DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GREAT BAY TOTAL NITROGEN GENERAL PERMIT FOR WASTEWATER TREATMENT FACILITIES IN NEW HAMPSHIRE

NPDES GENERAL PERMIT: NHG58A000

The Draft Great Bay Total Nitrogen General Permit ("GBTN GP" or "General Permit") covers discharges of nitrogen from Wastewater Treatment Facilities (WWTFs) in the State of New Hampshire listed in Part 1. Parts 2 through 5 contain General Permit provisions, including applicability and coverage requirements, effluent limitations, and monitoring and reporting requirements.

Table of Contents

GREAT BAY TOTAL NITROGEN GENERAL PERMIT

NEW HAMPSHIRE GENERAL PERMIT (No. NHG58A000)

In compliance with the provisions of the Federal Clean Water Act, as amended (33 U.S.C. 1251 et seq.), the following General Permit authorizes discharges of nitrogen from wastewater treatment facilities (WWTFs) in New Hampshire to all waters within the Great Bay watershed, unless otherwise restricted, in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

The General Permit shall become effective on the first day of the calendar month immediately following 60 days after signature.

This General Permit and the authorization to discharge nitrogen supersedes the authorization to discharge nitrogen in the individual NPDES permits for all covered facilities. This General Permit will expire at midnight, 5 years from the last day of the month preceding the effective date.

Signed this day of .

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Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency
5 Post Office Square – Suite 100
Boston, MA 02109-3912

Part 1 – Applicability and Coverage

1.1 Subject Discharges

The 13 WWTFs located in New Hampshire that discharge wastewater into a surface water of the Great Bay watershed are covered by this General Permit. The discharge of all pollutants other than nitrogen shall continue to be covered under each WWTF's individual NPDES permit, including discharges of ammonia. These Permittees are listed below with their corresponding General Permit tracking number and their individual NPDES permit number, for reference.

Table 1 - List of Subject Facilities

Wastewater Treatment Facility	General Permit Tracking Number	Individual NPDES Permit Number
Rochester	NHG58A001	NH0100668
Portsmouth	NHG58A002	NH0100234
Dover	NHG58A003	NH0101311
Exeter	NHG58A004	NH0100871
Durham	NHG58A005	NH0100455
Somersworth	NHG58A006	NH0100277
Pease ITP	NHG58A007	NH0090000
Newmarket	NHG58A008	NH0100196
Epping	NHG58A009	NH0100692
Newington	NHG58A010	NHG581141[1]
Rollinsford	NHG58A011	NH0100251
Newfields	NHG58A012	NH0101192
Milton	NHG58A013	NH0100676

[1] The Newington WWTF is currently authorized to discharge under the General Permit for the Discharge of Wastewater from Certain Publicly Owned Treatment Works Treatment Plants (POTW Treatment Plants) and Other Treatment Works Treating Domestic Sewage in the State of New Hampshire.

1.2 Geographic Coverage Area

Facilities authorized by this General Permit may discharge nitrogen into Class B waters of the Great Bay watershed in the State of New Hampshire, except as provided in Section 1.3, immediately below, unless otherwise restricted by the State Water Quality Standards, New Hampshire RSA 485-A:8 (or as revised) and the New Hampshire Code of Administrative Rules, Chapter Env-Wq 1700 (or as revised).

1.3 Limitations on Coverage

Discharges from facilities not listed in Part 1.1 above are excluded from coverage under this General Permit. Discharges from non-WWTF outfalls are excluded from coverage under this General Permit. Discharges to Class A waters are excluded from coverage under this General Permit.

Part 2 – Effluent Limitations and Monitoring Requirements

2.1 Effluent Limitations and Monitoring Requirements

During the period beginning on the effective date and lasting through expiration, each Permittee is authorized to discharge nitrogen from wastewater treatment facilities to the state's Class B receiving waters through each facility's designated outfall for treated wastewater effluent. Each outfall discharging wastewaters shall be limited and monitored as specified in Table 2 below.

Table 2 - Effluent Limitations and Monitoring Requirements

Wastewater Treatment Facility	Effluent Limitations	Reporting Requirements					Monitoring Requirements[1,2]	
	Total Nitrogen	Total Nitrogen		Total Kjeldahl Nitrogen	Nitrate + Nitrite Nitrogen	Ammonia Nitrogen		
	Annual Average (lb/day)[3]	Monthly Average (lb/day)[4]	Monthly Average (mg/L)[4]	Monthly Average (mg/L)[4]	Monthly Average (mg/L)[4]	Monthly Average (mg/L)	Monitoring Frequency	Sample Type[5]
Rochester	198	Report	Report	Report	Report	Report	1/week	Composite
Portsmouth[6]	269	Report	Report	Report	Report	Report	1/week	Composite
Dover	164	Report	Report	Report	Report	Report	1/week	Composite
Exeter	108	Report	Report	Report	Report	Report	1/week	Composite
Durham	60	Report	Report	Report	Report	Report	1/week	Composite
Somersworth	96	Report	Report	Report	Report	Report	1/week	Composite
Pease ITP[6]	87	Report	Report	Report	Report	Report	1/week	Composite
Newmarket	35	Report	Report	Report	Report	Report	1/week	Composite
Epping	37	Report	Report	Report	Report	Report	1/week	Composite
Newington	16	Report	Report	Report	Report	Report	1/week	Composite
Rollinsford	12	Report	Report	Report	Report	Report	1/week	Composite
Newfields	16	Report	Report	Report	Report	Report	1/week	Composite
Milton	11	Report	Report	Report	Report	Report	1/week	Composite

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. The Permittees shall report the results to the Environmental Protection Agency Region 1 (EPA) and the State of any additional testing above that required herein, if testing is in accordance with 40 Code of Federal Regulations (C.F.R.) Part 136.
2. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittees shall monitor according to sufficiently sensitive test procedures (*i.e.*, methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters. A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation

established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. The limit is an annual load limit (in units of average pounds per day) and shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average load (in lb/day) for the reporting month and the monthly average loads (in lb/day) of the previous eleven months.
4. Total Nitrogen concentration shall be calculated from the sum of total Kjeldahl nitrogen (TKN) and nitrate + nitrite analyses of concurrently collected samples. The method used for each parameter must have a minimum level (ML) less than or equal to 0.25 mg/L. If any results are below the ML, a value of zero for that parameter shall be used for calculating total nitrogen. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen. The total nitrogen monthly average mass loading reported each month shall be calculated as follows: Total Nitrogen (lb/day) = average monthly total nitrogen concentration (mg/L) * average monthly flow (MGD) * 8.345
5. Each composite sample will consist of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.
6. The City of Portsmouth is the operator for both the Portsmouth and Pease ITP wastewater treatment facilities. The City shall report the rolling annual average load from each facility and compliance will be based on the sum of the discharges compared to the total load allocation of 356 lb/day (*i.e.*, 269 lb/day for Portsmouth plus 87 lb/day for Pease ITP).

2.2 Nitrogen Optimization Plan (NOP)

1. The Permittees shall develop, implement, and maintain a Nitrogen Optimization Plan (NOP) which will evaluate alternative methods of operating the existing wastewater treatment facility to optimize the removal of nitrogen throughout the year, including, but not limited to, operational changes designed to enhance nitrification and denitrification, incorporation of anoxic zones, septage receiving policies and procedures, and side-stream management.

2. The NOP shall be completed and certified by the Permittees within 12 months after the effective date of this General Permit. The Permittees shall certify the NOP has been prepared, that it meets the requirements of this permit, and that it reduces the discharge of nitrogen to the extent practicable. The NOP and certification shall be signed in accordance with the requirements identified in 40 C.F.R. § 122.22. A copy of the NOP and certification shall be maintained at each facility and submitted to EPA and NHDES annually as an electronic attachment through NetDMR, by February 15 of the

year following its completion.

3. The NOP must be re-evaluated if any significant changes to the facility's operations occur. The Permittees shall amend and update the NOP within 14 days after any changes at the facility affecting the NOP. Such changes may include, but are not limited to changes in the design, construction, operation, or maintenance of the facility, which have a significant effect on the potential for the discharge of nitrogen to the waters of the United States. The amended NOP shall be certified in accordance with the requirements identified in 40 C.F.R. § 122.22.

4. The Permittees shall certify annually that the facility is in compliance with the requirements of the NOP. This certification shall (1) include a summary of activities related to optimizing nitrogen removal efficiencies, (2) document the annual nitrogen discharge load from the facility, and (3) track trends relative to the previous year. If the facility is not in compliance with any aspect of the NOP, the annual certification shall state the non-compliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in 40 C.F.R. § 122.22. The Permittees shall keep a copy of the current NOP and all NOP certifications (*e.g.*, the initial certification, re-certifications, and annual certifications) signed during the effective period of this permit at the facility and shall provide the certifications to EPA and NHDES annually as an electronic attachment through NetDMR, by February 15.

2.3 Adaptive Management Ambient Monitoring Program

The Permittees shall all participate in the annual ambient monitoring program detailed below. Each Permittee shall be responsible for a percentage of the overall ambient monitoring cost equivalent to the percentage of the design flow of their WWTF(s) divided by the total design flow of all WWTFs covered by the permit.

Head of Tide Chemistry

Monitoring shall be conducted twice monthly from March through December and monthly from January through February (as conditions allow) at eight head of tide locations in order to characterize annual nitrogen loads to the estuary. Table 3 lists the head of tide station for each tributary. Sample parameters to include:

Grab Samples:

- Total Dissolved Nitrogen (TDN)
- Ammonia-N (NH3)
- Nitrite + Nitrate-N
- Total Particulate Nitrogen (TPN)

Table 3 - Head of Tide Stations for Each Tributary

Head of Tide Station	Tributary
05-OYS	Oyster River
02-WNC	Winnicut River
09-EXT	Exeter/Squamscott River
05-LMP	Lamprey River
05-BLM	Bellamy River
07-CCH	Cocheco River
05-SFR	Salmon Falls River
02-GWR	Great Works River

Estuary Chemistry

Monitoring shall be conducted once per month from April through December at 17 stations in the estuary shown in Tables 4 and 5 below. Eleven of these stations (Table 4) are current trend monitoring stations, including nine that have datasondes. Additional monitoring stations (Table 5) were identified in order to provide more comprehensive spatial coverage. The stations with datasondes is expanded to include six additional stations (GRBGBW, GRBSF, GRBCML, GRBLPR, GBRLLB, and LAMP02) shown in Figure 1 below.

Sampling at each station in Tables 4 and 5 is to be conducted between mid-ebb and low tide at a depth of 1 meter from the surface at each station. Note that all sampling locations do not need to be sampled on the same day. Sample parameters to include:

Grab Samples:

- Total Dissolved Nitrogen (TDN)
- Ammonia-N (NH_3)
- Nitrite + Nitrate-N
- Total Particulate Nitrogen (TPN)
- Dissolved Oxygen Concentration
- Dissolved Oxygen Saturation
- Chlorophyll-a corrected for pheophytin
- Light Attenuation Coefficient (K_d)

Datasondes:

- Dissolved Oxygen Concentration
- Dissolved Oxygen Saturation
- pH
- Turbidity
- Salinity
- Specific Conductance
- Water Temperature

- Chlorophyll-a

Table 4 - 2018 Monitoring Stations

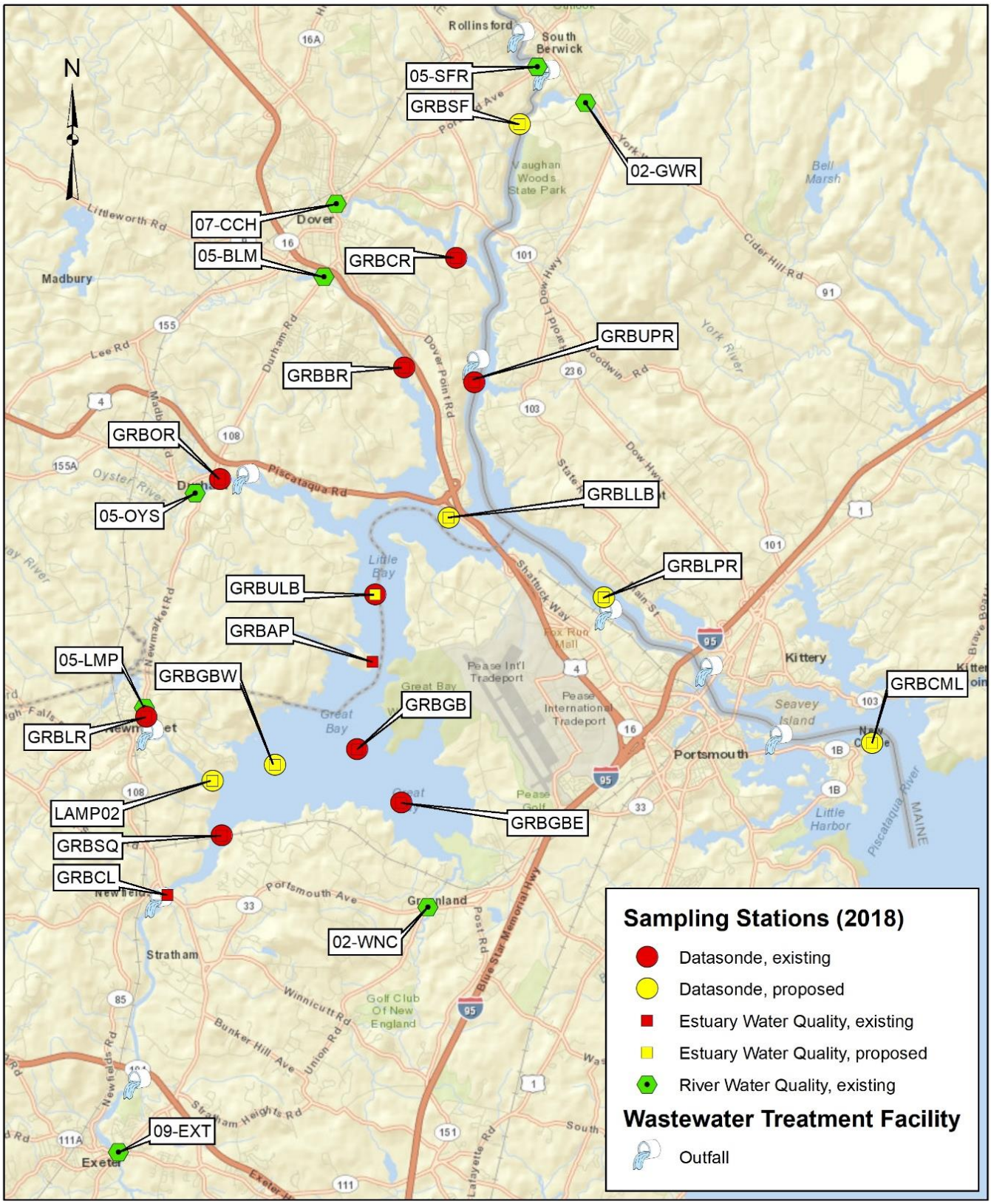
Station	Location	Latitude	Longitude
GRBAP	Jackson Estuarine Laboratory	43.0922	70.8650
GRBCL	Chapmans Landing	43.0394	70.9283
GRBGB	Great Bay Datasonde	43.0722	70.8694
GRBLR	Lamprey River Datasonde	43.0800	70.9344
GRBOR	Oyster River Datasonde	43.140	70.9110
GRBSQ	Squamscott River Datasonde	43.0417	70.9222
GRBUPR	Upper Piscataqua River Datasonde	43.1589	70.8302
GRBGBE*	Great Bay – Eastern Lobe Datasonde	43.06004	70.85593
GRBULB	Upper Little Bay Datasonde	43.10486	70.86738
GRBBR	Bellamy River Datasonde	43.1590	70.8537
GRBCR	Cocheco River Datasonde	43.183891	70.837240

Table 5 - Additional Monitoring Stations

Station	Location	Latitude	Longitude
GRBCML	Coastal Marine Laboratory Datasonde	43.0724	70.7103
GRBSF	Salmon Falls River Datasonde	43.2142	70.8172
GRBGBW*	Great Bay – Western Lobe Datasonde	43.06887	70.89481
GRBLPR	Lower Piscataqua River Datasonde	43.10628	70.79264
GRBLLB	Lower Little Bay Datasonde	43.12623	70.86580
LAMP02	Lower Lamprey River Datasonde	43.065258	70.914041

* One datasonde shall be alternated between GRBGBW and GRBGBE each year.

Figure 1: Great Bay Estuary Ambient Monitoring Stations



Estuary Biology

A benthic aquatic community assessment shall be conducted annually using Sediment Profile Imaging (SPI) and benthic grab samples. SPI samples should be taken at 100 randomly dispersed monitoring stations throughout the saltwater portion of the tributaries and the estuary. Benthic grab samples shall be collected at 8 stations each year (stations should coincide with estuarine chemistry and SPI stations and rotated each year). The SPI samples will be used to determine the presence and type of epifaunal and infaunal species, the depth of the redox discontinuity layer, presence/absence of eelgrass, and presence/absence of macroalgae. Benthic grab samples will be sorted, and infauna identified to the lowest taxon possible.

Aerial mapping of eelgrass beds throughout the estuary shall be mapped and ground-truthed each year for each assessment zone within the Great Bay Estuary. For each assessment zone where eelgrass is present a survey shall be done once per year during July/August in a representative location. In each meadow a series of randomly dropped quadrats shall be dropped within the meadow to determine density, biomass, percent cover, and abundance of epiphytic growth. Additionally, the percent cover of macroalgae in each plot shall be determined and the deep edge of the meadow shall be marked and monitored each year.

Assessment Zones within the Great Bay Estuary include:

- Squamscott River North
- Squamscott River South
- Lamprey River North
- Lamprey River South
- Winnicut River
- Great Bay (proper)
- Little Bay
- Oyster River
- Bellamy River
- Cocheco River
- Salmon Falls River
- Upper Piscataqua River
- Lower Piscataqua River – North
- Lower Piscataqua River – South
- North Mill Pond
- South Mill Pond
- Portsmouth Harbor
- Little Harbor/Back Channel
- Sagamore Creek
- Gerrish Island
- Odiorne Point
- Berry’s Brook

GPS coordinates shall be recorded for all SPI, benthic grab, and eelgrass monitoring locations.

The permittees covered under this General Permit shall coordinate to submit an annual ambient monitoring report summarizing the monitoring results for the previous calendar year, along with all supporting data in spreadsheet format, via email to EPA (R1NPDESReporting@epa.gov) and NHDES (WQdata@des.nh.gov) by November 1 of each year.

Each Permittee shall also submit an annual certification each year confirming that they have participated in the ambient monitoring program to the extent required by the General Permit and that the annual report and supporting data (described above) have been submitted to EPA and NHDES as described above. This annual certification shall be submitted through NetDMR as an electronic attachment to the monthly DMR submittal due November 15 of each year. See Part 4 of this General Permit for more information regarding NetDMR.

2.4 State Permit Conditions

1. This NPDES permit is issued by the EPA under Federal law. Upon final issuance by the EPA, the NHDES may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action and shall not affect the validity or status of the permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension or revocation.
2. The Permittees shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485- A:12).

Part 3 – Obtaining Authorization to Discharge

3.1 Obtaining Coverage

To obtain coverage under the GBTN GP, facilities identified in Part 1.1 of this General Permit may submit a notice of intent (NOI) in accordance with 40 C.F.R. § 122.28(b)(2)(i) & (ii). The contents of the notice of intent shall include at a minimum, the legal name and address of the owner or operator, the facility name and address, type of facility or discharges, the receiving stream(s) and be signed by the operator in accordance with the signatory requirements of 40 C.F.R. § 122.22. All NOIs submitted after December 21, 2020 must be submitted electronically. The NOI shall be submitted within 60 days from the effective date of the General Permit and authorization to discharge will be effective upon the date indicated in written notice from EPA.

Based on 40 C.F.R. § 122.28(b)(2)(vi), the Director may notify a discharger (or treatment works treating domestic sewage) that it is covered by a general permit, even if the discharger (or treatment works treating domestic sewage) has not submitted a notice

of intent to be covered. EPA has determined that the 13 facilities identified in Part 1.1 all meet the eligibility requirements for coverage under the GBTN GP and may be authorized to discharge under the General Permit by this type of notification. Such authorization to discharge will be effective upon the date indicated in written notice from EPA.

The nitrogen requirements in this General Permit, once effective, will supersede the nitrogen requirements in each Permittee's individual NPDES permit. The Towns of Exeter and Newmarket have effluent limits for total nitrogen in their individual permits which are both expired. Both permittees have submitted a timely application for permit renewal and the GBTN GP represents the reissuance of the authorization to discharge for nitrogen only. All other pollutants will continue to be regulated by the current, or administratively continued, individual permits until such permits are reissued in the future.

3.2 When an Individual NPDES Permit for Nitrogen Discharges May Be Requested

In accordance with 40 C.F.R. § 122.28(b)(3)(iii), any owner or operator authorized by this General Permit may request to be excluded from the coverage of this General Permit by applying for an individual permit which would include authorization to discharge nitrogen. The owner or operator shall submit an application under § 122.21, with reasons supporting the request, to the Director no later than 90 days after the publication by EPA of the Notice of Availability of the General Permit in the Federal Register. The request shall be processed under Part 124. The request shall be granted by issuing of an individual permit if the reasons cited by the owner or operator are adequate to support the request.

When an individual NPDES permit which includes the authorization to discharge nitrogen is issued to an owner or operator otherwise subject to this General Permit, the applicability of this General Permit to that owner or operator is automatically terminated on the effective date of the individual permit.

Part 4 – Monitoring, Recordkeeping and Reporting Requirements

The approved analytical procedures found in 40 C.F.R. Part 136 shall be used unless other procedures are explicitly required in the permit. The Permittees shall monitor and report sampling results to EPA and NHDES within the time specified within the permit.

Unless otherwise specified in this permit, the Permittees shall submit reports, requests, and information and provide notices in the manner described in this section.

4.1 Submittal of DMRs Using NetDMR

Upon the effective date of the General Permit, each Permittee shall submit monthly effluent monitoring data in discharge monitoring reports (DMRs) to EPA and NHDES electronically using NetDMR no later than the 15th day of the month following the completed reporting period. Permittees shall submit DMRs and reports required under this permit electronically to EPA using NetDMR. NetDMR is accessible through EPA's Central Data Exchange at

https://cdx.epa.gov. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or NHDES.

4.2 Submittal of Reports as NetDMR Attachments

Reports required in this General Permit shall be submitted electronically as a NetDMR attachment. Since the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this permit.

Part 5 – Administrative Requirements

5.1 Termination of Operations

Permittees shall notify EPA and NHDES in writing with any request to terminate the authorization to discharge under this General Permit, at the addresses listed below.

U.S. Environmental Protection Agency Region I
Enforcement Appliance and Assurance Division (ECAD)
Water Technical Unit (04-SMR)
5 Post Office Square, Suite 100
Boston, MA 02109-3912

New Hampshire Department of Environmental Services
Water Division, Wastewater Engineering Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

5.2 Continuation of this General Permit after its Expiration

If this General Permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act (5 U.S.C. 558(c)) and 40 C.F.R. § 122.6) and remain in force and in effect for discharges that were authorized prior to expiration. Any Permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earliest of:

1. Authorization under a reissuance of this General Permit; or
2. The Permittee's submittal of a Notice of Termination; or
3. Issuance or denial of an individual permit for the Permittee's discharge of nitrogen; or
4. A formal permit decision by EPA not to reissue this General Permit, at which time the Permittee must seek coverage for the discharge of nitrogen under an alternative General Permit or an individual permit.

If a facility is not notified by EPA that is it covered under a reissued permit, or does not submit a timely, appropriate, complete, and accurate NOI requesting authorization to discharge under the reissued permit, or a timely request for authorization under an individual or alternative General Permit, authorization under this permit will terminate on the effective date of the reissued permit, unless otherwise specified in the reissued permit.