



Department of
Environmental
Conservation

State Pollutant Discharge Elimination System (SPDES) DISCHARGE PERMIT

SIC Code:	8731	NAICS Code:	541715, 541714	SPDES Number:	NY0296520
Discharge Class (CL):	01	DEC Number:	5-0930-00001/00035		
Toxic Class (TX):	T	Effective Date (EDP):	EDP		
Major-Sub Drainage Basin:	10 - 02	Expiration Date (ExDP):	ExDP		
Water Index Number:	C-3-2	Item No.:	830 - 18	Modification Dates (EDPM):	
Compact Area:	NEIWPCC				

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:	Northstar 41 LLC			Attention:	Stephen Podd, Director	
Street:	1 Lincoln Boulevard					
City:	Rouses Point			State:	NY	Zip Code: 12979
Email:	stephen@northstarllc.net			Phone:	(518) 297-4000	

is authorized to discharge from the facility described below:

FACILITY NAME, ADDRESS, AND PRIMARY OUTFALL										
Name:	Northstar Technology Center									
Address / Location:	641 Ridge Road						County:	Clinton		
City:	Chazy				State:	NY		Zip Code:	12921	
Facility Location:	Latitude:	44 °	53 '	33 " N	& Longitude:	73 °	28 '	13 " W		
Primary Outfall No.:	001	Latitude:	44 °	54 '	14 " N	& Longitude:	73 °	28 '	50 " W	
Wastewater Description:	Treated sanitary and animal wastes, non-contact cooling tower blowdown, water treatment backwash	Receiving Water:	Corbeau Creek		NAICS:	541715, 541714		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.

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:

CO BWP - Permit Coordinator
BWP – Permit Writer
CO BWC - SCIS
RWE
RPA
EPA Region II

Deputy Regional Permit Administrator:	Erin M. Donhauser		
Address:	1115 NYS RTE 86, Ray Brook, NY 12977		
Signature:		Date:	/ /

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 department 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 Department.
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	DESCRIPTION	RECEIVING WATER	EFFECTIVE	EXPIRING
001	Treated sanitary and animal wastes, non-contact cooling tower blowdown, water treatment backwash	Corbeau Creek	EDP	ExDP

PARAMETER	EFFLUENT LIMITATION					MONITORING REQUIREMENTS				FN
	Type	Limit	Units	Limit	Units	Sample Frequency	Sample Type	Location		
								Inf.	Eff.	
Flow Rate	Monthly Average	Monitor	GPD			Continuous	Recorder		X	
Flow Rate	Daily Maximum	117,000	GPD			Continuous	Recorder		X	
pH	Daily Minimum	6.5	S.U.			1/day	Grab		X	
	Daily Maximum	8.5	S.U.							
Temperature	Daily Maximum	Monitor	°F			1/day	Grab		X	
CBOD ₅ <i>Jun 1 – Oct 31</i>	Monthly Average	Monitor	mg/L	Monitor	lbs/d	2/month	24-hr. Comp.	X	X	
CBOD ₅ <i>Jun 1 – Oct 31</i>	Daily Maximum	5.0	mg/L	4.9	lbs/d	2/month	24-hr. Comp.		X	
CBOD ₅ <i>Nov 1 – May 31</i>	Monthly Average	Monitor	mg/L	Monitor	lbs/d	2/month	24-hr. Comp.	X	X	
CBOD ₅ <i>Nov 1 – May 31</i>	Daily Maximum	30	mg/L	29	lbs/d	2/month	24-hr. Comp.		X	
Total Suspended Solids (TSS)	Monthly Average	20	mg/L	20	lbs/d	2/month	24-hr. Comp.	X	X	
Total Suspended Solids (TSS)	Daily Maximum	40	mg/L	39	lbs/d	2/month	24-hr. Comp.		X	
Settleable Solids	Daily Maximum	0.1	mL/L			1/day	Grab		X	
Ammonia (as N) <i>Jun 1 – Oct 31</i>	Monthly Average	11	mg/L	10	lbs/d	2/month	24-hr. Comp.		X	
Ammonia (as N) <i>Jun 1 – Oct 31</i>	Daily Maximum	Monitor	mg/L	Monitor	lbs/d	2/month	24-hr. Comp.		X	
Ammonia (as N) <i>Nov 1 – May 31</i>	Monthly Average	18	mg/L	17	lbs/d	2/month	24-hr. Comp.		X	
Ammonia (as N) <i>Nov 1 – May 31</i>	Daily Maximum	Monitor	mg/L	Monitor	lbs/d	2/month	24-hr. Comp.		X	
Total Phosphorus (as P)	12 MRA	Monitor	mg/L	0.4	lbs/d	2/month	24-hr. Comp.		X	1
Total Phosphorus (as P)	Monthly Average	0.50	mg/L	Monitor	lbs/d	2/month	24-hr. Comp.		X	
Total Mercury	Daily Maximum	50	ng/L			1/month	Grab	X	X	
Chlorine, Total Residual	Daily Maximum	0.036	mg/L			1/day	Grab		X	

EFFLUENT DISINFECTION		Limit	Units	Limit	Units	Sample Frequency	Sample Type	Inf.	Eff.	FN
Required Seasonal from May 1st - October 31st										
Coliform, Fecal	30-Day Geometric Mean	200	No./100 mL			2/month	Grab		X	
Coliform, Fecal	7-Day Geometric Mean	400	No./100 mL			2/month	Grab		X	

PERMIT LIMITS, LEVELS AND MONITORING (continued)

WHOLE EFFLUENT TOXICITY (WET) TESTING		Limit	Units	Action Level	Units	Sample Frequency	Sample Type	Inf.	Eff.	FN
WET - Acute Invertebrate	See footnote 2			1.7	TUa	1/quarter	See footnote 2		X	2
WET - Acute Vertebrate	See footnote 2			1.7	TUa	1/quarter	See footnote 2		X	2
WET - Chronic Invertebrate	See footnote 2			7.2	TUc	1/quarter	See footnote 2		X	2
WET - Chronic Vertebrate	See footnote 2			7.2	TUc	1/quarter	See footnote 2		X	2

FOOTNOTES:

1. The 12-month rolling average for phosphorus is defined as the sum of the current month's monthly average concentration or load added to the monthly averages from the eleven previous months, divided by the number of months for which samples were collected in the 12-month period.

2. **Whole Effluent Toxicity (WET) Testing:**

Testing Requirements – Chronic WET testing is required, but report both the acute and chronic results. Testing shall be performed in accordance with 40 CFR Part 136 and TOGS 1.3.2 unless prior written approval has been obtained from the Department. The test species shall be Ceriodaphnia dubia (water flea - invertebrate) and Pimephales promelas (fathead minnow - vertebrate). Receiving water collected upstream from the discharge should be used for dilution. All tests conducted should be static-renewal (two 24-hr composite samples with one renewal for Acute tests and three 24-hr composite samples with two renewals for Chronic tests). The appropriate dilution series should be used to generate a definitive test endpoint, otherwise an immediate rerun of the test may be required. WET testing shall be coordinated with the monitoring of chemical and physical parameters limited by this permit so that the resulting analyses are also representative of the sample used for WET testing. The ratio of critical receiving water flow to discharge flow (i.e. dilution ratio) is **5.8:1** for acute, and **7.2:1** for chronic. Discharges which are disinfected using chlorine should be dechlorinated prior to WET testing or samples shall be taken immediately prior to the chlorination system.

Monitoring Period - WET testing shall be performed quarterly (calendar quarters) during calendar years ending in **4** and **9**.

Reporting - Toxicity Units shall be calculated and reported on the DMR as follows: $TUa = (100)/(48\text{-hr LC50})$ [note that Acute data is generated by both Acute and Chronic testing] and $TUc = (100)/(7\text{-day NOEC})$ or $(100)/(7\text{-day IC25})$ when Chronic testing has been performed or $TUc = (TUa) \times (10)$ when only Acute testing has been performed and is used to predict Chronic test results, where the 48-hr LC50, 7-day NOEC and/or IC25 are all expressed in % effluent. This must be done, including the Chronic prediction from the Acute data, for both species unless otherwise directed. For Chronic results, report the most sensitive endpoint (i.e. survival, growth and/or reproduction) corresponding to the lowest 7-day NOEC or IC25 and resulting highest TUc. For Acute results, report a TUa of 0.3 if there is no statistically significant mortality in 100% effluent as compared to the control. Report a TUa of 1.0 if there is statistically significant mortality in 100% effluent as compared to the control, but insufficient mortality to generate a 48-hr LC50. Also, in the absence of a 48-hr LC50, use 1.0 TUa for the Chronic prediction from the Acute data, and report a TUc of 10.0.

The complete test report including all bench sheets, statistical analyses, reference toxicity data, daily average flow at the time of sampling and other appropriate supporting documentation, shall be submitted within 60 days following the end of each test period with your WET DMR and to the WET@dec.ny.gov email address. A summary page of the test results for the invertebrate and vertebrate species indicating TUa, 48-hr LC50 for Acute tests and/or TUc, NOEC, IC25, and most sensitive endpoints for Chronic tests, should also be included at the beginning of the test report.

WET Testing Action Level Exceedances - If an action level is exceeded then the Department may require the permittee to conduct additional WET testing including Acute and/or Chronic tests. Additionally, the permittee may be required to perform a Toxicity Identification/Reduction Evaluation (TI/RE) in accordance with Department guidance. Enforceable WET limits may also apply. The permittee shall be notified in writing by their Regional DEC

office of additional requirements. The written notification shall include the reason(s) why such testing, TI/RE and/or limits are required.

SPECIAL CONDITIONS

1. The permittee shall conduct an annual Priority Pollutant (ref. 40 CFR Part 423, Appendix A) scan of Outfall 001, to be completed no later than April 30 of each year. The sample shall be collected on a day in which normal operating conditions are occurring. The sampling results from this scan shall be submitted to the Bureau of Water Compliance, 625 Broadway, Albany NY 12233-3506 and to the Region 5 Regional Water Engineer no later than May 31 of each year. The presence of any parameter not limited in the permit should be noted and accompanied by a short explanation as to the source of the parameter.

STORMWATER POLLUTION PREVENTION REQUIREMENTS

NO EXPOSURE CERTIFICATION

The permittee submitted a Conditional Exclusion for No Exposure Form on **1/25/2022**, certifying that all industrial activities and materials are completely sheltered from exposure to rain, snow, snowmelt, and/or stormwater runoff. The permittee must maintain a condition of no exposure for the exclusion to remain applicable. If conditions change resulting in the exposure of materials and activities to stormwater, the permittee must notify the Regional Water Engineer. The permittee must recertify a condition of no exposure every five years by completing the "No Exposure Certification Form" found on the NYSDEC website.

BEST MANAGEMENT PRACTICES (BMPs) FOR INDUSTRIAL FACILITIES

Note that for some facilities, especially those with few employees or limited industrial activities, some of the below BMPs may not be applicable. It is acceptable in these cases to indicate “Not Applicable” for the portion(s) of the BMP Plan that do not apply to your facility, along with an explanation.

1. **General** - The permittee shall develop, maintain, and implement a Best Management Practices (BMP) plan to prevent releases of significant amounts of pollutants to the waters of the State through plant site runoff; spillage and leaks; sludge or waste disposal; and stormwater discharges including, but not limited to, drainage from raw material storage. The BMP plan shall be documented in narrative form and shall include the 13 minimum BMPs and any necessary plot plans, drawings, or maps. Other documents already prepared for the facility such as a Safety Manual or a Spill Prevention, Control and Countermeasure (SPCC) plan may be used as part of the plan and may be incorporated by reference. A copy of the current BMP plan shall be submitted to the Department as required in item (2.) below and a copy must be maintained at the facility and shall be available to authorized Department representatives upon request.
2. **Compliance Deadlines** –The initial BMP plan shall be submitted in accordance with the Schedule of Submittals to the Regional Water Engineer. The BMP plan shall be implemented within 6 months of submission, unless a different time frame is approved by the Department. The BMP plan **shall be reviewed annually** and shall be modified whenever (a) changes at the facility materially increase the potential for releases of pollutants; (b) actual releases indicate the plan is inadequate, or (c) a letter from the Department identifies inadequacies in the plan. The permittee shall certify in writing, **as an attachment to the December Discharge Monitoring Report (DMR)**, that the annual review has been completed. Subsequent modifications to or renewal of this permit does not reset or revise these deadlines unless a new deadline is set explicitly by such permit modification or renewal.
3. **Facility Review** - The permittee shall review all facility components or systems (including but not limited to material storage areas; in-plant transfer, process, and material handling areas; loading and unloading operations; storm water, erosion, and sediment control measures; process emergency control systems; and sludge and waste disposal areas) where materials or pollutants are used, manufactured, stored or handled to evaluate the potential for the release of pollutants to the waters of the State. In performing such an evaluation, the permittee shall consider such factors as the probability of equipment failure or improper operation, cross-contamination of storm water by process materials, settlement of facility air emissions, the effects of natural phenomena such as freezing temperatures and precipitation, fires, and the facility's history of spills and leaks. The relative toxicity of the pollutant shall be considered in determining the significance of potential releases. The review shall address all substances present at the facility that are identified in the SPDES application Form NY-2C (available at https://www.dec.ny.gov/docs/permits_ej_operations_pdf/form2c.pdf) or that are required to be monitored for by the SPDES permit.
4. **13 Minimum BMPs:** Whenever the potential for a release of pollutants to State waters is determined to be present, the permittee shall identify BMPs that have been established to prevent or minimize such potential releases. Where BMPs are inadequate or absent, appropriate BMPs shall be established. In selecting appropriate BMPs, the permittee shall consider good industry practices and, where appropriate, structural measures such as secondary containment and erosion/sediment control devices and practices. USEPA guidance for development of stormwater elements of the BMP is available in *Developing Your Stormwater Pollution Prevention Plan A Guide for Industrial Operators*, February 2009, EPA 833-B-09-002. As a minimum, the plan shall include the following BMPs:

- | | | |
|-------------------------------------|---|---------------------------------|
| 1. BMP Pollution Prevention Team | 6. Security | 10. Spill Prevention & Response |
| 2. Reporting of BMP Incidents | 7. Preventive Maintenance | 11. Erosion & Sediment Control |
| 3. Risk Identification & Assessment | 8. Good Housekeeping | 12. Management of Runoff |
| 4. Employee Training | 9. Materials/Waste Handling, Storage, & Compatibility | 13. Street Sweeping |
| 5. Inspections and Records | | |

BMPs FOR INDUSTRIAL FACILITIES (continued)

5. **Stormwater Pollution Prevention Plans (SWPPPs) Required for Discharges of Stormwater from Construction Activity to Surface Waters** - A SWPPP shall be developed prior to commencing any construction activity that will result in soil disturbance of one or more acres of uncontaminated area¹. (Note: the disturbance threshold is 5000 SF in the New York City East of Hudson Watershed). The SWPPP shall conform to the current version of the SPDES General Permit for Stormwater Discharges from Construction Activity (CGP), including the *New York Standards and Specifications for Erosion and Sediment Control* and *New York State Stormwater Management Design Manual*. The permittee shall submit a copy of the SWPPP and any amendments thereto to the local governing body and any other authorized agency having jurisdiction or regulatory control over the construction activity **at least 30 days prior to soil disturbance**. The SWPPP shall be maintained on-site and submitted to the Department only upon request. When a SWPPP is required, a properly completed *Notice of Intent* (NOI) form shall be submitted (available at www.dec.ny.gov/chemical/43133.html) prior to soil disturbance. Note that submission of the NOI is required for informational purposes; the permittee is not eligible for and will not obtain coverage under any SPDES general permit for stormwater discharges. SWPPPs must be developed for subsequent site disturbances in accordance with the above requirements. The permittee is responsible for ensuring that the provisions of each SWPPP are properly implemented.
6. **Required Sampling For "Hot Spot" Identification** - Development of the BMP plan shall include sampling of waste stream segments for the purpose of pollutant "hot spot" identification. The economic achievability of effluent limits will not be considered until plant site "hot spot" sources have been identified, contained, removed or minimized through the imposition of site specific BMPs or application of internal facility treatment technology. For the purposes of this permit condition a "hot spot" is a segment of an industrial facility (including but not limited to soil, equipment, material storage areas, sewer lines etc.) which contributes elevated levels of problem pollutants to the wastewater and/or stormwater collection system of that facility. For the purposes of this definition, problem pollutants are substances for which treatment to meet a water quality or technology requirement may, considering the results of waste stream segment sampling, be deemed unreasonable. For the purposes of this definition, an elevated level is a concentration or mass loading of the pollutant in question which is sufficiently higher than the concentration of that same pollutant at the compliance monitoring location so as to allow for an economically justifiable removal and/or isolation of the segment and/or B.A.T. treatment of wastewaters emanating from the segment.

MERCURY MINIMIZATION PROGRAM (MMP) - Type III

¹ Uncontaminated area means soils which are free of contamination by any toxic or non-conventional pollutants identified in the tables of SPDES Application Form NY-2C. Disturbance of any size contaminated area(s) and the resulting discharge of contaminated stormwater is not authorized by this permit unless the discharge is under State or Federal oversight as part of a remedial program or after review by the Regional Water Engineer; nor is such discharge authorized by any SPDES general permit for stormwater discharges.

1. General - The permittee must develop, implement, and maintain a mercury minimization program (MMP), containing the elements set forth below, to reduce mercury effluent levels with the goal of achieving the WQBEL of 0.7 ng/L.
2. MMP Elements - The MMP must be a written document and must include any necessary drawings or maps of the facility and/or collection system. Other related documents already prepared for the facility may be used as part of the MMP and may be incorporated by reference. At a minimum, the MMP must include the following elements as described in detail below:
 - a. Monitoring - Monitoring at Outfall 001, influent and other locations tributary to compliance points shall be performed using either USEPA Method 1631 or another sufficiently sensitive method, as approved under 40 CFR Part 136². Monitoring of raw materials, equipment, treatment residuals, and other non-wastewater/non-stormwater substances may be performed using other methods as appropriate. Monitoring must be coordinated so that the results can be effectively compared between locations.

Minimum required monitoring is as follows:

- i. Plant Influent and/or Effluent – The permittee must collect samples at the location(s) and frequency as specified in the SPDES permit limitations table.
 - ii. Key Locations and Potential Mercury Sources – The permittee must sample *key locations*, chosen to identify *potential mercury sources*, at least annually.
 - iii. Monitoring Requirements - Facilities with EEQ at or below 12 ng/L are eligible for the following:
 - 1) Reduced requirements, through a permittee-initiated permit modification
 - a) Conduct influent monitoring, sampling semi-annually, in lieu of monitoring within the collection system, such as at *key locations*; and
 - b) Conduct effluent compliance sampling semi-annually.
 - 2) If a facility with reduced requirements reports discharges above 12 ng/L for two of four consecutive effluent samples, the Department may undertake a Department-initiated modification to remove the allowance of reduced requirements.
 - 3) Under the decreased permit requirements, the facility must continue to conduct an annual status report, as applicable in accordance with 2.c of this MMP, to determine if any waste streams have changed.
 - iv. Additional monitoring must be completed as required elsewhere in this permit (e.g., locations tributary to compliance points).
- b. Control Strategy - The control strategy must contain the following minimum elements:
 - i. Monitoring and Inventory/Inspections for Outfall 001 -
 - 1) Monitoring shall be performed as described in 2.a above. As mercury sources are found, the permittee must track down and minimize these sources.
 - 2) The permittee must inventory and/or inspect users of its system as necessary to support the MMP.
 - a) Potential mercury sources
 1. The permittee must maintain an inventory of *potential mercury sources*.
 2. The permittee must inspect *potential mercury sources* once every five years. Alternatively, the permittee may develop and implement an outreach program³ which informs users of their responsibilities as *potential mercury sources*. The permittee must conduct the outreach program at least once every five years. The outreach program should be supported by a subset of site inspections.
 3. A file shall be maintained containing documentation demonstrating compliance with 2.b.i.2)a) above. This file shall be available for review by the Department representatives and copies shall be provided upon request.

MERCURY MINIMIZATION PROGRAM (MMP) – Type III (Continued)

- ii. Equipment and Materials – Equipment and materials (e.g., thermometers, thermostats) used by the permittee, which may contain mercury, must be evaluated by the permittee. As equipment and materials containing mercury are updated/replaced, the permittee must use mercury-free alternatives, if possible.

² Outfall monitoring must be conducted using the methods specified in Table 8 of *DOW 1.3.10*.

³ For example, the outreach program could include education about sources of mercury and what to do if a mercury source is found.

- iii. Bulk Chemical Evaluation – For chemicals, used at a rate which exceeds 1,000 gallons/year or 10,000 pounds/year, the permittee must obtain a manufacturer's certificate of analysis, a chemical analysis performed by a certified laboratory, and/or a notarized affidavit which describes the substances' mercury concentration and the detection limit achieved. If possible, the permittee must only use bulk chemicals utilized in the wastewater treatment process which contain <10 ppb mercury.

- c. **Status Report - An annual** status report must be developed and maintained on site, in accordance with the Schedule of Additional Submittals, summarizing:
 - i. All MMP monitoring results for Outfall 001 for the previous reporting period;
 - ii. A list of known and *potential mercury sources* for Outfall 001
 - 1) If the permittee meets the criteria for MMP Type IV, the permittee must notify the Department for a permittee-initiated modification;
 - iii. All actions undertaken, pursuant to the control strategy, during the previous reporting period;
 - iv. Actions planned, pursuant to the control strategy, for the upcoming reporting period; and
 - v. Progress towards achieving a dissolved mercury concentration of 0.70 ng/L in the effluent (e.g., summarizing reductions in effluent concentrations as a result of the control strategy implementation and/or installation/modification of a treatment system).

The permittee must maintain a file with all MMP documentation. The file must be available for review by Department representatives and copies must be provided upon request in accordance with 6 NYCRR 750-2.1(i) and 750-2.5(c)(4).

3. MMP Modification - The MMP must be modified whenever:
 - a. Changes at the facility increase the potential for mercury discharges;
 - b. Effluent discharges exceed the current permit limitation(s); or
 - c. A letter from the Department identifies inadequacies in the MMP.

The Department may use information in the status reports, as applicable in accordance with 2.c of this MMP, to determine if the permit limitations and MMP Type is appropriate for the facility.

DEFINITIONS:

Key location – a location within the collection/wastewater system (e.g. including but not limited to a specific manhole/access point, tributary sewer/wastewater connection, or user discharge point) identified by the permittee as a potential mercury source. The permittee may adjust key locations based upon sampling and/or best professional judgement.

Potential mercury source – a source identified by the permittee that may reasonably be expected to have total mercury contained in the discharge. Some potential mercury sources include switches, fluorescent lightbulbs, cleaners, degreasers, thermometers, batteries, hauled wastes, universities, hospitals, laboratories, landfills, Brownfield sites, or raw material storage.

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:

<p>N.Y.S. PERMITTED DISCHARGE POINT</p> <p>SPDES PERMIT No.: NY_____</p> <p>OUTFALL No. : _____</p>
<p>For information about this permitted discharge contact:</p>
<p>Permittee Name: _____</p>
<p>Permittee Contact: _____</p>
<p>Permittee Phone: () - ### - #####</p>
<p>OR:</p>
<p>NYSDEC Division of Water Regional Office Address:</p>
<p>NYSDEC Division of Water Regional Phone: () - ### - #####</p>

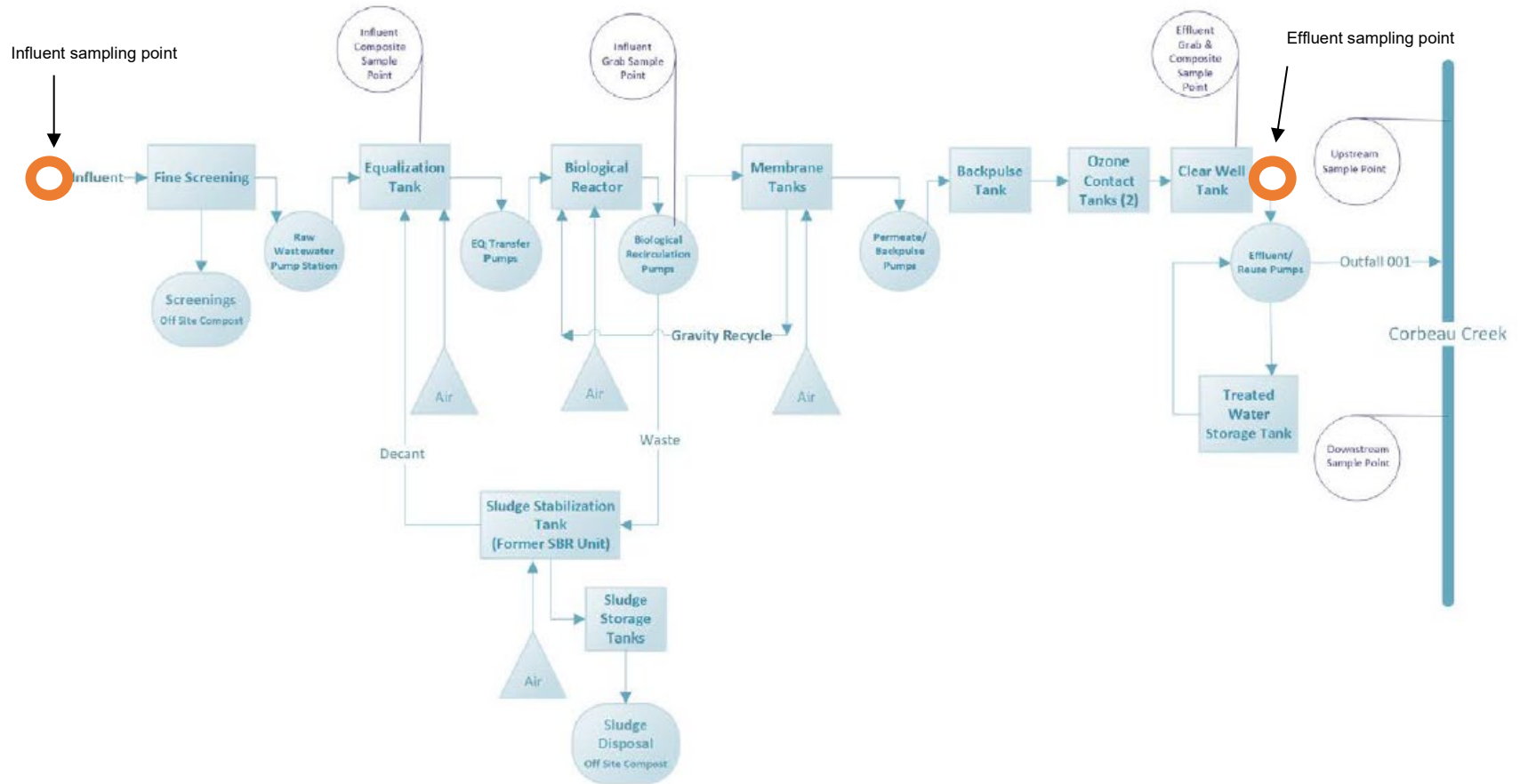
- (e) Upon request, the permittee shall make available electronic or hard copies of the sampling data to the public. In accordance with the RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS page of your permit, each DMR shall be maintained (either electronically or as a hard copy) on record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

MONITORING LOCATIONS

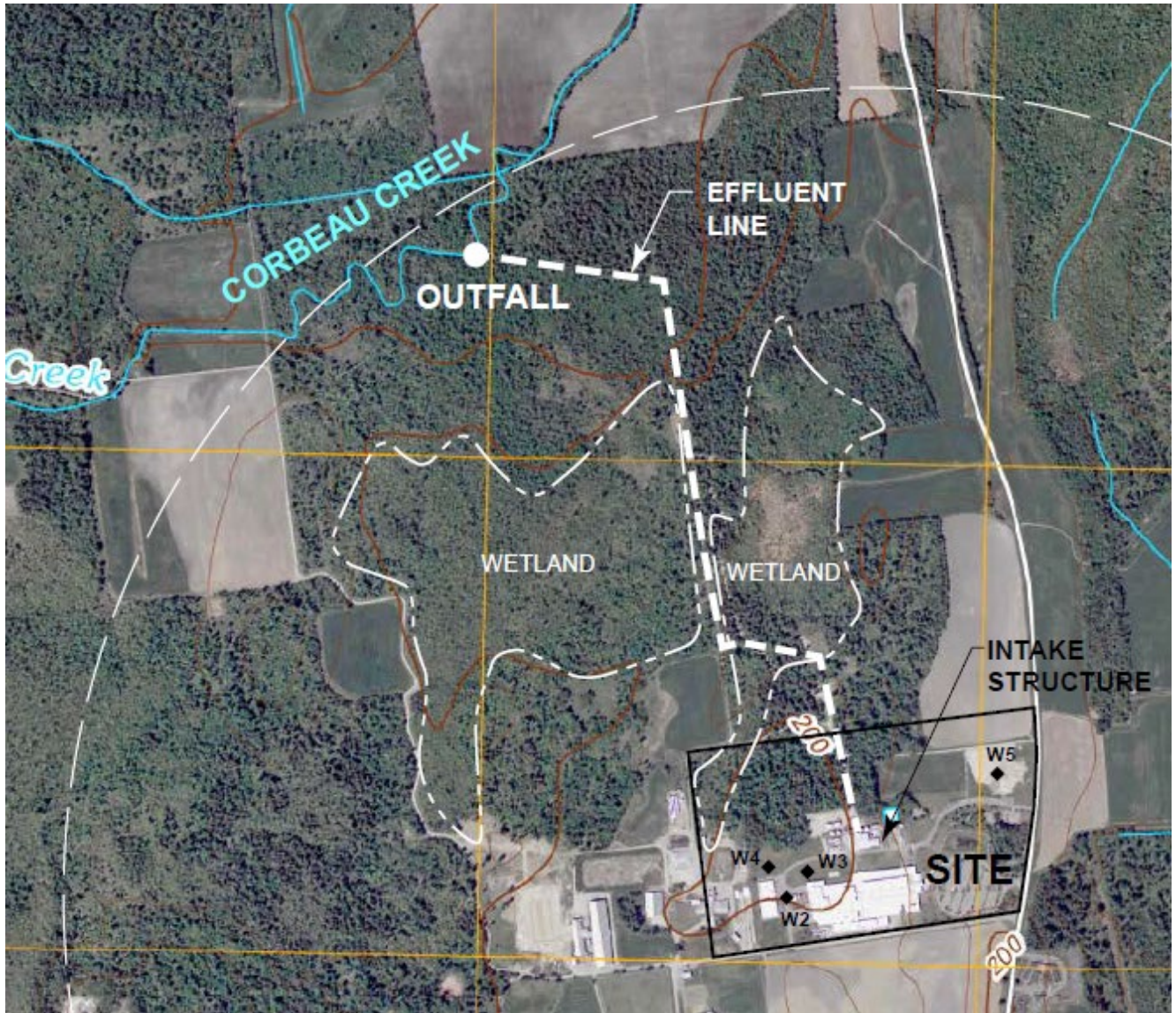
The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the locations(s) specified below:

Influent: Prior to fine screening

Effluent: At clear well tank



SITE LOCATION



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 H 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 for non-POTWs | 6 NYCRR 750-2.5, 2.6, 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. Sludge Management
- The permittee shall comply with all applicable requirements of 6 NYCRR Part 360.
- G. 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 Department, 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.
- H. Water Treatment Chemicals (WTCs)
- New or increased use and discharge of a WTC requires prior Department review and authorization. At a minimum, the permittee must notify the Department in writing of its intent to change WTC use by submitting a completed *WTC Notification Form* for each proposed WTC. The Department 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 Department. 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 by the Department.
 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 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 Department'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 Department or its designated agent.
- B. Discharge Monitoring Reports (DMRs): Completed DMR forms shall be submitted for each **one (1)** month reporting period in accordance with the DMR Manual available on Department's website.

DMRs must be submitted electronically using the electronic reporting tool (NetDMR) specified by NYSDEC. Instructions on the use of NetDMR can be found at <https://www.dec.ny.gov/chemical/103774.html>. **Hardcopy paper DMRs will only be received at the address listed below, directed to the Bureau of Water Compliance, if a waiver from the electronic submittal requirements has been granted by DEC to the facility.**

The first monitoring period begins on the effective date of this permit, and, unless otherwise required, the reports are due no later than the 28th day of the month following the end of each monitoring period.

- C. Additional information required to be submitted by this permit shall be summarized and reported to the RWE 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 5
232 Golf Course Road, Warrensburg, New York 12885-1172 Phone: (518) 623-1200

- 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:

Outfall(s)	SCHEDULE OF ADDITIONAL SUBMITTALS - Required Action	Due Date
	<p><u>BMP PLAN</u> The permittee shall submit a completed BMP plan by the due date specified. Additionally, the permittee shall review the completed BMP plan on an annual basis. The permittee shall certify in writing, as an attachment to the December Discharge Monitoring Report (DMR), that the annual review has been completed. The BMP plan shall be modified as required by the permit conditions listed in this permit.</p>	EDP + 6 Months, Annually thereafter on January 28 th
001	<p><u>WHOLE EFFLUENT TOXICITY (WET) TESTING</u> WET testing shall be performed as required in the footnote of the permit limits table. The toxicity test report including all information requested of this permit shall be attached to your WET DMRs and sent to the WET@dec.ny.gov email address.</p>	Within 60 days following the end of each monitoring period
001	<p><u>SPECIAL CONDITION – Annual Priority Pollutant Scan</u> The permittee shall submit to the Regional Water Engineer and the Bureau of Water Compliance results of an annual Priority Pollutant scan of Outfall 001, to be completed no later than April 30 of each year. The sample shall be collected on a day in which normal operating conditions are occurring. The list of Priority Pollutants is specified in 40 CFR Part 423, Appendix A.</p>	May 31 st each year

Outfall(s)	SCHEDULE OF ADDITIONAL SUBMITTALS - Required Action	Due Date
	<u>WATER TREATMENT CHEMICAL (WTC) ANNUAL REPORT FORM</u> The permittee shall submit a completed WTC Annual Report Form each year that Water Treatment Chemicals are used. The form shall be attached to the December DMR.	January 28 th each year
	<u>MERCURY MINIMIZATION PLAN</u> The permittee must complete and maintain onsite an annual mercury minimization status report in accordance with the requirements of this permit.	Maintained Onsite EDP + 1 year

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.

Permittee: Northstar 41, LLC
Facility: Northstar Technology Center
SPDES Number: NY0296520
USEPA Non-Major/Class 01 Industrial

Date: October 5, 2022 v.1.13
Permit Writer: Peter Maier
Water Quality Reviewer: Peter Maier
Full Technical Review

SPDES Permit Fact Sheet

Northstar 41, LLC

Northstar Technology Center

NY0296520



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Summary of Permit Changes

A new State Pollutant Discharge Elimination System (SPDES) permit has been drafted for the Northstar Technology Center. Elements of the new permit are summarized below:

- Effluent limits for the following parameters:
 - Flow rate
 - pH
 - CBOD₅
 - Ammonia
 - Total suspended solids
 - Settleable solids
 - Mercury
 - Fecal coliform
 - Phosphorus
 - Total residual chlorine
- Seasonal effluent disinfection
- Monitoring for temperature
- Mercury Minimization Program requirements
- Whole Effluent Toxicity (WET) action levels
- Best Management Practices (BMP) requirements
- Special Condition requirement for an annual Priority Pollutant scan

This factsheet 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 factsheet.

Administrative History

4/21/2022 The Northstar 41, LLC submitted a NY-2C permit application.

The Notice of Complete Application, published in the [Environmental Notice Bulletin](#) and newspapers, contains information on the public notice process.

Facility Information

This is an industrial facility (SIC code 8731) that houses specialty swine and research facilities. Effluent consists of treated sanitary, swine wastes, boiler/cooling water blowdown, and filter backwash water. The water supply for this facility is on-site, privately-owned wells. The facility and various treatment operations have existed since the mid-1960's but the current treatment system was constructed in 2006-2007 with a design flow rate of 117,000 gallons per day to provide treatment for similar wastestreams as those mentioned above. The system, previously permitted under individual SPDES permit NY0007170, was decommissioned on 5/27/2020 and the permit was terminated. Since this time, effluent has been discharged via a septic system under Private/Commercial/Institutional General Permit (GP-0-15-001) NYG003261, issued on 10/12/2018.

The permittee is currently reconditioning or upgrading most of the decommissioned treatment system and is proposing the following treatment units:

- Preliminary Treatment: Fine screening, equalization

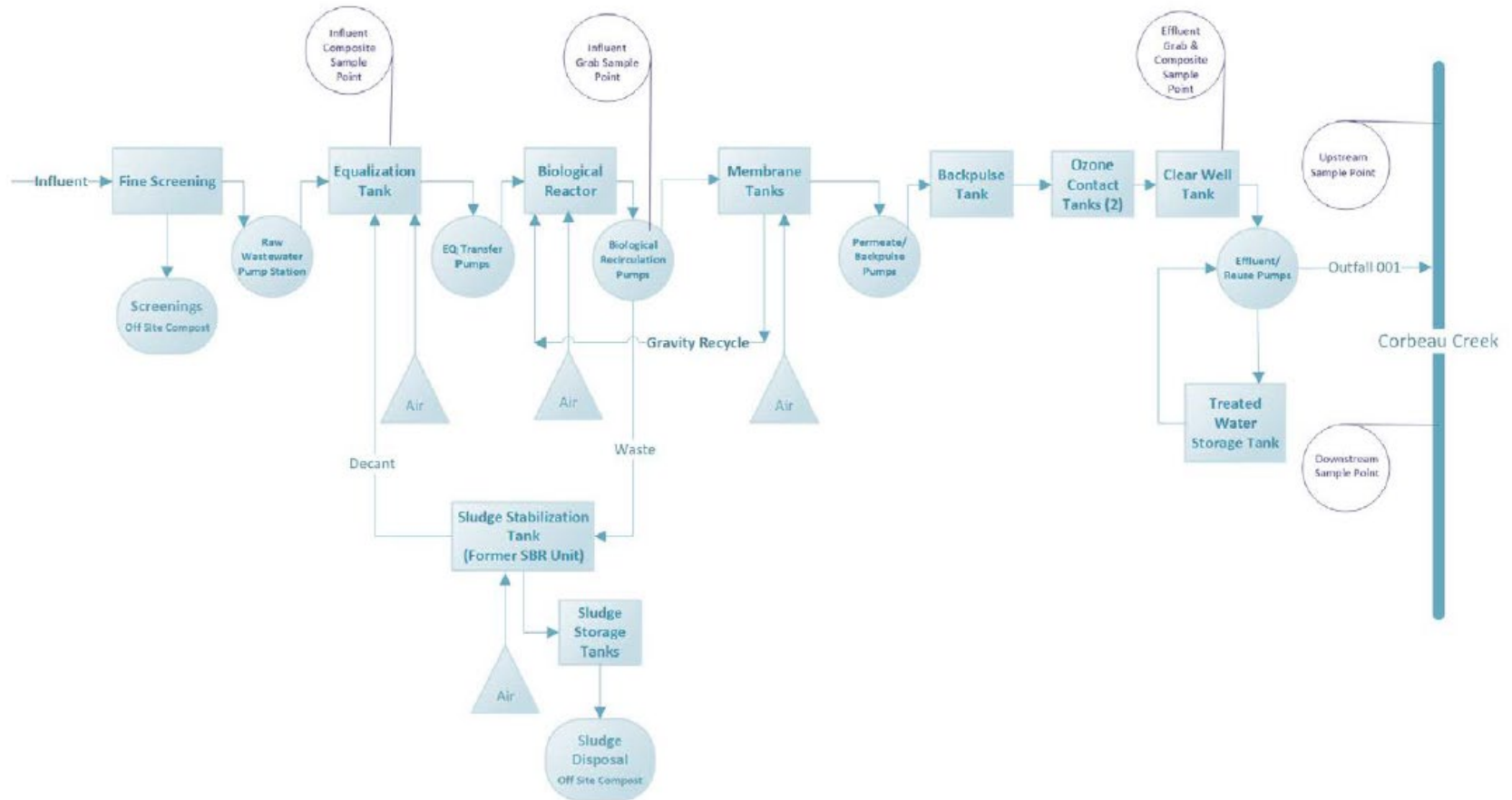
Permittee: Northstar 41, LLC
Facility: Northstar Technology Center
SPDES Number: NY0296520
USEPA Non-Major/Class 01 Industrial

Date: October 5, 2022 v.1.13
Permit Writer: Peter Maier
Water Quality Reviewer: Peter Maier
Full Technical Review

- Secondary Treatment: Membrane Bioreactor (MBRs) (2 trains, 2 filters per train)
- Disinfection: Ozone

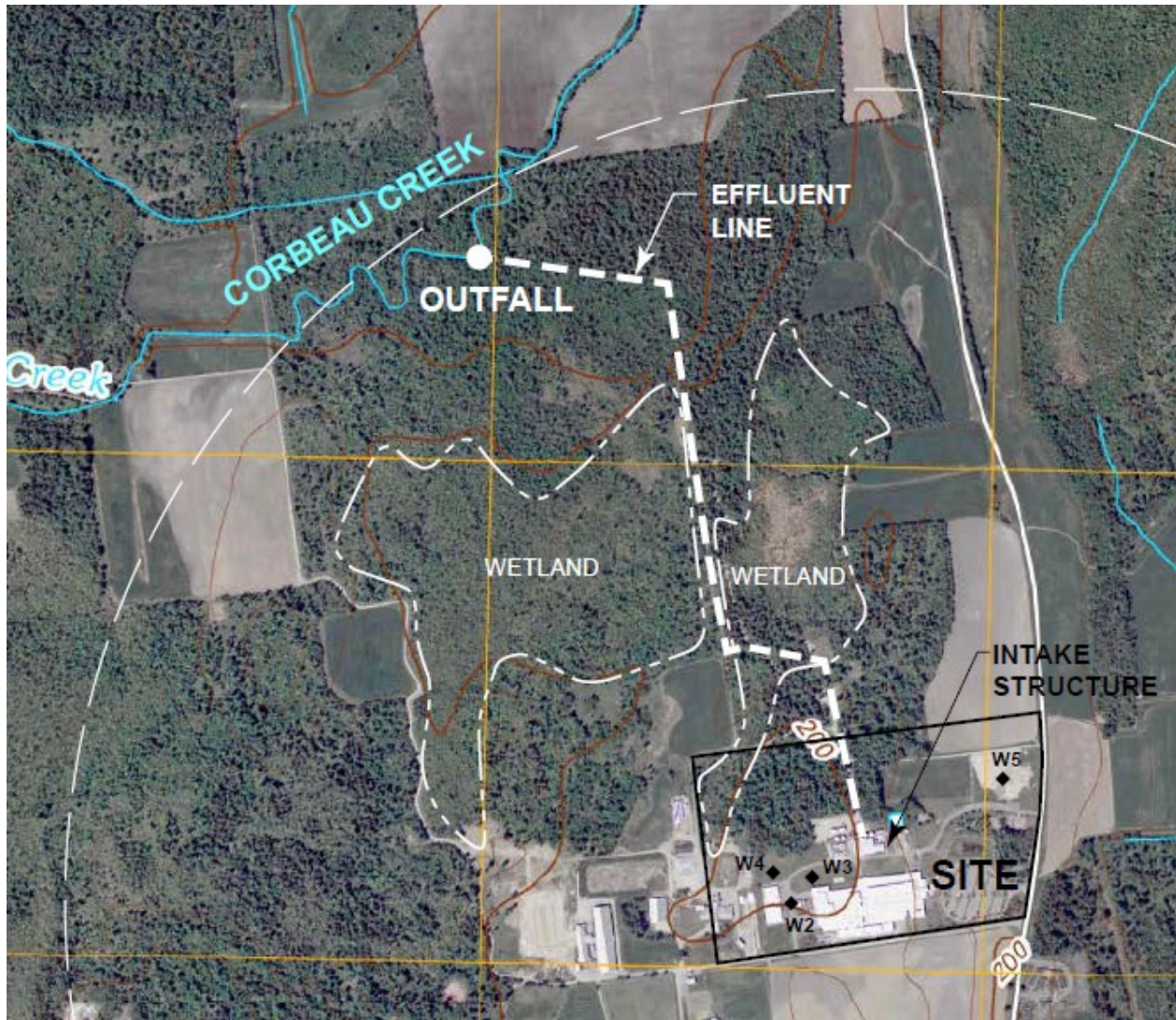
Sludge is thickened using dissolved air floatation and composted on-site. The existing outfall consists of a 3-inch HDPE pipe traveling about 1.1 miles from the wastewater treatment plant to Corbeau Creek, Class C (see [Site Overview](#)).

Treatment Process Flow Diagram



Source: June 2022 Engineering Report for SPDES Permit Application

Site Overview



Source: June 2022 Engineering Report for SPDES Permit Application

Enforcement History

Compliance and enforcement information can be found on the EPA's [Enforcement and Compliance History Online \(ECHO\)](#) website.

The new individual permit was initiated primarily due to a Notice of Violation from DEC dated 11/16/2020 stating that the facility's was required to obtain individual SPDES permit coverage due to the type of wastes generated and was ineligible for PCI SPDES General Permit (GP-0-15-001) coverage.

Existing Effluent Quality

The [Pollutant Summary Table](#) presents the existing effluent quality and effluent limitations. This is a new facility and effluent data is not available, so DEC is including a Special Condition requiring an annual Priority Pollutant scan of 126 parameters to help inform future permit limits. The existing effluent quality was determined from the application and engineer report submittals. [Appendix Link](#)

Interstate Water Pollution Control Agencies

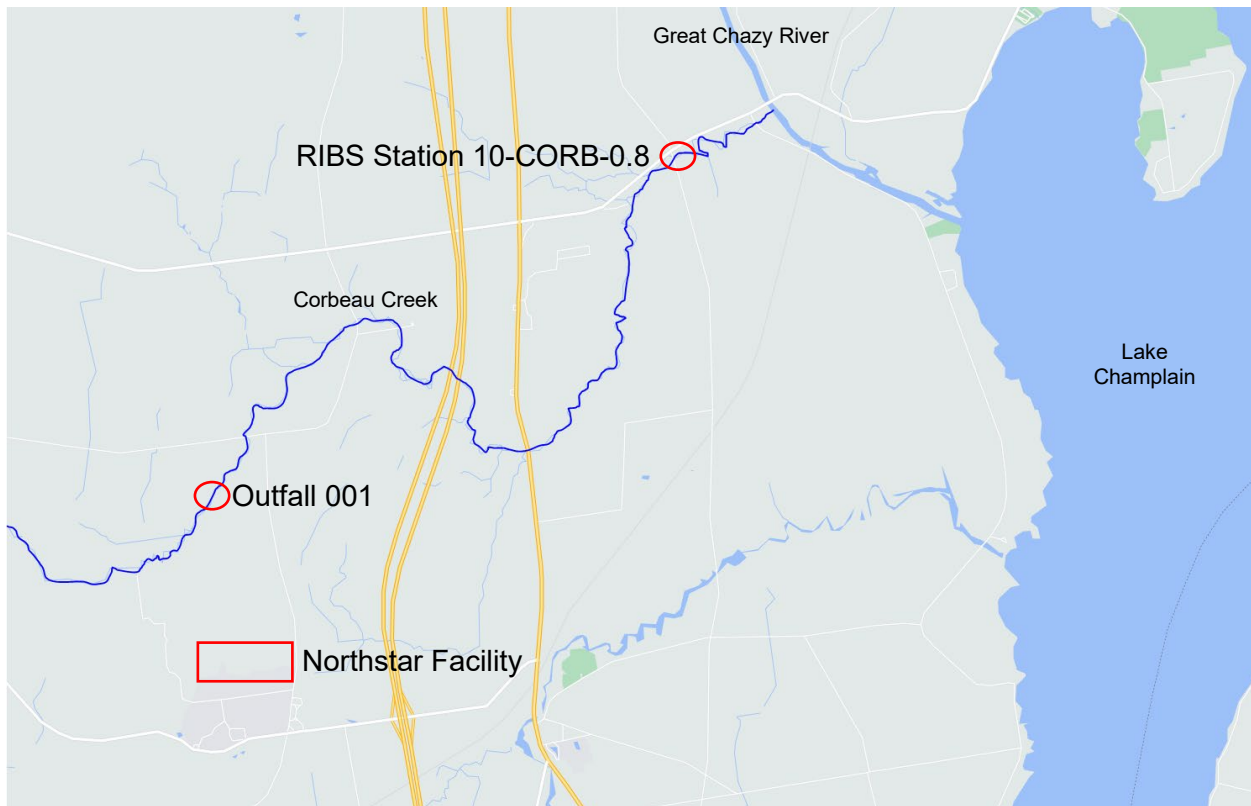
Outfall 001 is located within the New England Interstate Water Pollution Control Commission (NEIWPCC) compact area. [Appendix Link](#)

Receiving Water Information

The facility proposes to discharge via the following outfalls:

Outfall No.	SIC Code	Wastewater Type	Receiving Water
001	8731	Treated sanitary, swine wastes, boiler/cooling water blowdown, and filter backwash	Corbeau Creek, Class C

Reach Description: Corbeau Creek (Water Index Number: C-3-2) is a Class C, non-trout stream, that is tributary to the Great Chazy River. Corbeau Creek lies within the Lake Champlain watershed. For the purposes of the water quality evaluation, only Corbeau Creek from Outfall 001 to the confluence with the Great Chazy River was modeled, a distance of about 6.6 river miles. There are no other discharges along this reach.



See the [Outfall and Receiving Water Summary Table](#) and [Appendix](#) for additional information.

Impaired Waterbody Information

The Corbeau Creek segment (PWL No. 1002-0012) is not listed on the 2018 [New York State Section 303\(d\) List](#) of Impaired/Total Maximum Daily Load (TMDL) waters. However, this waterbody segment is located within the Lake Champlain Watershed and is subject to the applicable requirements of the [Lake Champlain Phosphorus TMDL](#), as discussed below.

Lake Champlain TMDL Watershed Information

On 9/25/2002, a TMDL was approved for the Lake Champlain watershed to address phosphorus. As part of the TMDL, the discharges from the following outfalls are subject to the listed wasteload allocations (WLA) for the following parameters:

Outfall No.	Parameter	Wasteload Allocation
001	Total Phosphorus as P	0.4 lbs/d, as a 12-Month Rolling Average

This WLA was previously applied to the facility under SPDES permit NY0007170. Since the new facility will operate at the same design flow as the previous facility, the previous WLA will be applied to the new facility.

The Northstar 41, LLC is required to sample and report Total Phosphorus as P. The Total Phosphorus 12-month rolling average is defined as the sum of the current month's monthly average in lbs/day added to the monthly average in lbs/day from the eleven previous months divided by 12. See the [Pollutant Summary Table](#) for a discussion on the derivation of Total Phosphorus effluent limits.

Daily maximum and monthly average monitoring for phosphorus concentration and mass loading is being including in the new permit for informational purposes.

Critical Receiving Water Data & Mixing Zone

The low flow condition for Corbeau Creek was obtained from a drainage basin ratio analysis with USGS gage station 04271500 located on the Great Chazy River in Perry Mills, NY. The gage is approximately 7.3 river miles upstream of the confluent with Corbeau Creek. The 1Q10, 7Q10 and 30Q10 flows at the gage were found from the USGS SW Toolbox software and an analysis of data from 1929 to 2021.

DRAINAGE BASIN RATIO	1Q10	7Q10	30Q10	
Gage Name	USGS	USGS	USGS	
Gage ID Number	04271500	04271500	04271500	
Low Flow at Gage (cfs)	13.882	18.206	25.311	SW Toolbox
Drainage Area at Gage (mi ²)	243	243	243	SW Toolbox
Drainage Area at Facility (mi ²)	15.1	15.1	15.1	USGS Streamstats
Drainage Basin Ratio (facility / gage)	0.1	0.1	0.1	
Calculated Flow at Facility (cfs)	0.86	1.13	1.57	

Consistent with TOGS 1.3.1, the outfall information submitted in the application and Simple Mixing Zone Form was used to develop a mixing zone model to establish dilution ratios for the water quality analysis. The model showed the mixing is equivalent to rapid and complete scenarios. Given the small diameter of the outfall, and a design flow of 117,000 GPD, the discharge achieves a high velocity inducing thorough mixing.

Outfall No.	Acute Dilution Ratio A(A)	Chronic Dilution Ratio A(C)	Human, Aesthetic, Wildlife Dilution Ratio (HEW)	Basis
001	5.8:1	7.2:1	9.7:1	CORMIX

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

An evaluation of the discharge indicates the potential for toxicity based on the following criteria: [Appendix Link](#)

- 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. (#4)
 - The facility proposes to use multiple water treatment chemicals in its process and treatment wastestreams.

The requirement for 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 outside of the Great Lakes drainage basin, the permit requires chronic WET testing. WET testing action levels of 1.7 TUa and 7.2 TUc have been included in the permit for each species. The acute action level for each species represent the acute dilution ratio times a factor of 0.3. Samples will be collected quarterly in years ending in 4 and 9. [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. The sign must be posted before the facility begins operations.

Additionally, the permit contains a requirement to make the DMR sampling data available to the public upon request.

Best Management Practices (BMPs) for Industrial Facilities

In accordance with 6 NYCRR 750-1.14(f) and 40 CFR 122.44(k), the permittee is required to develop and implement a BMP plan that prevents, or minimizes the potential for, the release of toxic or hazardous pollutants to state waters. The BMP plan requires annual review by the permittee.

Stormwater Pollution Prevention Requirements

The facility discharges stormwater associated with industrial activity and requires SPDES permit coverage under 40 CFR 122.26(a)(6).

On 4/21/2022, the permittee submitted a Conditional Exclusion for No Exposure Form, certifying that all industrial activities and materials are completely sheltered from exposure. This condition must be maintained for the exclusion to remain applicable. The schedule of submittals also includes a due date for re-certification every five years as required by 40 CFR 122.26(g)(iii).

¹ As prescribed by 6 NYCRR Part 617

Mercury²

The multiple discharge variance (MDV) for mercury provides the framework for NYSDEC to require mercury monitoring and mercury minimization programs (MMPs), through SPDES permitting. [Appendix Link](#)

The facility is a new Class 01 facility located outside the Great Lakes drainage basin and the permit includes requirements for the implementation of MMP Type III.

The facility is expected to meet the new daily max permit limit of 50 ng/L (with monthly sampling frequency). The limit represents the general level currently achievable (GLCA). The data collected will be used to establish an additional 12-month rolling average effluent limit during the next permit review.

A mercury minimization program consisting of the following is also required:

- Additional key location monitoring
- Control strategy for implementation of the MMP
- Annual status report (maintained onsite)

Schedule(s) of Additional Submittals

A schedule of additional submittals has been included for the following ([Appendix Link](#)):

- Submit an initial BMP Plan review/revise annually
- Whole Effluent Toxicity (WET) testing results
- Mercury Minimization Program Annual Status Report (maintained on-site)
- Submit annual Priority Pollutant Scan
- Water Treatment Chemical (WTC) annual report form

Special Conditions

The annual Priority Pollutant scan requirement referenced above is included as a Special Condition.

² In accordance with DOW 1.3.10 Mercury – SPDES Permitting & Multiple Discharge Variance (MDV), December 30, 2020.

OUTFALL AND RECEIVING WATER SUMMARY TABLE

Outfall	Latitude	Longitude	Receiving Water Name	Water Class	Water Index No. (WIN) / 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	44° 54' 30" N	73° 28' 30" W	Corbeau Creek	C	WIN: C-3-2 PWL: 1002-0012	10 / 02	190 ³	0.56	0.73	1.02	0.117	5.8:1	7.2:1	9.7:1

POLLUTANT SUMMARY TABLE – Outfall 001

Outfall #	001	Description of Wastewater: Treated sanitary, swine wastes, boiler/cooling water blowdown, and filter backwash.													
		Type of Treatment: Fine screening, equalization, membrane bioreactors, sludge stabilization, ozone disinfection.													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁴	# 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: There is no existing effluent data since the facility is new. Analysis on treatment plant performance was derived from an Engineering Report (Koss Separation Solutions, dated 5/13/2021) submitted as part of the NY-2C application that discussed plant operations. 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	Monthly Avg	New	New	0 / 0	Monitor	TOGS 1.2.1	Narrative: No alterations that will impair the waters for their best usages.					750-1.13	-	Monitor
		Daily Max	New	New	0 / 0	117,000	TOGS 1.2.1						703.2		TBEL
The daily maximum flow limit is set at the hydraulic design flow of the wastewater treatment facility (117,000 GPD rounded to two significant figures). Monthly average monitoring for flow rate is also included for informational purposes.															
pH	SU	Minimum	New	New	0 / 0	6.0	TOGS 1.2.1	7.65 ⁵	-	6.5 – 8.5	Range	6.5 - 8.5	703.3	-	WQBEL
		Maximum	New	New	0 / 0	9.0									
Given the dilution available, an effluent limitation equal to the WQS is appropriate.															
Temperature	°F	Daily Max	New	New	0 / 0	Monitor	750-1.13 Monitor	66.2 ⁶	Narrative (Non-Trout): 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

³ Ambient hardness data obtained from RIBS Station 10-CORB-0.8. (Average of 10 data points taken in 2004.)

⁴ Existing Effluent Quality: 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)

⁵ Ambient pH obtained from RIBS Station 10-CORB-0.8. (80th percentile of 12 data points taken from 1998 from 2013.)

⁶ Ambient temperature data obtained from RIBS Station 10-CORB-0.8. (Average of 5 data points taken from 1998 from 2013.)

Outfall #	001	Description of Wastewater: Treated sanitary, swine wastes, boiler/cooling water blowdown, and filter backwash.													
		Type of Treatment: Fine screening, equalization, membrane bioreactors, sludge stabilization, ozone disinfection.													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁴	# 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		
The discharge is a thermal discharge partially consisting of non-contact cooling water (NCCW) but since the thermal component will be diluted with a relatively large volume of other process and sanitary wastestream, monitoring for temperature is appropriate and protective of water quality.															
Dissolved Oxygen (DO) SUMMER 6/1 – 10/31	mg/L	Daily Min	New	New	0 / 0	-	-	8.4 ⁷	4.4 Critical Point	(Non-Trout) 4.0 mg/L	Narrative	See UOD and NH ₃	703.3	-	No Limitation
	The downstream DO concentration was modeled using the Streeter-Phelps equations and the following assumptions: effluent DO = 2.0 mg/L (assumed value consistent with TOGS 1.3.1D for activated sludge treatment plants), effluent CBOD ₅ = 5.0 mg/L (proposed CBOD ₅ limit and equal to the technology-based effluent limitation found in TOGS 1.3.1), effluent NOD = 8.8 mg/L (proposed ammonia limit). Note the ambient DO value was taken from NYSDEC's RIBS station (note: this station is about 5.6 river miles downstream of the discharge but assumed to be representative of upstream conditions).														
	Reach Description: The model started at Northstar's Outfall 001 and ended at confluence with the Great Chazy River, a distance of about 6.6 river miles. The entire segment of this reach is classified as Class C (non-trout). The model showed that WQBELs for CBOD ₅ and ammonia are necessary to maintain adequate downstream water quality.														
Dissolved Oxygen (DO) WINTER 11/1 – 5/31	mg/L	Daily Min	New	New	0 / 0	-	-	8.4 ⁷	4.4 Critical Point	(Non-Trout) 4.0 mg/L	Narrative	See UOD and NH ₃	703.3	-	No Limitation
	The downstream DO concentration was modeled using the Streeter-Phelps equations and the following assumptions: effluent DO = 2.0 mg/L (assumed value consistent with TOGS 1.3.1D for activated sludge treatment plants), effluent CBOD ₅ = 30 mg/L (proposed CBOD ₅ limit), effluent NOD = 14 mg/L (proposed ammonia limit). Note the ambient DO for winter was assumed to be equal to the summer value taken from NYSDEC's RIBS station (note: this station is about 5.6 river miles downstream of the discharge but assumed to be representative of upstream conditions).														
	Reach Description: The model started at Northstar's Outfall 001 and ended at confluence with the Great Chazy River, a distance of about 6.6 river miles. The entire segment of this reach is classified as Class C (non-trout). The model showed that WQBELs for UOD, CBOD ₅ , and ammonia are necessary to maintain adequate downstream water quality.														
5-day Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	mg/L	Monthly Avg	New	New	0 / 0	25	TOGS 1.2.1	N/S	See Dissolved Oxygen		Monitor	750-1.13	-	Monitor	
		Daily Max	New	New	0 / 0	40	TOGS 1.2.1				5.0	703.3	-	WQBEL	
	lbs/d	Monthly Avg	New	New	0 / 0	-	-				Monitor	750-1.13	-	Monitor	
		Daily Max	New	New	0 / 0	-	-				4.9	703.3	-	WQBEL	

⁷ Ambient dissolved oxygen obtained from RIBS Station 10-CORB-0.8. (Average of 5 data points taken from 1998 from 2013.)

Outfall #	001	Description of Wastewater: Treated sanitary, swine wastes, boiler/cooling water blowdown, and filter backwash.													
		Type of Treatment: Fine screening, equalization, membrane bioreactors, sludge stabilization, ozone disinfection.													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁴	# 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		
SUMMER 6/1 – 10/31	A new daily maximum seasonal concentration effluent limitation for CBOD ₅ is being included to be protective of downstream dissolved oxygen water quality standards. Monitor only requirements for monthly average is being added since an effluent limit of 5.0 mg/L for CBOD ₅ is considered the most stringent effluent value for this parameter for biological treatment systems. Additionally, a daily maximum mass-loading limitation is specified consistent with 40 CFR 122.45(f). See justification for Dissolved Oxygen. Monthly average monitoring of this parameter is also being included to assess plant performance.														
5-day Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	mg/L	Monthly Avg	New	New	0 / 0	25	TOGS 1.2.1	N/S	See Dissolved Oxygen			Monitor	750-1.13	-	Monitor
		Daily Max	New	New	0 / 0	40	TOGS 1.2.1					30	703.3	-	WQBEL
	lbs/d	Monthly Avg	New	New	0 / 0	-	-					Monitor	750-1.13	-	Monitor
		Daily Max	New	New	0 / 0	-	-					29	703.3	-	WQBEL
WINTER 11/1 – 5/31	A new daily maximum seasonal concentration effluent limitation for CBOD ₅ is being included to be protective of downstream dissolved oxygen water quality standards. Monitor only requirements for monthly average is being added since an effluent limit of 5.0 mg/L for CBOD ₅ is considered the most stringent effluent value for this parameter for biological treatment systems. Additionally, a daily maximum mass-loading limitation is specified consistent with 40 CFR 122.45(f). See justification for Dissolved Oxygen. Monthly average monitoring of this parameter is also being included to assess plant performance.														
Total Suspended Solids (TSS)	mg/L	Monthly Avg	New	New	0 / 0	20	TOGS 1.2.1	9.3 ⁸	Narrative: None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages.			703.2	-	TBEL	
		Daily Max	New	New	0 / 0	40	TOGS 1.2.1								
	lbs/d	Monthly Avg	New	New	0 / 0	20	TOGS 1.2.1								
		Daily Max	New	New	0 / 0	39	TOGS 1.2.1								
Consistent with TOGS 1.2.1, TBELs reflect the available treatment technology listed in Attachment C for facilities with filtration. Given the dilution available, an effluent limitation equal to the TBEL, and consistent with TOGS 1.2.1, is reasonably protective of water quality standards.															
Settleable Solids	mL/L	Daily Max	New	New	0 / 0	0.1	TOGS 1.2.1	N/S	Narrative: 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 1.2.1 Attachment C, the TBEL is reflective of the filtration treatment technology and is reasonably protective of the WQS.													
Nitrogen, Ammonia (as N)	mg/L	Monthly Avg	New	New	0 / 0	-	-	0.15 ⁹	0.13	1.2	A(C)	11	703.5	-	WQBEL
	mg/L	Daily Max	New	New	0 / 0	Monitor	750-1.13 Monitor	-	-	-	-	-	-	-	Monitor

⁸ Ambient TSS obtained from RIBS Station 10-CORB-0.8. (Average of 17 data points taken in 2004.)

⁹ Ambient summer ammonia data obtained from RIBS Station 10-CORB-0.8. (Average of 4 data points taken in 2004 [summer only].)

Outfall #	001	Description of Wastewater: Treated sanitary, swine wastes, boiler/cooling water blowdown, and filter backwash.													
		Type of Treatment: Fine screening, equalization, membrane bioreactors, sludge stabilization, ozone disinfection.													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁴	# 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		
SUMMER 6/1 – 10/31	lbs/d	Monthly Avg	New	New	0 / 0	-	-	-	-	-	-	10	703.5	-	WQBEL
	lbs/d	Daily Max	New	New	0 / 0	Monitor	750-1.13 Monitor	-	-	-	-	-	-	-	Monitor
The WQS for Ammonia was determined from TOGS 1.1.1 from a summer pH of 7.6 S.U. (RIBS data) and an assumed summer temperature of 25°C (per TOGS 1.3.1E). The projected instream concentration was calculated using the calculated water quality standard and ambient concentration of 0.15 mg/L and accounting for dilution. Monitoring for daily maximum concentration and mass-loading is also included for informational purposes. A comparison of the projected instream concentration to the WQS indicates a reasonable potential to cause or contribute to a WQS violation and therefore a WQBEL is specified.															
Nitrogen, Ammonia (as N)	mg/L	Monthly Avg	New	New	0 / 0	-	-	0.021 ¹⁰	0.018	1.9	A(C)	18	703.5	-	WQBEL
	mg/L	Daily Max	New	New	0 / 0	Monitor	750-1.13 Monitor	-	-	-	-	-	-	-	Monitor
	lbs/d	Monthly Avg	New	New	0 / 0	-	-	-	-	-	-	17	703.5	-	WQBEL
	lbs/d	Daily Max	New	New	0 / 0	Monitor	750-1.13 Monitor	-	-	-	-	-	-	-	Monitor
The WQS for Ammonia was determined from TOGS 1.1.1 from a pH of 7.6 S.U. (assumed to be equal to the summer pH noted above) and an assumed winter temperature of 10°C (per TOGS 1.3.1E). The projected instream concentration was calculated using the calculated water quality standard and average ambient concentration of 0.021 mg/L and accounting for dilution. Monitoring for daily maximum concentration and mass-loading is also included for informational purposes. A comparison of the projected instream concentration to the WQS indicates a reasonable potential to cause or contribute to a WQS violation and therefore a WQBEL is specified.															
Total Phosphorus	mg/L	Monthly Avg	New	New	0 / 0	0.50	TOGS 1.3.6	0.13 ¹¹	-	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	
	lb/d	Monthly Avg	New	New	0 / 0	Monitor	750-1.13 Monitor	-	-		-	-		Monitor	
	mg/L	12 MRA	New	New	0 / 0	Monitor	750-1.13 Monitor	-	-		-	-		Monitor	
	lb/d	12 MRA	New	New	0 / 0	0.4	TMDL	-	-		-	-		TBEL	
Consistent with the TMDL, and to maximize phosphorus removal ¹² to improve the water quality of Lake Champlain, the permit includes a total phosphorus concentration limit of 0.50 mg/L expressed as a monthly average and a 12-month rolling average limitation of 0.4 lbs/day, along with corresponding concentration monitoring for informational purposes. Daily loading limits are provided in the Lake Champlain TMDL discussion in this factsheet. The 0.50 mg/L phosphorus concentration is achievable with the new treatment technology employed at the facility per TOGS 1.3.6 for ponded waterbodies.															

¹⁰ Ambient winter ammonia data obtained from RIBS Station 10-CORB-0.8. (Average percentile of 3 data points taken in 2004.)

¹¹ Ambient total phosphorus data obtained from RIBS Station 10-CORB-0.8. (Average of 10 data points taken in 2004.)

¹² Consistent with NYCRR 750-2.8(a)(5).

Permittee: Northstar 41, LLC
 Facility: Northstar Technology Center
 SPDES Number: NY0296520
 USEPA Non-Major/Class 01 Industrial

Date: October 5, 2022 v.1.13
 Permit Writer: Peter Maier
 Water Quality Reviewer: Peter Maier
 Full Technical Review

Outfall #	001	Description of Wastewater: Treated sanitary, swine wastes, boiler/cooling water blowdown, and filter backwash.													
		Type of Treatment: Fine screening, equalization, membrane bioreactors, sludge stabilization, ozone disinfection.													
Effluent Parameter	Units	Averaging Period	Existing Discharge Data			TBELs		Water Quality Data & WQBELs						ML	Basis for Permit Requirement
			Permit Limit	Existing Effluent Quality ⁴	# 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 Mercury	ng/L	Daily Max	New	New	0 / 0	-	-	-	-	0.7	H(FC)	50	GLCA	-	DOW 1.3.10
See Mercury section of this factsheet.															
Fecal Coliform	CFU/100 mL	30d Geo Mean	New	New	0 / 0	200	TOGS 1.3.3	1,300 ¹³	Narrative: The monthly geometric mean, from a minimum of five examinations, shall not exceed 200.				703.4	-	TBEL
		7d Geo Mean	New	New	0 / 0	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 are specified due to the sanitary contributions to the wastewater treatment plant.															
Total Residual Chlorine (TRC)	mg/L	Daily Max	New	New	0 / 0	2.0	TOGS 1.3.3	-	ND	0.005	A(C)	0.036	703.5	0.03	WQBEL
Limitations for chlorine are being added because of the proposed use of sodium hypochlorite as a water treatment chemical in the facility's cooling tower blowdown wastestream. The WQBEL for residual chlorine was calculated by multiplying the WQS by the chronic dilution ratio. Due to the low dilution, the calculated WQBEL is less than the TBEL and an effluent limitation equal to the WQBEL is appropriate.															

¹³ Ambient fecal coliform data obtained from RIBS Station 10-CORB-0.8. (Average of 10 data points taken in 2004.)

Appendix: Regulatory and Technical Basis of Permit Authorizations

The Appendix is meant to supplement the factsheet 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 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 (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 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 wasteload allocations (WLAs) are allocated equitably.

Interstate Water Pollution Control Agencies

Some POTWs may be subject to regulations of interstate basin/compact agencies including: Interstate Sanitation Commission (ISC), International Joint Commission (IJC), Delaware River Basin Commission (DRBC), Ohio River Valley Water Sanitation Commission (ORSANCO), and the Susquehanna River Basin Commission (SRBC). Generally, basin commission requirements focus principally on water quality and not treatment technology. However, interstate/compact agency regulations for the ISC, IJC, DRBC and NYC Watershed contain explicit effluent limits which must be addressed during permit drafting. 6 NYCRR 750-2.1(d) requires SPDES permits for discharges that originate within the jurisdiction of an interstate water pollution control agency, to include any applicable effluent standards or water quality standards (WQS) promulgated by that interstate agency.

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, 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). 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. Consistent with current case law¹⁴ and USEPA interpretation¹⁵ 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.

¹⁴ American Iron and Steel Institute v. Environmental Protection Agency, 115 F.3d 979, 993 n.6 (D.C. Cir. 1997)

¹⁵ 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)

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) for Industrial Facilities

A TBEL requires a minimum level of treatment for industrial point sources based on currently available treatment technologies and/or Best Management Practices (BMPs). CWA sections 301(b) and 402, ECL sections 17-0509, 17-0809 and 17-0811, and 6 NYCRR 750-1.11 require technology-based controls on effluents. TBELs are set based upon an evaluation of New Source Performance Standards (NSPS), Best Available Technology Economically Achievable (BAT), Best Conventional Pollutant Control Technology (BCT), Best Practicable Technology Currently Available (BPT), and/or Best Professional Judgment (BPJ).

USEPA Effluent Limitation Guidelines (ELGs) Applicable to Facility

In many cases, BPT, BCT, BAT and NSPS limitations are based on effluent guidelines developed by USEPA for specific industries, as promulgated under 40 CFR Parts 405-471. Applicable guidelines, pollutants regulated by these guidelines, and the effluent limitation derivation for facilities subject to these guidelines is in the [USEPA Effluent Limitation Guideline Calculations Table](#).

Best Professional Judgement (BPJ)

For substances that are not explicitly limited by regulations, the permit writer is authorized to use BPJ in developing TBELs. Consistent with section 402(a)(1) of the CWA, and NYS ECL section 17-0811, the Department is authorized to issue a permit containing "any further limitations necessary to ensure compliance with water quality standards adopted pursuant to state law". BPJ limitations may be set on a case-by-case basis using any reasonable method that takes into consideration the criteria set forth in 40 CFR 125.3. Applicable state regulations include 6 NYCRR 750-1.11. The BPJ limitation considers the existing technology present at the facility, the statistically calculated existing effluent quality for that parameter, and any unique or site-specific factors relating to the facility. Technology limitations generally achievable for various treatment technologies are included in TOGS 1.2.1, Attachment C. These limitations may be used for the listed parameters when the technology employed at the facility is listed.

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. 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 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 Department 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 Department 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 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 (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 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.

A Watershed Maximum Daily Load (WMDL) may be developed by the Department to account for the cumulative effect of multiple discharges of conservative toxic pollutants to ensure water quality standards are met in downstream segments. The WMDL uses a simple dilution model, assuming full mix in the receiving stream, to calculate the maximum allowable pollutant load that can be discharged and still meet water quality standards during critical low flow in downstream segments such as those with sensitive receptors (e.g. public water supply) or higher water classification. WQBELs are established to ensure that the cumulative mass load from point source discharges does not exceed the maximum allowable load to ensure permit limits are protective of water quality.

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 6NYCRR 702.9. 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)(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

Mercury

The multiple discharge variance (MDV) for mercury was developed in accordance with 6 NYCRR 702.17(h) "to address widespread standard or guidance value attainment issues including the presence of a ubiquitous pollutant or naturally high levels of a pollutant in a watershed." The first MDV was issued in October 2010, and subsequently revised and reissued in 2015; each subsequent iteration of the MDV is designed to build off the previous version, to make reasonable progress towards the water quality standard (WQS) of 0.7 ng/L dissolved mercury. The MDV is necessary because human-caused conditions or sources of mercury prevent attainment of the WQS and cannot be remedied (i.e., mercury is ubiquitous in New York waters at levels above the WQS and compliance with a water quality based effluent limitation (WQBEL) for mercury cannot be achieved with demonstrated effluent treatment technologies). The Department has determined that the MDV is consistent with the protection of public health, safety, and welfare. During the effective period of this MDV, any increased risks to human health are mitigated by fish consumption advisories issued periodically by the NYSDOH.

All surface water SPDES permittees are eligible for authorization by the MDV provided they meet the requirements specified in DOW 1.3.10.

There have been a number of changes to DOW 1.3.10, December 2020 (e.g., the criteria for mercury sources, the MMP Decision tree, and the MMPs themselves) which could result in less stringent effluent limitations. There are now criteria to determine if a facility has sources of mercury. Additionally, the types of MMPs have been restructured. MMP Type IV is appropriate for facilities that are not sources of mercury. A similar MMP type was not included in the 2010 or 2015 versions of DOW 1.3.10. DOW 1.3.10, Figure 1, is a decision tree, which includes the criteria used to determine if a facility has source of mercury and which MMP is appropriate for a facility.

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.

Permittee: Northstar 41, LLC
Facility: Northstar Technology Center
SPDES Number: NY0296520
USEPA Non-Major/Class 01 Industrial

Date: October 5, 2022 v.1.13
Permit Writer: Peter Maier
Water Quality Reviewer: Peter Maier
Full Technical Review

Best Management Practices (BMP) for Industrial Facilities

BMP plans are authorized for inclusion in NPDES permits pursuant to Sections 304(e) and 402 (a)(1) of the Clean Water Act, and 6 NYCRR 750-1.14(f). The regulations pertaining to BMPs are promulgated under 40 CFR Part 125, Subpart K. These regulations specifically address surface water discharges.