or revise the deadline set forth in (a) above, unless a new deadline is set explicitly by such permit modification or renewal.

(c) The Discharge Notification Requirements described herein do not apply to outfalls from which the discharge is composed exclusively of storm water, or discharges to ground water.

(d) The sign(s) shall be conspicuous, legible and in as close proximity to the point of discharge as is reasonably possible while ensuring the maximum visibility from the surface water and shore. The signs shall be installed in such a manner to pose minimal hazard to navigation, bathing or other water related activities. If the public has access to the water from the land in the vicinity of the outfall, an identical sign shall be posted to be visible from the direction approaching the surface water.

The signs shall have **minimum** dimensions of eighteen inches by twenty-four inches (18" x 24") and shall have white letters on a green background and contain the following information:

N.Y.S. PERMITTED DISCHARGE POINT

SPDES PERMIT No.: NY_____

OUTFALL No. :____

For information about this permitted discharge contact:

Permittee Name: _____

Permittee Contact: _____

Permittee Phone: ( ) - ### - ####

OR:

NYSDEC Division of Water Regional Office Address:

NYSDEC Division of Water Regional Phone: ( ) - ### - ####

(e) Upon request, the permittee shall make available electronic or hard copies of the sampling data to the public. In accordance with the RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS page of your permit, each DMR shall be maintained (either electronically or as a hard copy) on record for a period of five years.

(f) The permittee shall periodically inspect the outfall identification sign(s) in order to ensure they are maintained, are still visible, and contain information that is current and factually correct. Signs that are damaged or incorrect shall be replaced within 3 months of inspection.

SCHEDULE OF COMPLIANCE

a) The permittee shall comply with the following schedule:

Outfall(s)	Compliance Action	Compliance Date[1]
001	DESIGN DOCUMENTS The permittee shall submit approvable[Error! Bookmark not defined.] Design Documents including a Basis of Design Report (BODR), Plans, Specifications, and Construction Schedule for the disinfection system that will ensure compliance with final effluent limitation(s) for *Fecal Coliform and Total Residual Chlorine*.	EDP + 12 Months
001	COMPLETE CONSTRUCTION The permittee shall provide a Construction Completion Certification[2] to the DEC (send to the Regional Water Engineer and NetDMR@dec.ny.gov) that the disposal system has been fully completed in accordance with the approved Design Documents.	EDP + 54 Months
001	COMMENCE OPERATION Following receipt of DEC acceptance of the Construction Completion Certification, the permittee shall comply with the final effluent limitation(s) described in this permit for *Fecal Coliform and Total Residual Chlorine*.	Upon Department Acceptance

[1] 6 NYCRR 750-1.14 (a)
[2] 6 NYCRR 750-2.10 (c)

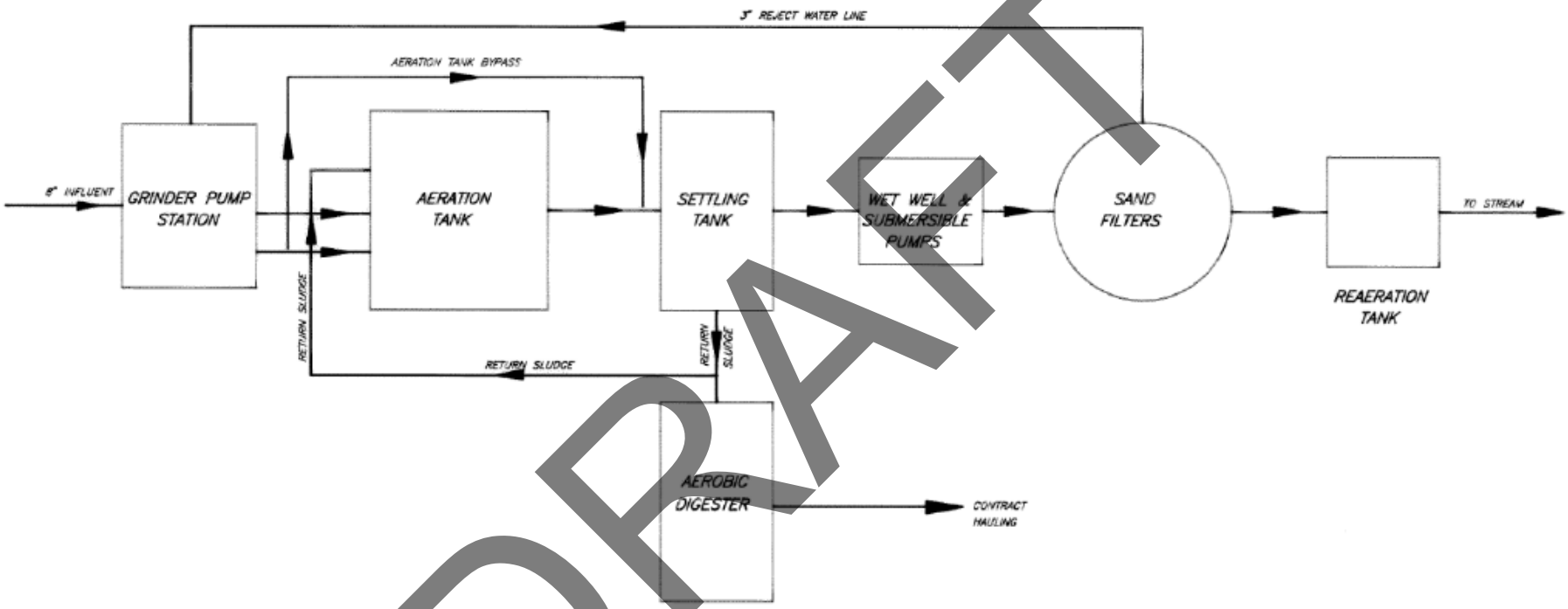
b) The permittee shall submit a Report of Non-Compliance Event form with each of the above schedule dates no later than 14 days following each elapsed date, unless conditions require more immediate notice as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2. All notifications shall be sent to the locations listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS. Each notice of non-compliance shall include the following information:

1. A short description of the non-compliance;
2. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirements without further delay and to limit environmental impact associated with the non-compliance;
3. Any details which tend to explain or mitigate an instance of non-compliance; and
4. An estimate of the date the permittee will comply with the elapsed schedule requirement and an assessment of the probability that the permittee will meet the next scheduled requirement on time.

c) The permittee shall submit copies of any document required by the above schedule of compliance to the DEC Regional Water Engineer and to the Bureau of Water Permits.

MONITORING LOCATIONS

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the locations(s) specified below:



GENERAL REQUIREMENTS

A. The regulations in 6 NYCRR Part 750 are hereby incorporated by reference and the conditions are enforceable requirements under this permit. The permittee shall comply with all requirements set forth in this permit and with all the applicable requirements of 6 NYCRR Part 750 incorporated into this permit by reference, including but not limited to the regulations in paragraphs B through I as follows:

B. General Conditions

1.	Duty to comply	6 NYCRR 750-2.1(e) & 2.4
2.	Duty to reapply	6 NYCRR 750-1.16(a)
3.	Need to halt or reduce activity not a defense	6 NYCRR 750-2.1(g)
4.	Duty to mitigate	6 NYCRR 750-2.7(f)
5.	Permit actions	6 NYCRR 750-1.1(c), 1.18, 1.20 & 2.1(h)
6.	Property rights	6 NYCRR 750-2.2(b)
7.	Duty to provide information	6 NYCRR 750-2.1(i)
8.	Inspection and entry	6 NYCRR 750-2.1(a) & 2.3

C. Operation and Maintenance

1.	Proper Operation & Maintenance	6 NYCRR 750-2.8
2.	Bypass	6 NYCRR 750-1.2(a)(17), 2.8(b) & 2.7
3.	Upset	6 NYCRR 750-1.2(a)(94) & 2.8(c)

D. Monitoring and Records

1.	Monitoring and records	6 NYCRR 750-2.5(a)(2), 2.5(a)(6), 2.5(c)(1), 2.5(c)(2), & 2.5(d)
2.	Signatory requirements	6 NYCRR 750-1.8 & 2.5(b)

E. Reporting Requirements

1.	Reporting requirements	6 NYCRR 750-2.5, 2.7 & 1.17
2.	Anticipated noncompliance	6 NYCRR 750-2.7(a)
3.	Transfers	6 NYCRR 750-1.17
4.	Monitoring reports	6 NYCRR 750-2.5(e)
5.	Compliance schedules	6 NYCRR 750-1.14(d)
6.	24-hour reporting	6 NYCRR 750-2.7(c) & (d)
7.	Other noncompliance	6 NYCRR 750-2.7(e)
8.	Other information	6 NYCRR 750-2.1(f)

F. Planned Changes

1. In accordance with 6 NYCRR 750-2.7, the permittee shall give notice to the DEC at least 45 days prior to planned physical alterations or additions to the permitted facility when:

   a. The alteration or addition to the permitted facility may meet any of the criteria for determining whether facility is a new source in 40 CFR §122.29(b); or
   b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject either to effluent limitations in the permit, or to notification requirements under 40 CFR §122.42(a)(1); or
   c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

In addition to the DEC, the permittee shall submit a copy of this notice to the United States Environmental Protection Agency at the following address: U.S. EPA Region 2, Clean Water Regulatory Branch, 290 Broadway, 24th Floor, New York, NY 10007-1866.

GENERAL REQUIREMENTS (continued)

G. Sludge Management
The permittee shall comply with all applicable requirements of 6 NYCRR Part 360 series.

H. SPDES Permit Program Fee
The permittee shall pay to the Department an annual SPDES permit program fee within 30 days of the date of the first invoice, unless otherwise directed by the DEC, and shall comply with all applicable requirements of ECL 72-0602 and 6 NYCRR Parts 480, 481 and 485. Note that if there is inconsistency between the fees specified in ECL 72-0602 and 6 NYCRR Part 485, the ECL 72-0602 fees govern.

I. Water Treatment Chemicals (WTCs)
New or increased use and discharge of a WTC requires prior DEC review and authorization. At a minimum, the permittee must notify the DEC in writing of its intent to change WTC use by submitting a completed *WTC Notification Form* for each proposed WTC. The DEC will review that submittal and determine if a SPDES permit modification is necessary or whether WTC review and authorization may proceed outside of the formal permit administrative process. The majority of WTC authorizations do not require SPDES permit modification. In any event, use and discharge of a WTC shall not proceed without prior authorization from the DEC. Examples of WTCs include biocides, coagulants, conditioners, corrosion inhibitors, defoamers, deposit control agents, flocculants, scale inhibitors, sequestrants, and settling aids.

1. WTC use shall not exceed the rate explicitly authorized by this permit or otherwise authorized in writing by the DEC.
2. The permittee shall maintain a logbook of all WTC use, noting for each WTC the date, time, exact location, and amount of each dosage, and, the name of the individual applying or measuring the chemical. The logbook must also document that adequate process controls are in place to ensure that excessive levels of WTCs are not used.
3. The permittee shall submit a completed WTC Annual Report Form each year that they use and discharge WTCs. This form shall be submitted in electronic format and attached to either the December DMR or the annual monitoring report required below. The *WTC Notification Form and WTC Annual Report Form* are available from the DEC's website at: http://www.dec.ny.gov/permits/93245.html

RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS

A. The monitoring information required by this permit shall be retained for a period of at least five years from the date of the sampling for subsequent inspection by the DEC or its designated agent.

B. Annual SPDES Monitoring Reports: An annual report shall be submitted to DEC by February 1st each year. The report shall summarize information for January to December of the previous year and shall be submitted electronically at dow.r3@dec.ny.gov, or in hardcopy format, utilizing the SPDES Annual Report Form available on the DEC's website.

Hard copy submission of the Annual Report shall be submitted to the Regional Water Engineer at the address below:

Department of Environmental Conservation
Regional Water Engineer, Region 3
220 White Plains Road, Suite 110, Tarrytown, New York, 10591, Phone: (914) 803-8157

C. Additional information required to be submitted by this permit shall be summarized and reported to the Regional Water Engineer and Bureau of Water Permits at the following addresses:

Department of Environmental Conservation
Division of Water, Bureau of Water Permits
625 Broadway, Albany, New York 12233-3505 Phone: (518) 402-8111

Department of Environmental Conservation
Regional Water Engineer, Region 3
220 White Plains Road, Suite 110, Tarrytown, New York, 10591, Phone: (914) 803-8157

D. Schedule of Additional Submittals: ***The permittee shall submit the following information to the Regional Water Engineer and to the Bureau of Water Permits, unless otherwise instructed:***

SCHEDULE OF ADDITIONAL SUBMITTALS		
Outfall(s)	**Required Action**	**Due Date**
001	WATER TREATMENT CHEMICAL (WTC) ANNUAL REPORT FORM The permittee shall submit a completed WTC Annual Report Form each year that Water Treatment Chemicals are used. The form shall be submitted with the annual monitoring report.	February 1 each year with Annual Monitoring Report

Unless noted otherwise, the above actions are one-time requirements.

E. Monitoring and analysis shall be conducted using sufficiently sensitive test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

F. More frequent monitoring of the discharge(s), monitoring point(s), or waters of the State than required by the permit, where analysis is performed by a certified laboratory or where such analysis is not required to be performed by a certified laboratory, shall be included in the calculations and recording of the data on the corresponding DMRs.

G. Calculations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

H. Unless otherwise specified, all information recorded on the DMRs shall be based upon measurements and sampling carried out during the most recently completed reporting period.

I. Any laboratory test or sample analysis required by this permit for which the State Commissioner of Health issues certificates of approval pursuant to section 502 of the Public Health Law shall be conducted by a laboratory which has been issued a certificate of approval. Inquiries regarding laboratory certification should be directed to the New York State Department of Health, Environmental Laboratory Accreditation Program.

SPDES Permit Fact Sheet
Shop-Rite Supermarkets Inc
Warwick Shoprite Center
NY0103501

Contents

Summary of Permit Changes

A State Pollutant Discharge Elimination System (SPDES) permit has been drafted for the Warwick Shoprite Center. The changes to the permit are summarized below:

- Updated permit format, definitions, and general conditions
- Updated outfall coordinates
- Changed limit for Total Suspended Solids from 10 mg/L to seasonal limits of 12.7 mg/L (June 1 – Oct 31) and 20 mg/L (Nov 1 – May 31)
- Changed limit for CBOD from 5 mg/L to seasonal limits of BOD5 12.7 mg/L (June 1 – Oct 31) and 20 mg/L (Nov 1 – May 31)
- Changed limit for Nitrogen, Ammonia (as N) from 2.3 mg/L (Nov 1 – May 31) 1.5 mg/L
- Added requirement for seasonal effluent disinfection
- Added daily max effluent limitation for total residual chlorine (TRC) of 0.03 mg/L

This fact sheet summarizes the information used to determine the effluent limitations (limits) and other conditions contained in the permit. General background information including the regulatory basis for the effluent limitations and other conditions are in the Appendix linked throughout this fact sheet.

Administrative History

4/1/1993	The last full technical review was performed and the SPDES permit became effective with a new five-year term and expiration date of 4/1/1998. The 1993 permit, along with all subsequent modifications,has formed the basis of this permit. The permit was administratively renewed in 1998 and again in 2002.
5/1/1998	The permit was administratively renewed
5/1/2003	The permit was administratively renewed
5/1/2004	The Department initiated a permit modification to include changes in 6 NYCRR Part 750
6/1/2009	The Big V Shop Rite Corp Inc submitted a request to modify the permit to transfer ownership to Shop-Rite Supermarkets Inc.
10/01/2014	The SPDES Permit was administratively renewed
10/01/2019	The SPDES Permit was administratively renewed
9/30/2024	The SPDES permit expired.
1/22/2025	The Shop-Rite Supermarkets Inc submitted a new PCI form to renew the expired permit.
3/19/2025	NYSDEC issued a Request for Additional Information
4/28/25	The Shop-Rite Supermarkets submitted a response to the Request for Additional Information.

Facility Information

This facility is a private facility that receives flow from domestic users, with effluent consisting of domestic wastewater. The collection system consists of separate sewers. The facility does not have any significant industrial users (SIUs).

The current 12,000 GPD treatment plant consists of:

- Grinder Pump Station
- Aeration Tank
- Settling Tank
- Intermediate Wet Wells
- Polishing Sand Filter
- Reaeration Tank

Sludge is digested aerobically and hauled out by a contracted vendor. Sludge is either received from the settling tank or returned to the aeration tank

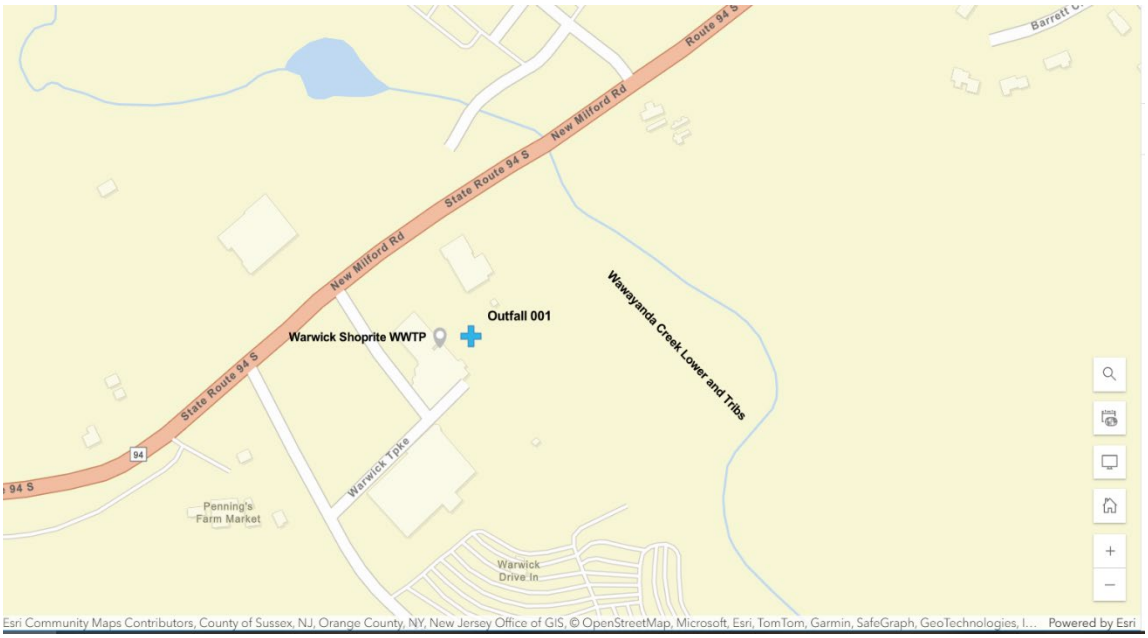
The primary outfall (Outfall 001) is a 6-inch SDR pipe located within concrete structure that discharges into the unnamed tributary to the Wawayanda Creek.

The facility is planning the following upgrades/improvements:

- The facility is planning on replacing the sand filter to address Settleable Solids effluent violations in addition to installing disinfection.

Site Overview


Shop-Rite Supermarkets Inc
Warwick Shoprite Center Wastewater Treatment Plant
Legend
Warwick Shoprite WWTP
Pin Street at Warwick
Leo Kaytes Ford
94
Warwick Shoprite WWTP
ShopRite of Warwick
Pennings Farm Market
Warwick Turnpike
Google Earth
Image © 2025 Airbus
500 ft
N


Route 94 S
New Milford Rd
State Route 94 S
Outfall 001
Warwick Shoprite WWTP
Wawayanda Creek Lower and Tribs
Warwick Tpke
Penning's Farm Market
Warwick Drive-In
Esri Community Maps Contributors, County of Sussex, NJ, Orange County, NY, New Jersey Office of GIS, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, I...
Powered by Esri

Existing Effluent Quality

The Pollutant Summary Table presents the existing effluent quality and effluent limitations. The existing effluent quality was determined from Discharge Monitoring Reports and the application submitted by the permittee for the period 6/1/2023 to 12/31/2023.

Receiving Water Information

The facility discharges via the following outfalls:

Outfall No.	SIC Code	Wastewater Type	Receiving Water
001	4952	Treated sanitary sewage	Unnamed Tributary to the Lower Wawayanda Creek, Class C

See the Outfall and Receiving Water Summary Table and Appendix for additional information.

Impaired Waterbody Information

The Unnamed Tributary to the Lower Wawayanda Creek segment (PWL No. 1306-0079) is not listed on the 2022 New York State Section 303(d) List of Impaired/TMDL Waters, and therefore, there are no applicable wasteload allocations (WLAs) for this discharge.

Critical Receiving Water Data

Reach Description: The treated wastewater is to a ditch, which is connected to an un-named tributary of Wawayanda Creek, classified as a Class C stream. The Wawayanda Creek is classified as a class C(T) stream.There is no other upstream discharge which could have any residual impact on the WQ of the downstream waters or dischargers. In addition, no RIBS stations or any stream gage stations are available in the area for determining ambient conditions (pH, temperature, or flow, etc.).The length and slope of the ditch cannot be estimated as these are not shown on the USGS map. The ditch length is less than 500 feet and will provide negligible impact on the dissolved oxygen, therefore it was excluded from the water quality model (WQ Model).

The WQ model consisting of only one reach was developed starting from the confluence of the ditch and the un-named tributary and terminating at the confluence with the Wawayanda Creek. The slope of the reach is considered as mildly steep with good aeration capacity to oxidize the organic pollutants (BOD5) to meet the Class C dissolved oxygen standard of 4.0 mg/l.

The toxic chemicals have immediate impacts on the receiving stream habitat and therefore effluent limits for toxic pollutants, specifically ammonia and total residual chlorine, have been applied as end-of-pipe limitations without the benefit of dilution.

It is important to note that in the past, effluent limits for this facility were developed without the benefit a WQ model and intermittent effluent limits (ISELs) were recommended for both toxics and dissolved oxygen. Now a WQ model has been developed and modeling results show that less stringent effluent limits for dissolved oxygen are protective of the receiving waterbody.

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

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

None of the seven criteria that are indicative of potential toxicity are applicable to this facility; therefore, WET testing has not been included in the permit. Appendix Link

Anti-backsliding

Based on new information, water quality modeling was performed and the new BOD5 and TSS limits are adequate to meet the applicable dissolved oxygen standards of 3.0 and 4.0 mg/l associated water class of D and C as per 6 NYCRR Part 750-1.10(C)(2i).

Appendix Link

Antidegradation

The permit contains effluent limitations which ensure that the best usages of the receiving waters will be maintained. The Notice of Complete Application published in the Environmental Notice Bulletin contains information on the State Environmental Quality Review (SEQR)[1] 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, unless a waiver is obtained. This requirement has been continued from the previous permit.

[1] As prescribed by 6 NYCRR Part 617

Additionally, the permit contains a requirement to make the Monthly Operating Report sampling data available to the public upon request. This requirement is new.

Schedule of Compliance

A Schedule of Compliance has been included[2] for the following items (Appendix Link):

- Submittal of approvable engineering design documents, including a basis of design report, with the details of the upgrades needed to comply with the final effluent limitations. The effluent limitation for total residual chlorine and Fecal Coliform at Outfall 001 is a new requirement and the permittee cannot immediately comply with the WQBEL.

Schedules of compliance are included in accordance with 40 CFR Part 132 Attachment F, Procedure 9, 40 CFR 122.47 and 6 NYCRR 750-1.14. Schedules of compliance are intended to, in the shortest reasonable time, achieve compliance with applicable effluent standards and limitations, water quality standards, and other applicable requirements. Where the time for compliance is more than nine months, the schedule of compliance must include interim requirements and dates for their achievement. If the time necessary to complete the interim milestones is more than nine months, and not readily divisible into stages for completion, progress reports must be required.

[3] Existing Effluent Quality: Unless otherwise stated, Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

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	41° 14' 13" N	74° 22' 49" W	Unnamed Tributary to the Lower Wawayanda Creek	C	H-139-13-61-9-13 PWL: NA	13/06	-	<0.1 cfs (Intermittent stream)			0.0120	1:1		

POLLUTANT SUMMARY TABLE: Outfall 001

Outfall #	001	**Description of Wastewater:** Treated Sanitary Sewage													
		Type of Treatment: Grinder Pump Station, Aeration Tank, Settling Tank, Intermediate Wet Wells, Polishing Sand Filter, Reaeration Tank													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[3]	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis		
General Notes: Existing discharge data from 06/2023 to 12/2023 was obtained from the application provided by the permittee. All applicable water quality standards were reviewed for development of the WQBELs. The standard and WQBEL shown below represent the most stringent.															
Flow Rate	GPD	30 Day Avg	12,000	7,100 Actual Average	-	12,000	Design Flow	No alterations that will impair the waters for their best usages.					703.2	-	Design Flow
	Consistent with 40 CFR Part 133.102 and TOGS 1.3.3, a monthly average flow limitation equal to the average daily design capacity of the treatment plant has been specified.														
pH	SU	Minimum	6.5	6.4 Actual Min	-	6.0	40 CFR 133.102	-	-	6.5 – 8.5	Range	6.5 - 8.5	703.3	-	WQBEL
		Maximum	8.5	7.5 Actual Max	-	9.0									
	Consistent with TOGS 1.3.3 for POTWs, TBELs reflect secondary treatment standards. Given the available dilution, an effluent limitation equal to the WQS is appropriate.														
Temperature	°F	30 Day Avg	Monitor	78.08 Actual Max	-	-	750-1.13 Monitor	-	The water temperature at the surface of a stream shall not be raised to more than 90F at any point and... shall not be raised or lowered to more than 5F over the temperature that existed before the addition				704.2	-	Monitor
	Consistent with 6 NYCRR 750-1.13(a), monitoring is required and may be used to inform future permitting decisions. This requirement has been continued from the previous permit.														

[3] Existing Effluent Quality: Unless otherwise stated, Daily Max = 99% lognormal; Monthly Avg = 95% lognormal (for datasets with ≤3 nondetects); Daily Max = 99% delta-lognormal; Monthly Avg = 95% delta-lognormal (for datasets with >3 nondetects)

Outfall #	001	**Description of Wastewater:** Treated Sanitary Sewage													
		Type of Treatment: Grinder Pump Station, Aeration Tank, Settling Tank, Intermediate Wet Wells, Polishing Sand Filter, Reaeration Tank													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[3]	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis		
Dissolved Oxygen (DO) Year-round	mg/L	Daily Min	7.0	8.0	-	-	-	-	>4.0	4.0 mg/L		7.0	703.3	-	WQBEL
	The model showed that a WQBEL for DO is necessary to maintain downstream water quality.														
5-day Biochemical Oxygen Demand (BOD_5) Summer June 1 – Oct 31	mg/L	Daily Max	5	3	-	30	40 CFR 133.102	-	DO= 4.0 mg/l Surrogate Standard			12.7	703.3	-	WQBEL
	Lbs/d	Daily Max	0.5	-	-	45	40 CFR 133.102					1.27			
	lbs/d	Monthly Avg	-	-	-	-	-					-			
		7 Day Avg	-	-	-	-	-					-			
	% Rem	Minimum	-	-	-	85	40 CFR 133.102					-			
	Consistent with 40 CFR Part 133.102 and TOGS 1.3.3 for POTWs, TBELs reflect secondary treatment standards. Reach Description: See Reach Description section of this document. WQ Model: The downstream DO concentration was modeled using the Streeter-Phelps equations with the following inputs: Effluent DO = 7.0 mg/, Effluent UOD = 23.93 mg/L, Effluent BOD5 =12.7 mg/L, Effluent NOD = 4.93 mg/L (equivalent to the toxic ammonia limit of 1.08 mg/l as Nitrogen). The model showed that WQBELs for DO, BOD/CBOD, and Ammonia are necessary to maintain downstream water quality.														

Outfall #	001	**Description of Wastewater:** Treated Sanitary Sewage													
		Type of Treatment: Grinder Pump Station, Aeration Tank, Settling Tank, Intermediate Wet Wells, Polishing Sand Filter, Reaeration Tank													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality[3]	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis		
5-day Biochemical Oxygen Demand (BOD5) Winter Nov 1 – May 31	mg/L	Daily Max	5	3	-	30	40 CFR 133.102	-	DO= 4.0 mg/l Surrogate Standard			20.0	703.3		WQBEL
	lbs/d	Daily Max	0.5	-	-	45	40 CFR 133.102					2.0			
	lbs/d	Monthly Avg	-	-	-	-	-					-			
		7 Day Avg	-	-	-	-	-					-			
	% Rem	Minimum	-	-	-	85	40 CFR 133.102					-			
	WQ Model: The downstream DO concentration was modeled using the Streeter-Phelps equations with the following inputs: Effluent DO = 7.0 mg/, Effluent UOD = 37.0 mg/L, Effluent BOD5 =20.0 mg/L, Effluent NOD = 7.0 mg/L (equivalent to the toxic ammonia limit of 1.53 mg/ as Nitrogen). The model showed that WQBELs for DO, BOD/CBOD, and Ammonia are necessary to maintain downstream water quality.														
Total Suspended Solids (TSS) Summer/winter June 1 – Oct 31/ Nov 1 – May 31	mg/L	Daily Max	10.0	9.0	-	30	40 CFR 133.102	None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages. 703.2				12.7/20 DM/BPJ	703.2	-	WQBEL
	lbs/d	Daily Max	1.0	-	-	45	40 CFR 133.102					1.27/2.0 DM/BPJ			
	mg/L	Daily Max	-	-	-	-	-								
		7 Day Avg	-	-	-	-	-								
	% Rem	Minimum	-	-	-	85	40 CFR 133.102								
	Consistent with 40 CFR Part 133.102 and TOGS 1.3.3 for POTWs, TBELs reflect secondary treatment standards. Given the available dilution, an effluent limitation equal to the TBEL, and consistent with TOGS 1.3.3, is protective of water quality standards. WQBELs for TSS are set the WQBEL of BOD5 consistent with ratio between BOD vs TSS for secondary treatment level based effluent limits.														
Settleable Solids	mL/L	Daily Max	0.1	<0.1	-	0.1	TOGS 1.3.3	-	None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages				703.2	-	TBEL
	Consistent with TOGS 1.3.3 the effluent limitation is equal to the TBEL of 0.1 mL/L for POTWs providing secondary treatment and filtration. Given that adequate dilution is available the TBEL is protective of the WQS.														
Nitrogen, Ammonia (as N) SUMMER 6/1 – 10/31	mg/L	Monthly Avg	1.1	-	-	-	-	-	1.08	1.08	A(C)	1.08	703.5	-	WQBEL
	lb/d	Monthly Avg	-	-	-	-	-	-	-	-	-	0.11			
	The WQS for Ammonia was determined from TOGS 1.1.1 for a pH of 7.8 (Basin specific analysis) and a summer temperature of 25 °C. The temperature of the receiving waterbody was a default value and consistent with TOGS 1.3.1E.														

Outfall #	001	**Description of Wastewater:** Treated Sanitary Sewage														
		Type of Treatment: Grinder Pump Station, Aeration Tank, Settling Tank, Intermediate Wet Wells, Polishing Sand Filter, Reaeration Tank														
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement	
			Permit Limit	Existing Effluent Quality[3]	# of Data Points Detects / Non-Detects	Limit	Basis	Ambient Bkgd. Conc.	Projected Instream Conc.	WQ Std. or GV	WQ Type	Calc. WQBEL	Basis			
Nitrogen, Ammonia (as N) WINTER 11/1 – 5/31	mg/L	Monthly Avg	2.3	0.36	-	-	-	-	1.53	1.53	A(C)	1.53	703.5	-	WQBEL	
	lb/d	Monthly Avg		-	-	-	-	-	-	-	-	0.15				
	The WQS for Ammonia was determined from TOGS 1.1.1 for a pH of 7.8 (Basin specific analysis) and a winter temperature of 15°C. The temperature of the receiving waterbody was default value (BPJ).															
	lb/d	Monthly Avg	-	-	-	-	TOGS 1.3.6									
	lb/mon	Month Load	-	-	-	-	TOGS 1.3.6									
	lb/yr	12 Month Load	-	-	-	-	TOGS 1.3.6									
Coliform, Fecal	#/100 ml	30d Geo Mean	-	-	- /-	**200**	TOGS 1.3.3	-	The monthly geometric mean, from a minimum of five examinations, shall not exceed 200.				703.4	-	TBEL	
		7d Geo Mean	-	-	- /-	**400**	TOGS 1.3.3	-								
	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 have been specified.															
Total Residual Chlorine (TRC)	mg/L	Daily Max	-	-	- /-	2.0	TOGS 1.3.3	-	-	0.005	A(C)	0.005	703.5	0.03	ML	
	Seasonal effluent disinfection has been added to the permit. The WQBEL equal to WQ standard is applicable, but this limit is less than the TBEL and less than the minimum level of detection. Therefore, an effluent limit equal to the minimum level of detection of 0.030 mg/L is appropriate.															

Appendix: Regulatory and Technical Basis of Permit Authorizations

The Appendix is meant to supplement the fact sheet for multiple types of SPDES permits. Portions of this Appendix may not be applicable to this specific permit.

Regulatory References

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. Below are the most common citations for the requirements included in SPDES permits:

- 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, referred to as Technical and Operational Guidance Series (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 fact sheet:

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 (DOW 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)

Outfall and Receiving Water Information

Impaired Waters

The NYS 303(d) List of Impaired/TMDL Waters identifies waters where specific best usages are not fully supported. The state must consider the development of a Total Maximum Daily Load (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 waste load allocation (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

to determine the existing capabilities of the wastewater treatment plants and to assure that WLAs are allocated equitably.

Existing Effluent Quality

The existing effluent quality is determined from a statistical evaluation of effluent data 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 (TSD). The existing effluent quality is equal to the 95th (monthly average) and 99th (daily maximum) percentiles of the lognormal distribution of existing effluent data. 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 effluent limitations form the basis for the next permit. Existing effluent quality is evaluated against the existing effluent 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, 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). 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 fact sheet. Consistent with current case law[4] and USEPA interpretation[5] anti-backsliding requirements do not apply should a revision to the final effluent limitation take effect before the scheduled date of compliance for that final effluent limitation.

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

[4] American Iron and Steel Institute v. Environmental Protection Agency, 115 F.3d 979, 993 n.6 (D.C. Cir. 1997)
[5] U.S. EPA, Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; 65 Fed. Reg. 31682, 31704 (May 18, 2000); Proposed Water Quality Guidance for the Great Lakes System, 58 Fed. Reg. 20802, 20837 & 20981 (April 16, 1993)

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. Where the TBEL is more stringent than the WQBEL, the TBEL is applied as a limit in accordance with 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. There are no federal technology-based standards for toxic pollutants from POTWs. A statistical analysis of existing effluent data, as described in TOGS 1.2.1, may be used to establish other performance-based TBELs.

Technology-based Effluent Limitations (TBELS) for Discharges to Groundwater

TBELS aim to prevent pollution by requiring a minimum level of effluent quality that is attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States. ECL section 17-0509, and 6 NYCRR 750-1.11 require technology-based controls for POTWs discharging to surface waters, known as secondary treatment. The applicable regulations are specified in 40 CFR 133.102 and 6 NYCRR 750-1.11. These and other requirements are summarized in TOGS 1.3.3 and below:

- Secondary treatment requirements of 40 CFR Part 133 will typically not be included unless the facility discharges to a surface water prior to entering the groundwater or if, in the permit writer's judgement, limitations are necessary to prevent nuisance conditions or enhance plant operation.
- Since nitrogen is a component of all domestic wastewater, permits for facilities discharging 30,000 GPD or greater include effluent limitations for Nitrate of 20 mg/L (as N). Groundwater discharges in Nassau and Suffolk Counties are required to achieve an effluent standard for Total Nitrogen of 10 mg/L (as N).
- Disinfection will typically not be required for discharges to groundwater unless local public health concerns exist due to exposure or contact with effluent. When this occurs, disinfection requirements and effluent limitations for chlorine residual are developed in accordance with TOGS 1.3.3.

Technology-based Effluent Limitations (TBELS) for Industrial Facilities to Groundwater

TBELS aim to prevent pollution by requiring a minimum level of effluent quality that is attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States. Requirements for discharges from industrial facilities to groundwater are summarized in TOGS 1.2.1. In accordance with TOGS 1.2.1, for facilities discharging to groundwater:

- Discharges will typically be limited to the more stringent of the groundwater effluent standards in 6 NYCRR 703.6 or the applicable treatment technology listed in TOGS 1.2.1 Attachment (C).
- Discharges from industrial facilities which contain nitrogen or nitrogen compounds include effluent limitations for Nitrate of 20 mg/L (as N). Groundwater discharges in Nassau and Suffolk Counties are required to achieve an effluent standard for Total Nitrogen of 10 mg/L (as N).
- Disinfection will typically not be required for discharges to groundwater unless local public health concerns exist due to exposure or contact with effluent.

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 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. Additionally, 6 NYCRR Part 701.1 prohibits the discharge of pollutants that will cause impairment of the best usages of the receiving water as specified by the water classifications at the location of discharge and at other locations that may be affected by such discharge. Water quality standards can be found under 6 NYCRR Parts 700-704. The limitations must be stringent enough to ensure that water quality standards are met at the point of discharge and in downstream waters 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. The DEC considers a mixing zone analysis, critical flows, and reasonable potential analysis when developing a WQBEL.

Mixing Zone Analyses

In accordance with TOGS 1.3.1., the DEC may perform additional analysis of the mixing condition between the effluent and the receiving waterbody. Mixing zone analyses using plume dispersion modeling 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, WQBELs 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 DEC;

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 DEC 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 (i.e. numeric interpretation of a narrative water quality standard), 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 DEC 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.

The Division of Water has been using the TMDL approach in permit limit development for the control of toxic substances. Since the early 1980's, the loading capacity for specific pollutants has been determined for each drainage basin. Water quality-limiting segments and pollutants have been identified, TMDLs, wasteload allocations and load allocations have been developed, and permits with water quality-based effluent limits have been issued. In accordance with TOGS 1.3.1, the Division of Water implements a Toxics Reduction Strategy which is committed to the application of the TMDL process using numeric, pollutant-specific water quality standards through the Watershed Approach. The Watershed Approach accounts for the cumulative effect of multiple discharges of conservative toxic pollutants to ensure water quality standards are met in downstream segments.

Water Quality-Based Effluent Limitations (WQBELs) for Discharges to Groundwater

The procedure for developing WQBELs includes identifying the pollutants present in the discharge(s), identifying water quality criteria applicable to these pollutants, determining if WQBELs are necessary (reasonable potential), and calculating the WQBELs. For groundwater discharges, if the expected concentration of the pollutant of concern in the receiving water may exceed the ambient groundwater quality standard or guidance value, then there is reasonable potential that the discharge may cause or contribute to a violation of the water quality, and a WQBEL for the pollutant is required.

WQBELs for groundwater discharges are based on the groundwater effluent limits set forth in 6 NYCRR Part 703 (Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations) except as noted in 6 NYCRR 702.21. TOGS 1.1.1 provides a listing of groundwater effluent limitations for substances having an ambient water quality standard or guidance value. Groundwater effluent limitations are applied at the point of discharge to the groundwater distribution system.

For land treatment systems with no accessible final sampling points, such as constructed wetland treatment systems or buried sand filters, permit limitations for groundwater discharges are typically based on ambient groundwater quality standards or guidance values applied at representative down gradient monitoring well(s). Limitations at the downgradient sampling point are set at the Class GA ambient

groundwater standards, rather than at the groundwater effluent limits promulgated under 6 NYCRR 703.6, as compliance is determined based upon the concentrations present in the downgradient groundwater monitoring well at the groundwater interface.

Class GA standards are established for the protection of sources of drinking water designated as Health (Water Source) or H(WS) in TOGS 1.1.1. As such, effluent limitations based on aquatic life criteria and WET testing requirements are not applicable to groundwater discharges.

Minimum Level of Detection

Pursuant to 40 CFR 122.44(i)(1)(iv) and 6 NYCRR 750-2.5(d), 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), 6 NYCRR 750-1.13, and 750-2.5 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

Schedules of Compliance

Schedules of compliance are included in accordance with 40 CFR Part 132 Attachment F, Procedure 9, 40 CFR 122.47 and 6 NYCRR 750-1.14. Schedules of compliance are intended to, in the shortest reasonable time, achieve compliance with applicable effluent standards and limitations, water quality standards, and other applicable requirements. Where the time for compliance is more than nine months, the schedule of compliance must include interim requirements and dates for their achievement. If the time necessary to complete the interim milestones is more than nine months, and not readily divisible into stages for completion, progress reports must be required.

Schedule(s) of Additional Submittals

Schedules of Additional Submittals are used to summarize the deliverables required by the permit not identified in a separate Schedule of Compliance.