

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912**

FACT SHEET

**DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO
DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO
THE CLEAN WATER ACT (CWA)**

NPDES PERMIT NUMBER: NHG590000

PUBLIC NOTICE START AND END DATES:

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1.0 Coverage Under This Permit

The Environmental Protection Agency, Region 1 (“EPA” or “Region 1”), is issuing the draft National Pollutant Discharge Elimination System (NPDES) General Permit for New Hampshire Medium Wastewater Treatment Facilities (“NH Medium WWTF GP”) that are treatment works treating domestic sewage (collectively “facilities”) which discharge treated wastewater to certain Class B surface waters of the State of New Hampshire. The term “treatment works treating domestic sewage” is defined as a publicly owned treatment works (“POTW”) or any other sewage sludge or wastewater treatment system involved in the storage, treatment, recycling, and reclamation of municipal or domestic sewage (see 40 CFR § 122.2).

This Fact Sheet contains a summary of the following:

- Types of discharges eligible/ineligible for coverage;
- Proposed effluent limitations;
- Monitoring requirements;
- Reporting requirements;
- Record-keeping requirements;
- Instructions for public participation; and
- Legal information supporting this general permit.

This Fact Sheet provides the principal facts and the significant legal and policy questions considered during the development of the draft General Permit.

1.1 Background Information

General Permit NHG590000 applies to eligible discharges in New Hampshire and is referred to as the “New Hampshire Medium Wastewater Treatment Facility General Permit” (“NH Medium WWTF GP” or the “General Permit”) throughout this Fact Sheet and in the draft General Permit. The NH Medium WWTF GP will replace the individual permits for eligible dischargers upon the date they are authorized for coverage. All eligible dischargers either have an individual permit that is currently effective or has been administratively continued in accordance with 40 CFR § 122.6.

Section 301(a) of the Clean Water Act (the “Act”) provides that the discharge of pollutants is unlawful except in accordance with a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the Act. EPA’s regulations provide for the issuance of two types of NPDES permits: individual permits and general permits. Individual permits are issued to individual discharges and are developed according to the specific nature of each facility and the receiving water into which each facility discharges. Under the authority provided at 40 CFR § 122.28, EPA may issue a general permit to regulate one or more categories or subcategories of “treatment works treating domestic sewage,” if the sources of “treatment works treating domestic sewage” within each category or subcategory involve the same or substantially similar types of operations, discharge the same types of wastes, require

the same effluent limitations or operating conditions, require the same or similar monitoring requirements, and, in the opinion of the Director, are more appropriately controlled under a general permit than under individual permits (40 CFR § 122.28(2)(ii)(A)(B)(C) and (D)).

Based on these factors, EPA has determined that discharges from POTWs and other treatment works treating domestic sewage qualify for coverage under a general permit for the following reasons: (1) the point sources eligible for coverage under the General Permit are located in the same geographic area (*i.e.*, in New Hampshire) and employ the same or similar operations in providing a minimum of secondary treatment to domestic wastewater; (2) the wastewater discharged from these sources is similar in composition and requires the same or similar effluent limitations, monitoring requirements, and other conditions to be effectively controlled; and (3) in the opinion of the Director, these point sources consist of multiple facilities within a single category of discharges that are more appropriately controlled and efficiently regulated under a general permit than under individual permits.

Once issued, the NH Medium WWTF GP will enable eligible facilities to maintain compliance with the Clean Water Act, will extend new environmental and regulatory controls to these dischargers, and will reduce EPA's permit issuance backlog of pending individual permit applications and expired permits.

1.2 Eligibility

Coverage under the NH Medium WWTF GP is available to all privately and publicly owned treatment works treating domestic sewage in New Hampshire, unless excluded in Part 1.3 below. All eligible discharges are listed in Attachment E of the General Permit.

1.3 Exclusions

The following discharges are ineligible for coverage under the NH Medium WWTF GP:

1. Any facility that is not defined as a POTW or a treatment works treating domestic sewage, as defined at 40 CFR § 403.3 and 40 CFR § 122.2, respectively;
2. Any facility with design flow less than 1 MGD or greater than 5 MGD.
3. Any facility that does not provide, at a minimum, secondary treatment to the discharge;
4. Any facility that discharges to a Class A receiving water;
5. Any facility with one or more active designated Combined Sewer Overflow (CSO) outfalls; and
6. Any "New Source" as defined in 40 CFR § 122.2.

2.0 Statutory and Regulatory Authority for Setting NPDES Permit Requirements

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. § 1251-1387 and commonly known as the Clean Water Act (CWA), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except to the extent authorized under specific

provisions of the CWA, one of which is § 402. *See* CWA §§ 301(a), 402(a). Section 402(a) established one of the CWA's principal permitting programs, the NPDES Permit Program. Under this section, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" on the condition that the discharge will comply with the standards specified in certain other provisions of the statute (e.g., CWA §§ 301, 306 and 403). CWA § 402(a)(1). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA's NPDES permit program are generally found in 40 CFR Parts 122, 124, 125, and 136.

"Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Sections 301 and 402 of the CWA. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992). Technology-based effluent limitations (TBELs) represent the minimum level of pollutant discharge control that must be satisfied under Sections 301(b) and 402(a)(1) of the CWA. *See also* 40 CFR § 125.3(a). When limits more stringent than technology-based limits are needed to maintain or achieve compliance with state water quality standards (WQS), then NPDES permit must include water quality-based limitations. *See* CWA §§ 301(b)(1)(C) and 401; 40 CFR §§ 122.4(d), 122.44(d)(1) and (5), 124.53, and 124.55.

2.1 Technology-Based Requirements

Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. *See* CWA § 301(b). As a class, publicly owned treatment works (POTWs) must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 301(b)(1)(B). The performance level for POTWs is referred to as "secondary treatment." Secondary treatment is comprised of technology-based requirements expressed in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS) and pH. *See* 40 CFR Part 133.

Under CWA § 301(b)(1), POTWs must have achieved effluent limits based upon secondary treatment technology by July 1, 1977. Since all statutory deadlines for meeting various treatment technology-based effluent limitations established pursuant to the CWA have expired, when technology-based effluent limits are included in a permit, compliance with those limitations is from the date the issued permit becomes effective. *See* 40 CFR § 125.3(a)(1).

2.2 Water Quality-Based Requirements

The CWA and federal regulations also require that permit limits based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. *See* CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1), 122.44(d)(5).

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 CFR § 131.10-12. Generally, WQSs consist of three parts: 1) the designated use or uses assigned for a water body or a segment of a water body; 2) numeric or narrative water quality criteria sufficient to protect the assigned designated use(s); and 3) antidegradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 CFR § 131.12. The applicable State WQSs can be found in the New Hampshire Code of Administrative Rules, Surface Water Quality Regulations, Chapter Env-Wq 1700, *et seq.* *See also generally*, N.H. Rev. Stat. Title L, Water Management and Protection, Chapters 485-A, Water Pollution and Waste Disposal.

As a matter of state law, state WQSs specify different water body classifications, each of which is associated with certain designated uses and particular numeric and narrative water quality criteria intended to help attain the designated uses. Then the state assigns one of the water body classifications to each water body in the state. When using chemical-specific numeric criteria to develop permit limitations, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to average monthly limits.

When permit effluent limitation(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) based on a “calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use,” 2) based on a “case-by-case basis” using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A-C). To ensure compliance with applicable narrative water quality standards, the Region has included numeric water quality-based effluent limitations and/or monitoring requirements in lieu of narrative limitations, as described in greater detail below. *See* sections 3.1.9-11. These more specific requirements related to WET testing, pollutant scans, benthic studies, and visual inspections of the receiving water provide more direction to permittees as to how to ensure compliance with the narrative water quality standards. EPA may remove or reduce these new requirements in the future and/or implement an alternative permitting approach if EPA finds that the additional data are no longer necessary to protect these water quality standards.

2.2.2 Antidegradation

Federal regulations found at 40 CFR § 131.12 require states to develop and adopt a statewide antidegradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the antidegradation policy ensures maintenance of high-quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water, unless the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

The New Hampshire Antidegradation Policy, found at Env-Wq 1708, applies to any new or increased activity that would lower water quality or affect existing or designated uses, including increased loadings to a water body from an existing activity. The antidegradation regulations focus on protecting high quality waters and maintaining water quality necessary to protect existing uses. Discharges that cause “significant degradation” are defined in NH WQS (Env-Wq 1708.09(a)) as those that use 20% or more of the remaining assimilative capacity for a water quality parameter in terms of either concentration or mass of pollutants or flow rate for water quantity. When NHDES determines that a proposed increase would cause a significant impact to existing water quality, the applicant must provide documentation to demonstrate that the lowering of water quality is necessary, that it will provide net economic or social benefit in the area in which the water body is located, and that the benefits of the activity outweigh the environmental impact caused by the reduction in water quality. *See Env-Wq 1708.10(b).*

This permit is being issued with effluent limitations and conditions sufficiently stringent to satisfy the State’s antidegradation requirements, including the protection of the existing uses of the receiving water.

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads.

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation’s waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, EPA released guidance on November 19, 2001, for the preparation of an integrated “List of Waters” that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) unimpaired and not threatened for all designated uses; 2) unimpaired waters for some uses and not assessed for others; 3) insufficient information to make assessments for any uses; 4) impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL essentially provides a pollution budget

designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from point sources and non-point sources, determines the maximum load of the pollutant that the water body can tolerate while still attaining WQSs for the designated uses, and allocates that load among to the various sources, including point source discharges, subject to NPDES permits. *See* 40 CFR § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation (WLA) for a NPDES permitted discharge, the effluent limitation in the permit must be “consistent with the assumptions and requirements of any available WLA”. 40 CFR § 122.44(d)(1)(vii)(B).

EPA confirms that for all eligible dischargers under this General Permit, there are no approved TMDLs with any WLAs which have not yet been incorporated into the facility’s existing individual permit. Therefore, no new effluent limitations are proposed in the draft General Permit based on a TMDL and any existing permit limitations based on a TMDL will be carried forward into each facility’s authorization to discharge.

Additionally, the Somersworth individual permit requires Somersworth to participate in the Salmon Falls River Monitoring Program which was established based on the 1999 TMDL for the Salmon Falls River¹. This requirement is also carried forward under this General Permit.

2.2.4 Reasonable Potential

Pursuant to CWA § 301(b)(1)(C), 33 U.S.C. § 1311(b)(1)(C), and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. In addition, permit limits “must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality.” 40 CFR § 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. *See* 40 CFR § 122.44(d)(1)(ii).

Given that EPA guidance² directs that these reasonable potential analyses be based on critical conditions, EPA uses the pollutant concentrations based on all available information provided to EPA during the development of the permit. As discussed in more detail in the pollutant-specific sections below, this information includes data from the Permittee’s most recent

¹ Available at: <https://attains.epa.gov/attains-public/api/documents/actions/MEDEP/1029/107089>

² See 2010 NPDES Permit Writer’s Manual, chapter 6 available at: https://www.epa.gov/sites/default/files/2015-09/documents/pwm_chapt_06.pdf

application, DMR data during the review period, and any other available information included in the administrative record.

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQs, the permit must contain WQBELs for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

If the permitting authority determines that the discharge of a pollutant will not cause, have the reasonable potential to cause, or contribute to an excursion above WQs, the permit does not need to contain WQBELs for that pollutant. However, EPA must ensure that the discharge of that pollutant does not increase during the permit term to the point that would violate water quality standards. Therefore, Part II.B.1 (Unauthorized Discharges) of the permit includes the following provision to ensure that EPA's reasonable potential analyses (for all pollutants) remain protective throughout the life of the permit, and which would also clearly articulate the scope of the protections afforded to the Permittee pursuant to CWA section 402(k):

“Any pollutant loading greater than the proposed discharge (the “proposed discharge” is based on the chemical-specific data and the facility’s design flow as described in the permit application, or any other information provided to EPA during the permitting process) is not authorized by this permit.”

EPA notes that such increases may be allowable, but the Permittee must first submit a request to EPA to authorize such an increase. This request will allow EPA to conduct an updated reasonable potential analysis to reassess whether a WQBEL is needed for the newly proposed discharge. Permit modification or reissuance may be required before the proposed discharge would be authorized.

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQs, or the State waives, or is deemed to have waived, its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft General Permit will be certified.

Failure to provide such a citation waives the right to certify as to that condition. EPA includes properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA's permit appeal procedures of 40 CFR Part 124.

In addition, the State may provide a statement of the extent to which any condition of the Draft General Permit can be made less stringent without violating the requirements of State law.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of State law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by State law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 CFR § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit limitations based upon WQSs and State requirements are contained in 40 CFR §§ 122.4(d) and 122.44(d).

2.3 Effluent Flow Requirements

Sewage treatment plant discharge is encompassed within the definition of "pollutant" and is subject to regulation under the CWA. The CWA defines "pollutant" to mean, *inter alia*, "municipal...waste" and "sewage...discharged into water." 33 U.S.C. § 1362(6).

Generally, EPA uses a discharger's effluent flow volume both to determine whether an NPDES permit needs certain effluent limitations and to calculate the limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in its reasonable potential and WQBEL calculations to ensure compliance with WQSs under CWA § 301(b)(1)(C). Should a facility's effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations might not be sufficiently protective (*i.e.*, might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a lower discharge flow may have a reasonable potential to do so at a higher flow due to the decreased dilution in the receiving water (which, conversely, means there will be a higher concentration of the pollutants). In order to ensure that the assumptions underlying EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" effluent flow assumptions through imposition of permit conditions for effluent flow.³ In this regard, the effluent flow limitation is a component of an WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit may also be necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on wastewater effluent flow is within EPA's authority to condition a permit to carry out the objectives of the Act. See CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a)

³ EPA's regulations regarding "reasonable potential" require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," *id* 40 CFR §122.44(d)(1)(ii). Both the effluent flow and receiving water flow may be considered when assessing reasonable potential. *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 599 (EAB 2010). EPA guidance directs that this "reasonable potential: analysis be based on "worst-case" conditions. See *In re Washington Aquaduct Water Supply Sys.* 11 E.A.D. 565, 584 (EAB 2004).

and (d), 122.43 and 122.44(d). A condition on the discharge designed to ensure the WQBEL and reasonable potential calculations account for “worst case” conditions is encompassed by the references to “condition” and “limitations” in CWA §§ 402 and 301 and implementing regulations, as they are designed to assure compliance with applicable water quality regulations, including antidegradation. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of wastewater effluent is consistent with the overall structure and purposes of the CWA.

Setting limits on effluent flow volumes is within EPA’s authority to condition a permit to carry out the objectives and satisfy the requirements of the CWA. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d), 122.43 and 122.44(d). Regulating the quantity of pollutants in the discharge through a restriction on the quantity of effluent is also consistent with EPA’s authorities under the CWA.

As provided in Part V.B.1 (Standard Conditions) of the proposed permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Consequently, an effluent flow limit is a permit condition that relates to the Permittee’s duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works. *See* 40 CFR §§ 122.41(d), (e).

EPA has also included the effluent flow limit in the permit to minimize or prevent infiltration and inflow (I/I) that may result in unauthorized discharges and compromise proper operation and maintenance of the facility. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes or deteriorated joints. Inflow is extraneous flow added to the collection system that enters the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity available for treatment and the operating efficiency of the treatment works and to properly operate and maintain the treatment works.

Furthermore, the extraneous flow due to significant I/I greatly increases the potential for sanitary sewer overflows (SSOs) in separate systems. Consequently, the effluent flow limit is a permit condition that relates to the permittee’s duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works. *See* 40 CFR §§ 122.41(d), (e).

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

Sections 308(a) and 402(a)(2) of the CWA and the implementing regulations at 40 CFR Parts 122, 124, 125, and 136 authorize EPA to include monitoring and reporting requirements in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(h), (j), and (l)(9), 122.43(a), 122.44(i) and 122.48. The Draft General Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), State water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR Part 122.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 136 be used for sampling and analysis unless other procedures are explicitly specified. See 40 CFR § 122.41 (j)(4). Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.⁴ This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 CFR § 122.21(e)(3) (completeness), 40 CFR § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level⁵ (ML) is at or below the level of the effluent limitation

⁴ Fed. Reg. 49,001 (Aug 19, 2014).

⁵ 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). Minimum levels may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to 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 lab, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." See Fed. Reg. 49,001 (Aug. 19, 2014).

- established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications (or pollutant scans in Part II.I of the General Permit), the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
 - The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

The Draft General Permit requires the Permittee to report monitoring results obtained during each calendar month to EPA and the State electronically using NetDMR. The Permittee must submit a Discharge Monitoring Report (DMR) for each calendar month no later than the 15th day of the month following the completed reporting period.

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 CFR §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>. Further information about NetDMR can be found on EPA's NetDMR support portal webpage.⁶

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the Final Permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Certain exceptions are provided in the permit, such as for providing written notifications required under the Part V Standard Conditions.

2.5 Standard Conditions

The Standard Conditions, included as Part V of the Draft General Permit, are based on applicable regulations found in the EPA's NPDES permitting regulations. *See* 40 CFR Part 122.41 *See also, generally,* 40 CFR Part 122.

2.6 Anti-backsliding

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified to include with less stringent limitations or conditions than those contained in a previous permit except in compliance with one of the specified exceptions to those requirements. *See* CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(l). Anti-backsliding

⁶ <https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information>

provisions apply to effluent limits based on technology, water quality and/or state certification requirements.

All proposed limitations in the draft General Permit are at least as stringent as limitations included in each facility's current individual permit unless specific conditions exist to justify one of the exceptions listed in accordance with CWA §§ 402(o) and 303(d)(4). Discussion of any applicable exceptions are discussed in sections that follow. Therefore, the draft General Permit complies with the anti-backsliding requirements of the CWA.

2.7 Schedules of Compliance

According to 40 CFR § 122.47, a permit may, when appropriate, specify a schedule of compliance leading to compliance with the CWA and regulations. New Hampshire regulations for schedules of compliance in NPDES Permits can be found at Env-Wq 1701.03. Under NPDES regulations at 40 CFR § 122.47(a)(1), schedules must lead to compliance "as soon as possible."

For any compliance schedules that are currently effective in an individual permit, such compliance schedules will be carried forward with the same due date(s) that are required under that individual permit, as specified in Part II.H.4 of the draft General Permit.

For any newly established or more stringent water quality-based effluent limits (summarized in Attachment E of the General Permit) which the Permittee is not expected to be in compliance with upon the effective date of the General Permit, the Permittee will have a schedule of compliance, as specified in Part II.H.4 of the draft General Permit. For each new or more stringent limit, EPA determined whether the Permittee is expected to be in compliance by the effective date of the authorization to discharge under the General Permit or, if not, whether the limit could likely be achieved via optimization, source reduction, and/or a minor process change rather than a significant facility upgrade. These determinations were made by comparing the recent effluent data from each respective facility during the most recent 5-year review period to the effluent limit proposed in the draft General Permit and based on EPA's understanding of each WWTF and the level of treatment likely needed to achieve the proposed limit for that pollutant.

Additionally, some WWTFs have effective limits in their existing individual permits that are becoming slightly more stringent based on updated available dilution. Given that these existing limits are already effective (and must remain effective), EPA finds that a compliance schedule for these minor limit adjustments is not appropriate. However, in such cases where a significantly more stringent limit is being established, a compliance schedule (if warranted, as discussed below) is included with the existing limit as the interim limit during the schedule.

If a facility is already discharging well below the proposed limit, then a compliance schedule is not warranted, and one is not included for that limit in Part II.H.4 of the General Permit.

If a facility was discharging above the proposed limit and not consistently in compliance and EPA determined that the limit could likely be achieved via optimization and/or source reduction and/or minor process changes, then a 2-year compliance schedule was given. These two years allow for an evaluation of the optimization, source reduction, and/or minor process change in the first year and implementation in the second year.

If a facility was discharging above the proposed limit and not consistently in compliance and EPA determined that the limit could likely be achieved only through a significant facility upgrade, then a 4-year compliance schedule was given. These four years allow for an evaluation of the upgrade in the first year, design in the second year, and construction plus optimization in the 3rd and 4th years.

2.8 Available Dilution and Mixing Zones

Water quality-based effluent limitations are established based, in part, on the available dilution derived from the flow in the receiving water at the point of discharge and the design flow of the facility from which the discharge occurs.

The dilution factor (DF) is typically calculated using the effluent design flow (Q_e) and the critical flow in the receiving water upstream of the discharge (Q_s) or downstream of the discharge (Q_d) as follows:

$$DF = 0.9 (Q_s + Q_e) / Q_e \quad \text{or} \quad DF = 0.9 \times Q_d / Q_e$$

Where:

Q_s = upstream critical flow, in million gallons per day (MGD)

Q_e = effluent design flow, in MGD

Q_d = downstream critical flow, in MGD

0.9 = factor to reserve 10% assimilative capacity

For freshwater rivers and streams, the New Hampshire water quality regulations establish the critical flow condition at which water quality criteria are to be applied as the "7Q10 flow" in the receiving water (see Env-Wq 1705.02(d)). The 7Q10 flow is the lowest mean flow for seven consecutive days, with a recurrence interval of once in ten years. The use of the 7Q10 flow allows for the calculation of the available dilution under critical flow (worst-case) conditions, which in turn results in the derivation of conservative water quality-based effluent limitations.

The New Hampshire water quality standards require that 10% of the receiving water's assimilative capacity be held in reserve for future needs (Env-Wq 1705.01). Therefore, a factor of 0.9 is applied to the available dilution for establishing water quality-based effluent limitations in New Hampshire.

For tidal waters in New Hampshire, the specified lowest flow condition at which aquatic life criteria must be applied is the flow that results in a dilution that is exceeded 99% of the time

(see New Hampshire water quality standards at Env-Wq 1705.02(b)).

The water quality standards of New Hampshire provide for the application of mixing zones to establish the available dilution on a case-by-case basis when certain criteria are met (see the New Hampshire water quality regulations at Env-Wq 1705 and Env-Wq 1707).

See Appendix B for all updated analyses of 7Q10 flows and dilution factors conducted by NHDES for the development of this General Permit. These 7Q10 flows and corresponding dilution factors have been used by EPA, as described below, in evaluating reasonable potential and, in some cases, establishing facility-specific effluent limits as described below in this Fact Sheet and as specified in Attachment E of the draft General Permit.

In evaluating the 7Q10 and/or dilution factor for all eligible facilities, NHDES noted that 7Q10 and/or dilution calculations do not need to be updated for certain facilities at this time. The dilution factors for Durham, Dover, and Seabrook are all calculated using CORMIX with model inputs for the design of the outfall and tidal conditions in the receiving water. As NHDES is not aware of any changes to the outfalls or tidal conditions for these facilities, the CORMIX models do not need to be updated at this time. The Leavitt E. Magrath WWTF does not have any dilution because the outfall pipe is exposed at low tide (*i.e.*, the effluent discharges directly to the tidal mud flats). The Ashland permit for the facility has a condition that the facility cannot discharge when the flow in the Squam River is below 26 cfs; this condition is maintained under the General Permit and, therefore, 26 cfs was used as the low flow for the analysis of the Ashland discharge under this General Permit. All other eligible facilities have an updated 7Q10 and/or dilution factor as presented in Appendix B.

3.0 Proposed Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived under the CWA and State WQs are described below. These proposed effluent limitations and conditions, the basis of which are discussed throughout this Fact Sheet, may be found in Part II and Attachment E of the Draft General Permit.

3.1 Effluent Limitations and Monitoring Requirements

In addition to the State and Federal regulations described in Section 2 above, EPA used the best available data to characterize each discharge and each receiving water and to identify the pollutants of concern and evaluate the need for effluent limitations. The best available data in most cases were data submitted by the Permittees (*e.g.*, in permit applications, monthly discharge monitoring reports [DMRs], annual reports, and/or whole effluent toxicity [WET] test reports) from January 2019 through December 2023 (*i.e.*, during the most recent 5-year “review period”). In some cases, other publicly available data were used if they were deemed the best available data. Occasionally, if no data during the review period for a particular pollutant were available then the best available data from before the review period were used.

3.1.1 Effluent Flow

Part II of the draft General Permit includes effluent flow limitations equal to the design flow of the WWTF from which the discharge occurs. These effluent flow limitations are specified in Attachment E of the draft General Permit. The effluent flow limit is a rolling annual average limit. The draft General Permit requires that flow be measured continuously, and the rolling annual average, monthly average, and the maximum daily flow must be reported in million gallons per day (MGD). The rolling annual average limit shall be calculated and reported as the arithmetic mean of the monthly average flows for the reporting month and the previous eleven months.

The draft General Permit also requires Permittees to submit to EPA and NHDES a projection of loadings, a program for maintaining satisfactory treatment levels, and plans for facility improvements whenever the monthly average effluent flow exceeds 80 percent of the facility's design flow capacity for three consecutive months (see Part II.C.3.f of the draft General Permit).

3.1.2 BOD₅ or CBOD₅ and TSS

3.1.2.1 Concentration Limits

The draft General Permit includes average monthly and average weekly limitations for biochemical oxygen demand ("BOD₅") and total suspended solids ("TSS") of 30 mg/L and 45 mg/L, respectively, in accordance with the secondary treatment regulations for POTWs found at 40 CFR § 133.102(a) and (b). Carbonaceous biochemical oxygen demand ("CBOD₅") limitations may apply in lieu of BOD₅ limitations, as allowed under 40 CFR § 133.102(a)(4), if already included in a facility's existing NPDES permit. As such, the draft General Permit also includes average monthly and average weekly CBOD₅ limits of 25 mg/L and 40 mg/L, respectively, in accordance with the secondary treatment regulations for POTWs found at 40 CFR § 133.102(a)(4)(i) and (ii). The draft General Permit also includes maximum daily limitations for BOD₅ (or CBOD₅) of 50 mg/L (or 45 mg/L) and for TSS of 50 mg/L.

3.1.2.2 Mass Limits

In addition to concentration limits, the draft General Permit includes mass limits, pursuant to the requirements of 40 CFR § 122.45(f)(1). The mass limitations in the draft General Permit are derived using the facility's design flow, and are therefore specific to each facility. The mass limitations are calculated as follows:

BOD₅ (or CBOD₅) and TSS Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly and average weekly BOD₅ (or CBOD₅) and TSS are based on the following equation:

$$L = C_d * Q_d * 8.34$$

Where:

L = Maximum allowable load in lb/day

C_d = Maximum allowable effluent concentration for reporting period in mg/L
(reporting periods are average monthly and average weekly)

Q_d = Annual average design flow of WWTF, in MGD

8.34 = Factor to convert effluent concentration (in mg/L) and design flow (in MGD) to lb/day

Merrimack WWTF

EPA notes that the Merrimack WWTF includes unique BOD₅ and TSS mass-based limits (and no concentration-based BOD₅ or TSS limits) due to the significant industrial wastewater flow from the Anheuser-Busch brewery in accordance with 40 CFR § 133.103(b). The analysis of these limits has been updated as described below.

An analysis of the monitoring data during the review period shows that the median of the average monthly effluent flow from the Merrimack WWTF was 1.753 MGD. During this same period, the median of the average monthly influent flow from the brewery was 0.636 MGD. Hence, the brewery accounts for 36% of the flow to the WWTF and the Towns of Merrimack and Bedford account for 64% of the flow which is approximately the same percentage as in the development of the 2014 individual permit. When more than 10% of the loading to a facility comes from an industrial category, pursuant to 40 CFR § 133.103(b) the BOD₅ and TSS limits can be adjusted upward proportionally.

The effluent limits for BOD₅ and TSS were developed using draft effluent limitation guidelines for breweries (Food and Beverage category) in conjunction with the secondary treatment standards found in 40 CFR § 133.102. Based on correspondence with the Merrimack WWTF, the 2019 through 2023 average brewery production was 5,711 barrels/day was used in the development of these limits. This level is a decrease from the 9,559 barrels/day used in the 2014 individual permit. Since the domestic flow accounts for approximately 64% of the total flow, the design flow of 5.0 MGD for the treatment plant was multiplied by this percentage. Hence, the domestic portion of the effluent limits is based on a flow of 3.2 MGD.

Based upon a domestic flow of 3.2 MGD and a production value at the brewery of 5,711 barrels/day the following effluent limitations were calculated as follows.

Limits for the Brewery Portion of the Effluent:

Table 1: Draft Effluent Guidelines for Breweries (Food and Beverage Category)

Parameter	Monthly Ave. (lb/1,000 barrels)	Daily Max. (lb/1,000 barrels)
BOD ₅	72.24	180.60
TSS	100.63	250.26

Production = 5,711 barrels/day

$$\text{BOD}_5 \text{ Monthly Ave.} = 5,711 * (72.24 \text{ lb}/1000 \text{ barrels}) = 413 \text{ lb}/\text{day}$$

$$\text{BOD}_5 \text{ Daily Max.} = 5,711 * (180.60 \text{ lb}/1000 \text{ barrels}) = 1,031 \text{ lb}/\text{day}$$

$$\text{TSS Monthly Ave.} = 5,711 * (100.63 \text{ lb}/1000 \text{ barrels}) = 575 \text{ lb}/\text{day}$$

$$\text{TSS Daily Max.} = 5,711 * (250.26 \text{ lb}/1000 \text{ barrels}) = 1,429 \text{ lb}/\text{day}$$

Limits for Domestic Portion of the Effluent:

To calculate effluent limits for the domestic portion of the effluent limits based on the secondary treatment standards found at 40 CFR § 133.102, a flow of 3.2 MGD is used because it is 64% of the 5.0 MGD design flow.

BOD₅ and TSS Monthly Average Concentration Limit is 30 mg/L, resulting in:

$$(30 \text{ mg}/\text{L})(1 \text{ gr}/1000 \text{ mg})(1 \text{ lb}/454 \text{ gr})(3.785 \text{ l}/\text{gal})(3,200,000 \text{ gal}/\text{day}) = 800 \text{ lb}/\text{day}$$

BOD₅ and TSS Daily Maximum Concentration Limit is 50 mg/L, resulting in:

$$(50 \text{ mg}/\text{L})(1 \text{ gr}/1000 \text{ mg})(1 \text{ lb}/454 \text{ gr})(3.785 \text{ l}/\text{gal})(3,200,000 \text{ gal}/\text{day}) = 1,334 \text{ lb}/\text{day}$$

Total Effluent Limitations:

The table below presents a summary of the BOD₅ and TSS limitations based on the updated flow and brewery production data discussed above.

Table 2: Sum of BOD₅ and TSS Limitations

Parameter	Monthly Ave. (lb/day)	Daily Max. (lb/day)
BOD ₅	1,213 (413 + 800)	2,365 (1,031 + 1,334)
TSS	1,375 (575 + 800)	2,763 (1,429 + 1,334)

Comparing these limits with the BOD₅ and TSS limits from the 2014 individual permits indicates that the limits calculated above are all somewhat more stringent than the existing limits except the monthly average BOD₅ limit of 1,199 lb/day, which is currently slightly more stringent than the load calculated above. Therefore, both TSS limits and the daily maximum BOD₅ limit calculated above are all proposed in the Draft General Permit. The existing monthly average BOD₅ limit of 1,199 lb/day is carried forward from the 2014 individual permit in accordance with anti-backsliding regulations discussed in Section 2.6 above. EPA notes that the facility has been discharging well below each of these more stringent limits throughout the review period, so a compliance schedule is not warranted.

Consistent with the 2014 individual permit, the limitations for both BOD₅ and TSS are only expressed in terms of mass and not concentration. Given that the current average effluent flow from the WWTF is only about 1.75 MGD, inclusion of standard secondary-treatment concentration limits (*e.g.*, 30 mg/L) would require attainment of significantly lower mass loadings at their typical effluent flows well below the design flow, effectively removing the benefit of adjusting the limits pursuant to 40 CFR § 133.102(b). EPA notes that as the effluent flow increases, the mass limits will require that progressively lower concentrations are achieved. At the WWTF's design flow of 5.0 MGD, the equivalent monthly average concentrations that must be achieved are 28.7 mg/L of BOD₅ and 33.0 mg/L of TSS.

3.1.2.3 Eighty-Five Percent (85%) BOD₅ and TSS Removal Requirement

In accordance with the provisions of 40 CFR §§ 133.102(a)(3), (a)(4)(iii) and (b)(3), the draft General Permit requires that the 30-day average percent removal for BOD₅ (or CBOD₅) and TSS be not less than 85%.

3.1.3 pH

The New Hampshire water quality standards require the pH of Class B waters (freshwater and marine) to be within the range of 6.5-8.0 SU, unless due to natural causes (Env-Wq 1703.18(b)).

The pH range may be modified if the Permittee satisfies conditions set forth in the General Permit which ensures that an expanded range (no wider than 6.0 to 9.0 S.U.) would not cause or contribute to an excursion of water quality standards. Upon notification of an approval by NHDES, EPA will review and, if acceptable, will submit written notice to the Permittee of the permit change. The modified pH range will not be in effect until the Permittee receives written notice from EPA.

3.1.4 Bacteria

The effluent limits to protect recreational uses (*E. coli* in freshwaters and *enterococci* in tidal waters) are based on the geometric mean bacteria criteria in statute at NH Revised Statutes Annotated (RSA) 485-A:8(I) and (V) and in regulation at Env-Wq 1700, Appendix E.

Table 3 summarizes the applicable bacteria limits for discharges in New Hampshire based on receiving water classification and designated uses.

Table 3 - Bacteria Limits for New Hampshire Discharges

Indicator Organism	Receiving Water Classification	Discharge Limitation		
		Units	Average Monthly (Geometric mean)	Maximum Daily
<i>E. coli</i>	B/Freshwater	colonies/100 mL	126	406
<i>Enterococci</i>	B/Tidal Waters used for swimming	colonies/100 mL	35	104
<i>Fecal coliform</i>	B/Tidal Waters used for growing or taking of shellfish	organisms/100 mL	14	28 ¹

¹ As a maximum daily, not more than 10 percent of collected samples (over a monthly period) shall exceed a Most Probable Number (MPN) of 28 per 100 mL.

Among the four marine dischargers (Seabrook, Leavitt E. Magrath, Dover and Durham), all discharges impact tidal waters used for swimming and for growing or taking shellfish. Therefore, all four receive both *Enterococci* and *Fecal coliform* limits.

Based on the DMR data during the review period, Dover has been discharging at levels above the proposed *Enterococci* maximum daily limit of 104

3.1.5 Total Residual Chlorine

The total residual chlorine (“TRC”) permit limits are included the General Permit based on the instream chlorine criteria defined in the New Hampshire Code of Administrative Rules, Env-Wq 1703.21 and Table 1703-1. The instream criteria for chlorine are 11 µg/l (chronic) and 19 µg/l (acute) for freshwater discharges and 7.5 µg/L (chronic) and 13 µg/L (acute) for marine discharges. Because the upstream chlorine concentration is assumed to be zero, the water quality-based chlorine limits for all freshwater discharges are calculated as the criteria times the dilution factor (given that the factor to reserve 10% assimilative capacity is included in the dilution factor), as follows:

$$\begin{aligned} \text{Chronic criteria} * \text{dilution factor} &= \text{Chronic limit} \\ \text{Acute criteria} * \text{dilution factor} &= \text{Acute limit} \end{aligned}$$

The water quality-based chlorine limits for marine discharges are calculated as the criteria times the dilution factor times 0.9 (to reserve 10% assimilative capacity), as follows:

$$\begin{aligned} \text{Chronic criteria} * \text{dilution factor} * 0.9 &= \text{Chronic limit} \\ \text{Acute criteria} * \text{dilution factor} * 0.9 &= \text{Acute limit} \end{aligned}$$

These site-specific limits shall be included in each Permittee’s authorization to discharge under the General Permit. EPA notes that even facilities that do not regularly use chlorine for disinfection will receive TRC limits to ensure that such limits are in place should the facility need to use chlorine in the future for any reason (e.g., UV system failure, maintenance, or upgrade).

If chlorine is not used during any given monitoring period, the Permittee shall report the appropriate NODI Code (indicating no discharge of the pollutant) and is not required to monitoring for TRC during that monitoring period.

All new or more stringent TRC limits are summarized in Attachment E of the draft General Permit.

3.1.6 Metals

Dissolved fractions of certain metals in water can be toxic to aquatic life. Therefore, there is a need to limit toxic metal concentrations in the effluent where aquatic life may be impacted. For the development of the Draft General Permit, analyses were completed to evaluate whether there is reasonable potential for effluent discharges to cause or contribute to exceedances of the water quality criteria for aluminum (freshwater only), cadmium, copper, lead, nickel and zinc and/or to evaluate whether any existing limits in a facility's existing permit for these metals continue to be protective, given the updated upstream hydrologic and chemical characteristics of the receiving water.

3.1.6.1 Applicable Metals Criteria

State water quality criteria for cadmium, copper, lead, nickel and zinc are established in terms of dissolved metals. However, many inorganic components of domestic wastewater, including metals, are in particulate form, and differences in the chemical composition between the effluent and the receiving water affects the partitioning of metals between the particulate and dissolved fractions as the effluent mixes with the receiving water, often resulting in a transition from the particulate to dissolved form (*The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (USEPA 1996 [EPA-823-B96-007])). Consequently, quantifying only the dissolved fraction of metals in the effluent prior to discharge may not accurately reflect the biologically-available portion of metals in the receiving water. Regulations at 40 CFR § 122.45(c) require, with limited exceptions, that effluent limits for metals in NPDES permits be expressed as total recoverable metals.

The criteria for cadmium, copper, lead, nickel and zinc are hardness-dependent using the equations in EPA's *National Recommended Water Quality Criteria: 2002*, which are also in NH Env Wq-1703. The estimated hardness of the receiving water downstream of the treatment plant is calculated using the critical low flow, the design flow of the treatment plant, and the median hardness for both the receiving water upstream of the discharge and the treatment plant effluent (both of which are taken from the WET test reports during the review period). Using the mass balance equation discussed in Appendix A, the resulting downstream hardness is calculated and used to determine the corresponding criteria. If this downstream hardness is below 20 mg/L, the default value of 20 mg/L is used to determine the total recoverable metals criteria. See Env-Wq 1703.22(f). The downstream hardness values calculated for the 17 eligible facilities discharging to freshwater are summarized in Table 4 below.

Table 4 – Downstream Hardness Calculated Under Critical Flow Conditions

Facility	Downstream Hardness (mg/L)
Somersworth WPCF	21.8
Lincoln WWTP	7.1 (default 20)
Ashland WWTF	18.8 (default 20)
Jaffrey WWTF	37.4
Milford WWTF	61.3
Penacook WWTF	11.3 (default 20)
Derry WWTP	18.0 (default 20)
Hooksett WWTF	10.4 (default 20)
Merrimack WWTP	20.7
Allenstown WWTF	12.9 (default 20)
Claremont WWTF	37.9
Newport WWTF	19.8 (default 20)
Littleton WWTF	20.3
Lancaster WWTF	24.2
Lebanon WWTF	45.7
Hanover WWTF	42.6
Charlestown WWTP	54.1

New Hampshire aluminum criteria are not hardness dependent and should be applied in terms of acid-soluble aluminum (See Table 1703-1, Note S). However, without site-specific data showing the fraction of downstream aluminum in the acid-soluble form, EPA assumes that the ratio of acid soluble to total recoverable aluminum is 1:1.

3.1.6.2 Reasonable Potential Analysis and Limit Derivation

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, EPA uses the mass balance equation presented in Appendix A to project the concentration downstream of the discharge and, if applicable, to determine the limit required in the permit.

For any metal with an existing limit in the facility's existing permit, a reasonable potential determination is not applicable. In such cases, the same mass balance equation is used to determine if a more stringent limit would be required to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration (C_d) allowable to meet WQS based on current conditions. See Attachment E of the draft General Permit for a summary of any newly established or more stringent effluent limits based on this analysis for each eligible WWTF.

Allenstown's Aluminum Limit

In a letter from NHDES to EPA (dated July 1, 2014), NHDES stated that the aluminum criteria presented in the New Hampshire water quality regulations (Env-Wq-1700) should be applied in terms of acid-soluble aluminum. The letter goes on to say:

New Hampshire's aluminum criteria are based on EPA's 1988 ambient water quality criteria document for aluminum. According to this document, acid-soluble aluminum is operationally defined as "[a]luminum that passes through a 0.45 um membrane filter after the sample has been acidified to a pH at between 1.5 and 2.0 with nitric acid." For the many reasons listed in the "Implementation" section of the EPA document, acid-soluble aluminum is considered a better measurement of the forms that are toxic to aquatic life or that can be readily converted to toxic forms under natural conditions.

To express these criteria in terms of total recoverable aluminum, the fraction of acid-soluble to total recoverable aluminum in the receiving water must be determined. In 2010, the City of Manchester (located less than 10 miles downstream of Allenstown) conducted an aluminum study and found that the fraction of acid-soluble to total recoverable aluminum in the Merrimack River was 0.74. Given the relative proximity of the Manchester WWTF downstream of the Allenstown WWTF and the minimal impacts from other WWTFs, EPA accepted the data collected by Manchester as the best available data to characterize the receiving water for the Allenstown WWTF. Hence, the acid-soluble aluminum criteria of 750 µg/L (acute) and 87 µg/L (chronic) can be converted to total recoverable criteria by dividing them by 0.74, resulting in total recoverable criteria of 1,014 µg/L (acute) and 118 µg/L (chronic). After applying a factor of 0.9 to reserve 10% of the assimilative capacity, these criteria are 913 µg/L (acute) and 106 µg/L (chronic). These criteria were applied for Allenstown in the development of their 2021 individual permit and they are again applied in the development of this General Permit in the analysis described above.

In the 2021 individual permit, EPA determined that the discharge did not have the reasonable potential to cause or contribute to an excursion of the acid-soluble aluminum criteria based on all data available at that time. However, in the analysis conducted under this General Permit (based on more recent information from the review period) EPA found that the median ambient data was 112 µg/L which is above the chronic criterion times 0.9 (*i.e.*, 106 µg/L). Given that the 95th percentile of the effluent data of 196 µg/L was also above this criterion, EPA has determined that the discharge does have the reasonable potential to cause or contribute to an excursion of the criterion. Therefore, a monthly average limit of 118 µg/L is established. This limit is equivalent to the criterion to ensure that the discharge does not cause or contribute to an excursion of water quality standards. Given that the WWTF is currently discharging above this level, EPA has also included a 2-year compliance schedule to allow time for the permittee to conduct optimization, source reduction and/or minor process changes to achieve the new limit.

Hooksett's Aluminum Limit

Given that Hooksett is located between Manchester and Allenstown and also discharges to the Merrimack River, the same acid-soluble fraction is applied to Hooksett. Based on the reasonable potential analysis described above, EPA found that the Hooksett discharge does have the reasonable potential to cause or contribute to an excursion of the aluminum criterion (based on a median background concentration of 137.5 µg/L and a 95th percentile effluent concentration of 1,117 µg/L, resulting in a projected downstream concentration of 143.2 µg/L). Rather than establishing a monthly average effluent limit of 87 µg/L, the acid-soluble fraction of 0.74 discussed above results in the establishment of a monthly average limit of 118 µg/L (*i.e.*, the same limit applied to Allenstown).

3.1.7 Ammonia

Nitrogen in the form of ammonia can reduce the receiving stream's dissolved oxygen concentration through nitrification and can be toxic to aquatic life, particularly at elevated temperatures.

The freshwater ammonia criteria in the NH WQS (Env-Wq 1703.25 & 1703.26) are dependent on pH and temperature and the acute criterion is also dependent on whether Salmonids are present in the receiving water. The marine ammonia criteria in the NH WQS (Env-Wq 1703.27 through 1703.32) are dependent on pH, temperature and salinity.

In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for ammonia, EPA will use the mass balance equation presented in Appendix A for both warm and cold weather conditions to project the ammonia concentration downstream of the discharge. If there is reasonable potential, this mass balance equation will also be used to determine the limit that is required in the permit.

EPA notes that if a WWTF already has a limit in its existing permit for ammonia, a reasonable potential determination is not applicable. In such cases, the same mass balance equation from Appendix A is used to determine if a more stringent limit would be required to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration (C_d) allowable to meet WQS based on current conditions.

To determine the applicable ammonia criteria, EPA must determine on a case-by-case basis (if applicable) the warm weather temperature (default of 25° C for May through October), cold weather temperature (default of 5° C for November through April), ambient pH (median of site-specific ambient pH data taken from WET tests during the review period), salinity (default of 0 ppt for freshwater discharges and median of site-specific ambient salinity data taken from WET tests during the review period), and the presence/absence of salmonids and early life stages of fish in the receiving waters (determined for each receiving water). Based on this information,

the applicable ammonia criteria can be used in the mass balance equation to perform a reasonable potential determination and, if necessary, establish effluent limits according to the procedure described in Appendix A. In this case, salmonids were assumed present for all freshwater discharges.

See Attachment E of the draft General Permit for a summary of any newly established or more stringent effluent limits based on this analysis for each eligible WWTF.

Effluent and ambient monitoring for ammonia will continue to be required in the whole effluent toxicity tests.

3.1.8 Nutrients

Nutrients are compounds containing nitrogen and phosphorus. Although nitrogen and phosphorus are essential for plant growth, high concentrations of these nutrients can cause eutrophication, a condition in which aquatic plant and algal growth is excessive. Plant and algae respiration and decomposition reduces dissolved oxygen in the water, creating poor habitat for fish and other aquatic animals. Recent studies provide evidence that both phosphorus and nitrogen can play a role in the eutrophication of certain ecosystems. However, typically phosphorus is the limiting nutrient triggering eutrophication in freshwater ecosystems and nitrogen in marine or estuarine ecosystems. Thus, for freshwater dischargers both phosphorus and nitrogen are nutrients of concern and for marine dischargers only nitrogen is a nutrient of concern.

3.1.8.1 Total Nitrogen

Excessive nitrogen loadings to waterways can cause water quality problems at estuaries. Several estuaries in New England, most notably Long Island Sound, Narragansett Bay, and Buzzards Bay experience eutrophication and are subject to Total Maximum Daily Loads (“TMDLs”) to reduce nutrient enrichment. If a Permittee discharges to a watershed that has an effective TMDL, the applicable Waste Load Allocation (“WLA”) for that facility must be included in the authorization to discharge under the NH Medium WWTF GP.

EPA is also concerned about nitrogen discharges to other waterbodies, such as the Merrimack River estuary and the Gulf of Maine, that are not subject to TMDLs but may be experiencing nitrogen enrichment. To ensure EPA has enough information to properly address this concern in the future, the General Permit includes year-round monitoring and reporting requirements for total nitrogen for all eligible dischargers. The frequency of such monitoring is once per week from April through October and once per month from November through March. This level of monitoring is warranted given the larger size of these facilities (with all facilities between 1 MGD and 5 MGD) and greater nitrogen load compared to smaller facilities. For lagoon facilities, the monitoring shall be once per quarter given that lagoon facilities have much less effluent variability due to the nature of the treatment process. In the next permit reissuance or in another permitting action in the future, EPA plans to use this data, along with all other available

information at that time, to determine if numeric nitrogen limits are necessary to ensure the protection of water quality standards.

Long Island Sound Watershed

All eligible facilities discharging into the Long Island Sound (LIS) watershed will have a numeric limit and/or a requirement to optimize nitrogen removal. The monitoring frequency will be the same as described above. See Appendix C for more details and a table of all dischargers into the LIS watershed.

As described in Appendix C of this Fact Sheet all eligible facilities under this General Permit (with a design flow between 1 MGD and 5 MGD) will be required to optimize for nitrogen removal. Additionally, all eligible facilities that have a design flow from 1.5 MGD to 5 MGD will have a numeric rolling annual average limit based on the equation: Q_e (MGD) x 10 mg/L x 8.34. The resulting limits are presented in Table 5 below and are included in Attachment E of the General Permit.

Table 5 – Total Nitrogen Requirements for WWTFs in the LIS Watershed

WWTF	Rolling Annual Average Total Nitrogen Limit
Claremont	$3.89 \text{ MGD} \times 10 \text{ mg/L} \times 8.34 = \mathbf{324} \text{ lb/day}$ & Optimize
Lebanon	$3.18 \text{ MGD} \times 10 \text{ mg/L} \times 8.34 = \mathbf{265} \text{ lb/day}$ & Optimize
Hanover	$2.3 \text{ MGD} \times 10 \text{ mg/L} \times 8.34 = \mathbf{192} \text{ lb/day}$ & Optimize
Littleton	$1.5 \text{ MGD} \times 10 \text{ mg/L} \times 8.34 = \mathbf{125} \text{ lb/day}$ & Optimize
Newport	None (Optimize only)
Lancaster	None (Optimize only)
Charlestown	None (Optimize only)

EPA notes that the current individual permits for each of these WWTFs already include nitrogen optimization requirements which will be carried forward under the General Permit. Additionally, the Littleton individual permit already includes the nitrogen limit of 125 lb/day which will be carried forward under the General Permit. However, the nitrogen limits for Claremont, Lebanon and Hanover are newly established under the General Permit (as shown in Attachment E of the General Permit).

EPA notes that Claremont and Lebanon are already discharging below these limits and a compliance schedule is not warranted. However, Hanover is not expected to be in compliance with their limit upon the effective date of the authorization under the General Permit and EPA has determined that a major facility upgrade will likely be necessary. Therefore, the General Permit includes a 4-year compliance schedule to achieve this limit.

Great Bay Watershed

For facilities covered by the Great Bay Total Nitrogen General Permit (permit number NHG58A000), the nitrogen monitoring requirements described in this General Permit do not

apply because these facilities are required to conduct such monitoring under the Great Bay Total Nitrogen General Permit. These facilities are Durham, Somersworth and Dover.

3.1.8.2 Total Phosphorus

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities. The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: 1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter;⁷ 2) causing an unpleasant appearance and odor; 3) interfering with navigation and recreation, for instance, by fouling engines and propellers, making waters unappealing to swimmers, and interfering with fishing lures and equipment; 4) reducing water clarity; 5) reducing the quality and availability of suitable habitat for aquatic life; and 6) producing toxic cyanobacteria during certain algal blooms. Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant growth in a water body that results from nutrients entering the system as a result of human activities. Discharges from municipal and industrial wastewater treatment plants, agriculture runoff, and stormwater are examples of human-derived (*i.e.*, anthropogenic) sources of nutrients in surface waters. See generally, *Nutrient Criteria Technical Guidance Manual – Rivers and Streams*, EPA July 2000 [EPA-822-B-00-002], Chapters 1 and 3.

The New Hampshire Surface Water Quality Regulations contain a narrative criterion that limits phosphorus to the level that will not impair a water body's designated use. Specifically, Env-Wq 1703.14(b) states that, "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring." Env-Wq 1703.14(c), further states that, "Existing discharges containing either phosphorus or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards." Cultural eutrophication is defined in Env-Wq 1702.15 as, "... the human-induced addition of wastes containing nutrients which results in excessive plant growth and/or decrease in dissolved oxygen." Cultural eutrophication also results in violations of other nutrient-related water quality standards such as low dissolved oxygen, decreased water clarity, objectionable odors and surface scum. The NH WQS at Env-Wq 1703.07(b)(2) require that dissolved oxygen have an instantaneous minimum concentration of at least 5 mg/L in Class B waters. Further, NH WQS at Env-Wq 1703.12(b) states that Class B waters "shall contain no slicks, odors, or surface floating solids that would impair any existing or designated use, unless naturally occurring." Also see

⁷ "Algae" includes phytoplankton (microscopic algae measured by levels of chlorophyll a), macroalgae (commonly referred to as seaweed), and other plants stimulated by nutrient over-enrichment. Excessive algal growth contributes to low levels of dissolved oxygen through increased plant respiration and decomposition of dead plant matter. Notably, during the day, algae provide oxygen to the water as a by-product of photosynthesis. At night, however, when photosynthesis ceases but plant respiration continues, dissolved oxygen levels decline. Additionally, as these algae die, they are decomposed by bacteria that consume yet more oxygen. When dissolved oxygen levels are low, aquatic organisms become stressed and die, and overall aquatic health is degraded.

Part 2.2.2 of this Fact Sheet above regarding antidegradation and existing uses which may be impacted by nutrient over-enrichment.

When permitting nutrient discharges, EPA analyzes available information from a reasonably conservative standpoint, as it regards one key function of a nutrient limit as preventative. This protective approach is appropriate because, once begun, the cycle of eutrophication can be difficult to reverse due to the tendency of nutrients to be retained in the sediments. For this reason, time is of the essence when permitting for nutrients, so EPA acts on the best information reasonably available when developing the draft General Permit, and does not generally delay permit issuance pending collection of new data or development of new models. This approach is also consistent with the requirement for NPDES permits to be revisited and reissued at regular intervals, with permit terms not to exceed five years.

When translating narrative phosphorus criteria into numeric values (and establishing WQBELs, if necessary), EPA looks to a wide range of materials, including nationally recommended criteria and other relevant materials, such as EPA nutrient technical guidance and information published under Section 304(a) of the CWA, peer-reviewed scientific literature and site-specific surveys and data to determine instream targets that are protective of water quality. See 40 CFR § 122.44(d)(1)(vi)(A), (B).

EPA has produced several guidance documents, described below, that recommend a range of total ambient phosphorus concentrations that are sufficiently stringent to control cultural eutrophication and other adverse nutrient-related impacts, with 0.1 mg/L representing the upper end of this range. These guidance documents recommend protective in-stream phosphorus concentrations based on two different analytical approaches. An effects-based approach provides a threshold value above which adverse effects (*i.e.*, water quality impairments) are likely to occur. This approach applies empirical observations of a causal variable (*i.e.*, phosphorus) and a response variable (*i.e.*, chlorophyll-a as a measure of algal biomass) associated with designated use impairments. Alternatively, reference-based values are statistically derived from a comparison within a population of rivers in the same ecoregion class. They are a quantitative set of river characteristics (physical, chemical and biological) that represent conditions in waters in that ecoregion that are minimally impacted by human activities (*i.e.*, reference conditions), and thus by definition representative of water without cultural eutrophication. Dischargers in Massachusetts and New Hampshire are located within either Ecoregion VIII, Nutrient-Poor, Largely Glaciated Upper Midwest and Northeast or Ecoregion XIV, Eastern Coastal Plains. The recommended total phosphorus criteria for these ecoregions are 10 µg/L and 31.25 µg/L, respectively. While reference conditions reflect in-stream phosphorus concentrations that are sufficiently low to meet the requirements necessary to support designated uses, they may also represent levels of water quality beyond what is necessary to support such uses.

EPA follows an effects-based approach. EPA's 1986 *Quality Criteria for Water* (the "Gold Book") recommends maximum threshold concentrations that are designed to prevent or control adverse nutrient-related impacts from occurring. Specifically, the Gold Book recommends in-

stream phosphorus concentrations of no greater than 0.1 mg/L for any stream not discharging directly to lakes or impoundments 0.05 mg/L in any stream entering a lake or reservoir, and 0.025 mg/L within a lake or reservoir.

As the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophic response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. EPA is not aware of any site-specific factors relevant to the receiving waters that would result in them being unusually more or less susceptible to phosphorus loading.

EPA observes that its overall approaches to establishing both phosphorus and nitrogen effluent limitations in NPDES permits have been extensively adjudicated over the past fifteen years, and they have been found to be reasonable and upheld by both the Environmental Appeals Board and the United States Court of Appeals for the First Circuit. Petitions for certiorari have twice been denied by the United States Supreme Court for Region 1 nutrient permitting (total phosphorus and total nitrogen) decisions under 40 CFR § 122.44(d)(1)(vi) in recent years. Should the public wish to review these decisions, they are available here:

City of Taunton v. EPA (EAB and First Circuit, Supreme Court cert. denied)

[https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Case~Name/0A045314B61E682785257FA80054E600/\\$File/Denying%20Review%20Vol-17.pdf](https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Case~Name/0A045314B61E682785257FA80054E600/$File/Denying%20Review%20Vol-17.pdf)
[https://yosemite.epa.gov/oa/eab_web_docket.nsf/A568248B44D1C63785258053005AEDD0/\\$File/Opinion%207.9.2018%20\(46%20pages\).pdf](https://yosemite.epa.gov/oa/eab_web_docket.nsf/A568248B44D1C63785258053005AEDD0/$File/Opinion%207.9.2018%20(46%20pages).pdf)

Upper Blackstone Water Pollution Abatement Dist. v. EPA (EAB and First Circuit, Supreme Court cert. denied)

[https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Case~Name/A44361EC4C211B0685257865006EA1EC/\\$File/Upper%20Blackstone.pdf](https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Case~Name/A44361EC4C211B0685257865006EA1EC/$File/Upper%20Blackstone.pdf)
[https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/2D0D249E441A18F185257B6600725F04/\\$File/October%2018%202017.pdf](https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/2D0D249E441A18F185257B6600725F04/$File/October%2018%202017.pdf)

In re City of Lowell, MA (2020)

[https://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Filings%20By%20Appeal%20Number/6D63DE203BB980D2852585960069906D/\\$File/City%20of%20Lowell.pdf](https://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Filings%20By%20Appeal%20Number/6D63DE203BB980D2852585960069906D/$File/City%20of%20Lowell.pdf)

In re Town of Newmarket Wastewater Treatment Plant (2013)

[https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Case~Name/97CCD304C9B7E58585257C3500799108/\\$File/Newmarket%20Decision%20Vol%2016.pdf](https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Case~Name/97CCD304C9B7E58585257C3500799108/$File/Newmarket%20Decision%20Vol%2016.pdf)

In re City of Attleboro MA Wastewater Treatment Plant (2009)

[https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20\(CWA\)/D506EBEE22A1035E8525763300499A78/\\$File/Attleboro.pdf](https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/D506EBEE22A1035E8525763300499A78/$File/Attleboro.pdf)

EPA adheres to the overarching decision-making framework for nutrient permitting established by these precedents: administrative and judicial bodies have expressly found EPA's approach to be reasonable under the Act and, for its part, EPA has found the approach in its experience to be workable, expeditious, as well as demonstrably effective in addressing nutrient pollution, in a manner that is neither overly stringent, nor overly lax. While drawing on information from the scientific literature and national and regional EPA guidance, EPA also accounts for site-specific facts and circumstances surrounding the discharge and receiving waters in arriving at the permit result. EPA acknowledges that there are a range of alternative technical approaches and opinions when permitting for nutrients to ensure that uses for the waters designated by the state for its citizens are achieved; while some of these may have merit, EPA's existing approach has been proven to have merit and provides predictability for the regulated community.

For all eligible facilities under this General Permit that discharge to freshwater, EPA has determined that the applicable Gold Book threshold is 0.1 mg/L as part of the reasonable potential determination procedure described in Appendix A.

In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for phosphorus, EPA used the mass balance equation presented in Appendix A to project the phosphorus concentration downstream of the discharge. If there is reasonable potential, this mass balance equation is also used to determine the limit that is required in the permit.

EPA notes that if a WWTF already has a limit in its existing permit for phosphorus, the same mass balance equation from Appendix A is used to determine if a more stringent limit would be required to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration (C_d) allowable to meet WQS based on current conditions.

EPA has evaluated the phosphorus discharge from each of the 17 eligible WWTFs discharging to freshwater. Among those 17, there are 8 which currently have a mass-based limit. In those cases, EPA has reevaluated whether those existing limits need to be more stringent to continue to protect water quality standards. In general, there are several factors which may impact these analyses from previous permit terms. These factors include:

- Updated 7Q10 low flow, and
- Updated ambient phosphorus data.

If either the 7Q10 low flow was lower than previously assumed or the ambient phosphorus data were higher than previously assumed, the required phosphorus limit may need to be lower in

order to continue to meet water quality standards under critical conditions. See the analyses below.

Existing Mass-based Limits

Given that phosphorus is not a toxic pollutant, EPA considers it appropriate to regulate the discharge of phosphorus through either a concentration-based limit or a mass-based limit. The process described in Appendix A is designed to determine whether the discharge has reasonable potential to cause or contribute to a violation of water quality standards and, if so, to calculate a concentration-based limit. The process is not designed to evaluate whether an existing mass-based limit needs to be more stringent to continue to protect water quality standards. Given that eight of the eligible WWTFs already have mass-balance phosphorus limits in their individual permit, EPA has evaluated these eight mass-based limits here (rather than using Appendix A).

To ensure a mass-based limit is protective under worst-case conditions, EPA calculates the limit using the lowest expected receiving water flow and effluent flow. Hence, either the downstream 7Q10 is used (if available) or the upstream 7Q10 receiving water flow and the lowest monthly average effluent flow during the review period are used. The numeric mass-based limit is determined based on the following equations:

$$Q_s C_s + Q_e C_e = Q_d C_d \times (0.90)$$

and

$$M_e = Q_e C_e \times 8.345$$

Substituting ($Q_d C_d$) with ($M_e/8.345$) in the first equation and solving for M_e results in:

$$M_e = (Q_d C_d \times (0.90) - Q_s C_s) \times 8.345$$

where:

M_e = mass-based phosphorus limit

Q_s = upstream 7Q10 flow (if available) -or- ($Q_d - Q_e$), in MGD

C_s = upstream median river phosphorus concentration, in mg/L

Q_e = lowest monthly average effluent flow, in MGD

C_e = effluent phosphorus concentration, in mg/L

Q_d = downstream 7Q10 flow (if available) -or- ($Q_e + Q_s$), in MGD

C_d = downstream river phosphorus concentration (Gold Book target = 0.100 mg/L)

0.90 = factor to reserve 10% assimilative capacity

8.345 = factor to convert from MGD * mg/L to lb/day

Solving for M_e gives the maximum allowable mass the facility may discharge without violating water quality standards. If the updated limit is less stringent than the current limit, the draft

General Permit proposes to carry forward the current limit. If the limit is more stringent, then the updated limit is proposed in the Draft General Permit. All limits are applicable from April through October which EPA considers the growing season (*i.e.*, when excess phosphorus is more likely to result in eutrophication due to increased light and temperature) in New Hampshire. The calculations are shown in the Table 6 below.

Table 6: Mass-based Total Phosphorus Limit Calculations

WWTF	Current M _e (lb/day)	Q _s (MGD)	Q _e (MGD)	Q _d (MGD)	C _s (mg/L)	Updated M _e (lb/day)	Proposed M _e (lb/day)
Somersworth	9.5	14.67	0.91	15.58	0.02	9.3	9.3 ²
Ashland	11.3	16.8	0.141	16.941	0.012	11.0	11.0
Jaffrey	1.54	1.507	0.263	1.77	0.0323	0.9	0.9
Milford	3.0	4.08	0.82	4.9	0.025 ¹	2.8	2.8
Merrimack	164.8	477.97	1.43	479.4	0.048	168.6	164.8
Claremont	17	15.0	1.16	16.16	0.0178	9.9	9.9
Newport	5.2	7.58	0.32	7.9	0.0165	4.9	4.9
Littleton	7.1	8.904	0.326	9.23	0.005 ¹	6.6	6.6

¹The ambient data collected by the Permittee had a median value of zero (*i.e.*, non-detect). Given that the ambient data were not sufficiently sensitive to detect that actual level of phosphorus in the upstream waterbody, EPA has chosen to use half of the minimum level of detection (as reported in the DMR) as the ambient background concentration for purposes of this calculation. EPA applied this conservative assumption due to the limited available data and to ensure protection of water quality standards.

² For the Somersworth WWTF, EPA notes that the current limit is effective from May 1st through September 30th. based on the 1999 Salmon Falls TMDL. The proposed limit of 9.0 lb/day (based on EPA's updated analysis) will be effective from April 1st through October 31st to ensure protection of water quality standards throughout the growing season.

As shown, the current phosphorus limit for Merrimack is carried forward. However, the updated limits for Somersworth, Ashland, Jaffrey, Milford, Claremont, Newport, and Littleton are more stringent mass-based limits to continue to protect water quality standards based on all available upstream phosphorus data as well as updated 7Q10 low flow data.

Compliance Schedules

Based on the available DMR data from the review period for each of the seven WWTFs receiving a more stringent phosphorus limit, EPA has determined that the following compliance schedules should apply to the more stringent limits:

- Somersworth, Jaffrey, Milford and Claremont will be able to comply with the more stringent limit upon the effective date of the authorization to discharge and a compliance schedule is not warranted.
- Ashland has a schedule of compliance in their current individual permit indicating compliance with the limit of 11.3 lb/day by February 1, 2025. Newport has a schedule of compliance through an administrative order (AO) under their current individual permit

indicating compliance with the limit of 5.2 lb/day by October 1, 2026. Littleton has a schedule of compliance in their current individual permit indicating compliance with the limit of 7.1 lb/day by April 1, 2025. EPA expects that these WWTFs can comply with the slightly more stringent limits of 11.0 lb/day, 4.9 lb/day, 6.3 lb/day, respectively, within the same timeframe. Therefore, these existing schedules are carried forward under the General Permit.

New Phosphorus Limits

In addition to the more stringent limits described above, EPA also determined (based upon the reasonable potential determination procedure described in Appendix A) that total phosphorus limits must be established for two additional WWTFs: Lincoln and Derry.⁸ For Lincoln, the need for a limit is driven mainly by the elevated phosphorus concentration in the effluent (95th percentile of 4.7 mg/L) along with the limited dilution factor (18.2). For Derry, the need for a limit is driven mainly by the elevated concentration in the effluent (95th percentile of 6.3 mg/L) along with the elevated concentration in the upstream receiving water (0.072 mg/L).

Similar to the mass-based limits for the WWTFs listed above, EPA considers it appropriate to regulate the discharge of phosphorus from Lincoln and Derry through either a concentration-based limit or a mass-based limit. EPA has conducted a comparison of these potential limits below and is presenting it here to solicit public comments regarding these options.

The concentration-based limit for Lincoln (based on the calculations presented in Appendix A), is 1.7 mg/L, applying a median background concentration of 3.8 µg/L. Likewise, the concentration-based limit for Derry is 1.9 mg/L, applying a median background concentration of 72 µg/L. For comparison, the potential mass-based limits were calculated using the equation above and are shown in Table 7 below:

Table 7: New Mass-based Total Phosphorus Limit Calculations

WWTF	Q _s (MGD)	Q _e (MGD)	Q _d (MGD)	C _s (mg/L)	M _e (lb/day)
Lincoln	24.98	0.308	25.29	0.0038	18.2
Derry	468.8	1.02	469.82	0.072	71.2

For Lincoln, the mass-based limit of 18.2 lb/day would be less stringent than the potential concentration-based limit of 1.7 mg/L for all effluent flows below 1.28 MGD. Given that the design flow of the Lincoln WWTF is 1.3 MGD (and the median flow during the review period was 0.47 MGD), EPA has determined that the mass-based limit is preferable while fully protective water quality standards under even under critical low flow conditions. Therefore, the mass-based limit of **18.2 lb/day** is being established through this General Permit, applicable from April 1 through October 31. EPA recognizes that the Lincoln WWTF is a lagoon facility with

⁸ The analysis for the other seven WWTFs discharging to freshwater were evaluated for phosphorus and EPA determined they did not have the reasonable potential to cause or contribute to an excursion of water quality standards.

limited ability to treat for phosphorus removal. However, EPA calculated the mass loading of phosphorus during the review period (from April through October) and determined that the WWTF discharged below 18.2 lb/day in 30 of the 35 months and exceeded the proposed limit five times, with a maximum load of 26.5 lb/day. Based on this analysis, EPA expects that the facility will be able to comply with the limit through optimization and/or source reduction efforts. Therefore, EPA has included a 2-year compliance schedule to allow time for the facility to come into consistent compliance.

For Derry, the mass-based limit of 61.7 lb/day would be less stringent than the potential concentration-based limit of 1.9 mg/L for all effluent flows below 3.9 MGD. Given that the design flow of the Derry WWTF is 4.09 MGD (and the median flow during the review period was 1.79 MGD), EPA has determined that the mass-based limit is preferable while fully protective water quality standards even under critical flow conditions. Therefore, the mass-based limit of **61.7 lb/day** is being established through this General Permit, applicable from April 1 through October 31. EPA recognizes that the Derry WWTF is a lagoon facility with limited ability to treat for phosphorus removal. EPA calculated the mass loading of phosphorus during the review period (from April through October) and determined that the WWTF discharged below 61.7 lb/day in 24 of the 35 months and exceeded the proposed limit 11 times, with a maximum load of 131.7 lb/day. Based on this analysis, EPA expects that the facility will not be able to comply with the limit through optimization and/or source reduction efforts and that a facility upgrade is likely necessary. Therefore, EPA has included a 4-year compliance schedule to allow time for the facility to come into compliance.

Ambient Phosphorus Monitoring

Finally, any Permittees discharging to freshwater with a dilution factor above 1.1 and below 100⁹, shall develop and implement a sampling and analysis plan for biennially collecting monthly samples at a location upstream of the facility. Samples shall be collected once per month, from April through October, every even calendar year. Sampling shall be conducted on any calendar day that is preceded by at least 72 hours without rainfall of 0.1 inches of rainfall or greater. A sampling plan shall be submitted to EPA and NHDES at least three months prior to the first planned sampling date.

Among the eligible WWTFs, this requirement applies to the following facilities: Somersworth, Lincoln, Ashland, Jaffrey, Milford, Merrimack, Claremont, Newport and Littleton. Additionally, given the cumulative pressures due to phosphorus loading on the lower Merrimack River, the Derry, Penacook, Hooksett, and Allenstown WWTFs will also be required to monitoring effluent and ambient total phosphorus.

⁹ These specific exclusions were chosen to only require ambient TP monitoring for facilities where the data is likely to be useful in future permit development. For facilities outside the range of dilution, the ambient data is unlikely to significantly impact the next permit reissuance and the ambient monitoring is therefore not required for those facilities.

- ≥ 20 and < 100 4 per year ($LC_{50} \geq 100\%$)
- ≥ 100 and $< 1,000$ 2 per year ($LC_{50} \geq 50\%$)

The draft General Permit requires facilities that discharge to freshwater to conduct WET tests using the daphnid (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*) as test species. Facilities that discharge to marine waters are to conduct WET tests using the mysid shrimp (*Mysidopsis bahia*) and the inland silverside (*Menidia beryllina*) as test species; for facilities discharging to marine waters with a dilution factor below 20, a third species is required: the Sea Urchin (*Arbacia punctulata*). However, EPA acknowledges that some of the WWTFs eligible for coverage under this General Permit have previously been authorized for a reduction in either frequency or number of species, or both, based on a site-specific analysis of most sensitive species, effluent variability, etc. In general, EPA will apply the frequency and species listed above based on dilution factor. However, for facilities with a dilution factor of 100 or greater, any reduction in frequency under their current individual permit will be carried forward in the authorization to discharge under this General Permit. For facilities with a dilution factor below 100, previous reductions in frequency will not be carried forward given that the large size of these facilities (*i.e.*, greater than 1 MGD) combined with the limited available dilution indicate a greater potential for toxic impacts in the receiving water. Conversely, if a WWTF currently has a WET limit that is more stringent than the limits described above, that limit will be carried forward to comply with anti-backsliding regulations found at 40 CFR § 122.44(l). All new or more stringent WET limits are listed in Attachment E of the draft General Permit.

Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedures and protocols specified in Attachments A and B (for freshwater discharges) or Attachments C and D (for marine discharges) of the draft General Permit.

In addition, EPA's 2018 *National Recommended Water Quality Criteria* for aluminum are calculated based on water chemistry parameters that include dissolved organic carbon (DOC), hardness and pH. Since aluminum monitoring is required as part of each WET test, an accompanying new testing and reporting requirement for DOC, in conjunction with each WET test, is warranted for freshwater discharges in order to assess potential impacts of aluminum in the receiving water. Facilities (especially facilities with a WET frequency less than 4/year) are welcome to conduct additional sampling for pH, DOC, and hardness for use in calculating aluminum criteria using this method. Such additional sampling is not required by the permit but may provide for a more robust analysis of the site-specific aluminum criteria in the future.

WET Re-Test and Toxicity Identification Evaluation and Toxicity Reduction Evaluation (TIE/TRE)

To ensure the receiving water is free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife, throughout the permit term, EPA has incorporated additional WET requirements described below.

The Permittee shall conduct at least two accelerated re-tests (if based on a violation of a WET limit, only for the affected species) at 14-day intervals which must be started within 14 days and 28 days of receiving the following results:

- any WET test results in a violation of any WET limit and the test acceptability criteria were met (only re-test for the species that failed); or
- the Permittee identifies or is provided notice of a sudden and significant death of large numbers of fish and/or shellfish in the vicinity of the discharge (test for all species identified in permit).

If the receiving water was used as the dilution water and is suspected to be toxic (e.g., based on results from the initial test), the Permittee shall conduct the accelerated WET tests using laboratory water as the dilution water with a similar pH and hardness as the receiving water. If the WET tests using laboratory water do not violate any WET limits, the Permittee shall return to a normal monitoring frequency but should request to continue to use laboratory water as the dilution water based on these results. If either accelerated WET test violates any WET limits (and the test acceptability criteria were met), the discharge is considered to have persistent toxicity and the Permittee must immediately initiate a Toxicity Identification Evaluation and Toxicity Reduction Evaluation (TIE/TRE) in accordance with subpart b below to resolve any toxic impacts on the receiving water.

The details of these requirements are presented in the Draft General Permit and were developed based on guidance available in EPA's *2024 NPDES WET Permit Writers' Manual*¹⁰. EPA notes that the results of the TIE/TRE might also lead to additional, future NPDES permit controls, such as additional WET permit limits, chemical-specific permit limits, or a compliance requirement to reduce or eliminate toxicity.

Annual Chemical Monitoring

As noted above, New Hampshire statute and regulations state that, "all surface waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life...." (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-Wq 1703.21(a)(1)).

Given that there are other sources of toxic effects (including to human health) that may not be captured by WET testing, EPA has included additional chemical monitoring in the Draft General Permit. To ensure that the Permittee and EPA are aware of any changes in the chemical characteristics of the discharge that might merit a review of the water quality-based effluent limits, as authorized by Section 402(a)(2) of the CWA and 40 CFR § 122.48, the Draft General Permit proposes additional monitoring requirements for a broad range of contaminants. Specifically, EPA has included requirements for annual monitoring of both the effluent and the receiving water immediately upstream of the discharge (taken on the same day during the third

¹⁰ Available at: <https://www.epa.gov/system/files/documents/2024-06/npdes-wet-permit-writers-manual.pdf>

calendar quarter to capture relatively low flow conditions) for all the pollutants in Attachment I of the Draft General Permit (which is based on the current NPDES Application Form 2A Tables B and C). All effluent and ambient results shall be reported in NetDMR for the quarterly DMR report due by October 15 of each year.

These data will provide assurance that the pollutant loading from the WWTF outfall characterized in the most recent permit application, and the ambient conditions upon which the analyses in this permit reissuance were based, have not changed to a degree that would merit new or more stringent water quality-based effluent limits (WQBELs) during the permit term based on numeric or narrative WQS effective at that time.

In addition, the broad range of pollutants in this new monitoring requirement includes many common toxic pollutants. This monitoring will ensure that the sublethal effects of pollutants that are present in the effluent can be considered by the Permittee and by EPA in future permitting decisions or, as necessary to support a TIE/TRE.

3.1.10 Aesthetics, Solids and Oil & Grease

New Hampshire surface water quality standards include several narrative requirements related to aesthetics, solids and oil & grease, as follows:

Env-Wq 1703.03(c)(1) – All surface waters shall be free from substances in kind or quantity that...

- a. Settle to form harmful benthic deposits;
- b. Float as foam, debris, scum or other visible substances;
- c. Produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated uses;

Env-Wq 1703.03(c)(3) – Tainting substances shall not be present in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.

Env-Wq 1703.09(b) – Class B waters shall contain no oil or grease in such concentrations that would impair any existing or designated uses.

Env-Wq 1703.10(b) – Class B waters shall contain no color in such concentrations that would impair any existing or designated uses, unless naturally occurring.

Env-Wq 1703.12(b) – Class B waters shall contain no slicks, odors, or surface floating solids that would impair any existing or designated use, unless naturally occurring.

Env-Wq 1703.11(b) Turbidity. Class B waters shall not exceed naturally occurring conditions by more than 10 NTUs.

To ensure compliance with these narrative water quality standards, the Draft General Permit, in the table at Part II.A.1. includes a reporting requirement for “Aesthetics,” and a footnote which more specifically requires the following monitoring requirements:

Once per month, the Permittee shall conduct a visual inspection of the receiving water in the vicinity of the outfall and report any changes in the receiving water that may be caused by the discharge as follows:

- 1) any observable change in odor,
- 2) any visible change in color,
- 3) any visible change in turbidity,
- 4) the presence or absence of any visible floating materials, scum or foam,
- 5) the presence or absence of any visible settleable solids,
- 6) the presence or absence of any visible film or sheen on the surface of the water.

Although there is no objective means to measure the impact of the discharge on the taste of the receiving water, the Permittee shall report to EPA and NHDES any complaints it receives from the public regarding taste and/or odor and document what remedial actions, if any, it took to address such complaints.

The results do not need to be submitted each month. Rather, an annual summary of all 12 monthly results shall be submitted as an electronic attachment to the December DMR by each January 15th for the previous calendar year.

If an oily sheen is observed on the surface of the water in the vicinity of the outfall during the monthly visual inspection, the Permittee shall follow the procedures described in Part II.H.5 of the permit related to accelerated WET testing.

3.1.11 Benthic Survey

New Hampshire surface water quality standards address bottom pollutants at Env-Wq 1703.03(c)(1) which requires “All surface waters shall be free from substances in kind or quantity that: a. Settle to form harmful benthic deposits;” and at Env-Wq 1703.08(b) which states that Class B waters “shall contain no benthic deposits that have a detrimental impact on the benthic community, unless naturally occurring.”

To ensure compliance with these standards, the Draft General Permit requires that all Permittees with a dilution factor below 100 conduct a benthic survey to assess impacts from the discharge to aquatic life in the benthic environment. The dilution threshold of 100 was chosen because EPA considers that it is extremely unlikely to adversely affect the downstream benthic environment after such significant dilution. The Draft General Permit proposes a requirement of one such survey per permit term during the third calendar quarter that begins at least 12 months from the effective date of the permit. The third calendar quarter represents the season of relatively low flow when the discharge has less dilution and is, therefore, more

likely to impact the benthic population. The initial 12 months of the permit term allows the Permittee sufficient time to plan for this survey after permit issuance while ensuring results are available relatively soon in case further action is needed to protect the benthic population. The results of the benthic survey will assist EPA in the development of any future permit conditions needed to ensure compliance with the narrative standards above.

The permit requires benthic grab samples to be taken at three locations sited along each of two transects (one immediately upstream/upgradient of the discharge at a location considered to be unimpacted by the discharge, and one downstream/downgradient of the discharge immediately outside of the estimated zone of initial dilution). Along each transect, duplicate samples shall be taken in the thalweg along with sites near each shoreline, for a total of six samples along each transect and 12 samples total. Organisms shall be sorted and identified to the lowest possible taxonomic level. Counts shall be standardized to densities per square meter of bottom. To characterize the bottom, grain size samples shall be collected at each grab site.

In order to ensure scientifically defensible results, taxonomy must be performed by a professional freshwater macroinvertebrate taxonomist who, at a minimum, holds and maintains for the duration of the contract a certification from the Society of Freshwater Science for eastern genera in group 1 (Crustacea and Arthropods other than EPT and Chironomidae), group 2 (Ephemeroptera, Plecoptera, and Trichoptera nymphs and larvae only) and group 3 (Chironomidae larvae only).

A report summarizing the results and comparing the upstream and downstream benthic populations shall be submitted by the following January 15 as an electronic attachment to the DMR.

3.1.12 Per- and polyfluoroalkyl substances (PFAS)

As explained at <https://www.epa.gov/pfas>, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects.¹¹ EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

On September 30, 2019, NH DES adopted Maximum Contaminant Levels (MCLs) and Maximum Contaminant Level Goals (MCLGs) for drinking water at Env-DW 705.06 and Ambient Groundwater Quality Standards (AGQs) at Env-Or 603 for the following PFAS:

¹¹ EPA, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan*, EPA 823R18004, February 2019. Available at: https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf

	<u>MCLs/AGQs</u>	<u>MCLGs</u>
Perfluorohexanesulfonic acid (PFHxS)	18 ng/L	0
Perfluorononanoic acid (PFNA)	11 ng/L	0
Perfluorooctanesulfonic acid (PFOS)	15 ng/L	0
Perfluorooctanoic acid (PFOA)	12 ng/L	0

The September 2019 PFAS regulations were challenged in state court and are currently enjoined pending resolution of the litigation. On July 23, 2020, the New Hampshire legislature enacted legislation establishing MCLs and AGQs for these PFAS in State statute at the identical levels as the challenged regulations. The statutory MCLs and AGQs became effective on July 23, 2020.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, and consistent with recent EPA guidance,¹² the Draft General Permit requires that the Facility conduct quarterly influent, effluent and sludge sampling for PFAS chemicals and annual sampling of certain industrial users. In EPA's judgment, PFAS monitoring of influent, effluent and sludge is necessary to better understand the fate and transport of PFAS throughout the treatment process. Additionally, these data may be used to inform future decisions regarding appropriate sludge disposal practices.

Monitoring and reporting for PFAS in the sludge of lagoon facilities (*i.e.*, Lincoln WWTP, Ashland WWTF, Derry WWTP, Lancaster WWTF and Charlestown WWTP) shall only be done once per permit term, in the first full 3rd calendar quarter following 6 months after the effective date of the authorization. This limited sampling for lagoon facilities is due to the inherent low variability of sludge in lagoons as well as the fact that the sludge is not being disposed of regularly. EPA considers that it is not necessary to require more frequent measurements of the same sludge that is remaining in the lagoons. This sampling shall include at least one representative sample per individual lagoon cell. Permittee shall submit a sampling plan to the NHDES Residual Management Section for review and approval at least 30 days prior to sampling.

The quarterly PFAS monitoring shall begin the first full calendar quarter beginning six months after the authorization date under the General Permit. The annual monitoring for certain industrial users shall begin the first full calendar year following the authorization date under the General Permit.

The purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a facility specific basis. EPA is authorized to require this monitoring and reporting by CWA § 308(a), which states:

¹² Radhika Fox, Assistant Administrator, EPA to Water Division Directors, EPA Regions 1-10, December 5, 2022, Subject: "Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs." Available at: https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf

“SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—

(A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require;”.

(See 40 CFR § 122.21(e)(3)(ii) and 40 CFR § 122.44(i)(1)(iv)(B)).

In the absence of a final 40 CFR § 136 method for measuring PFAS in wastewater and sludge, the Draft General Permit requires the use of Method 1633. Monitoring should include each of the 40 PFAS parameters detectable by Method 1633 (see Draft General Permit Attachment H for list of PFAS parameters) and the monitoring frequency is quarterly. Reporting of all 40 PFAS analytes is necessary to address the emerging understanding and remaining uncertainties regarding sources and types of analytes of PFAS in wastewater and their impacts. While NHDES has currently adopted MCLs for only 4 of these analytes as described above, it is possible that MCLs, water quality criteria and/or effluent limitation guidelines could be adopted for many of the other 36 analytes measured by Method 1633 during the life of the permit. Therefore, EPA considers it prudent to require reporting for all 40 analytes that are measured using Method 1633 to ensure EPA has sufficient data to address each of these PFAS analytes in the future. This level of monitoring is recommended in EPA’s *October 2021 PFAS Strategic Roadmap*¹³ and in an EPA memo dated April 28, 2022, called *Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority*¹⁴.

All PFAS results must be reported on DMRs (see 40 CFR § 122.41)(l)(4)(i)). This approach is consistent with 40 CFR § 122.44(i)(1)(iv)(B) which states that in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.

¹³ https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

¹⁴ https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf

Additionally, EPA has recently published Method 1621 to screen for organofluorines in wastewater. Organofluorines (molecules with a carbon-fluorine bond) are rarely naturally occurring and the most common source of organofluorines are PFAS and non-PFAS fluorinated compounds such as pesticides and pharmaceuticals. EPA's memo dated December 5, 2022 (referenced above) related to *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs* indicates that "The draft Adsorbable Organic Fluorine CWA wastewater method 1621 can be used in conjunction with draft method 1633, if appropriate." Given the future regulatory uncertainty and that this AOF monitoring will screen for a broader range of organofluorines, such as PFAS and other emerging contaminants, EPA considers it appropriate to monitoring for AOF as well as PFAS to ensure the discharge is fully characterized with respect to these pollutants in the next permit reissuance. The Permittee shall monitor Adsorbable Organic Fluorine using Method 1621 once per quarter concurrently with PFAS monitoring to screen for a broader range of these types of emerging contaminants. This requirement also takes effect the first full calendar quarter following six months after the effective date of each facility's authorization to discharge under the permit.

All monitoring results may be used by EPA in the next permit reissuance to ensure the discharge continues to protect designated uses.

3.2 Industrial Pretreatment Program

EPA notes that among the eligible WWTFs under this General Permit, there are seven that currently conduct an Industrial Pretreatment Program (IPP). These seven WWTFs are Somersworth, Dover, Jaffrey, Milford, Derry, Merrimack, and Claremont.¹⁵ EPA has evaluated all eligible WWTFs and determined that these seven WWTFs will be required to continue to conduct an IPP and none of the other eligible WWTFs will be required to develop an IPP.

For Permittees that are not required to conduct an IPP, the Draft General Permit includes conditions that are necessary to allow EPA and NHDES to ensure that pollutants discharged to a facility by an industrial user will not pass through the facility and cause violations of water quality standards and/or sludge use and disposal difficulties, or cause interference with the operation of the treatment works. The Draft General Permit requires Permittees to notify EPA and NHDES whenever a process wastewater discharge to a facility from an industrial user within a primary industry category is planned or if there is any substantial change in the volume or character of pollutants being discharged into the facility by a source that was discharging at the time of the effective date of permit coverage. The Draft General Permit requires Permittees to report to EPA and NHDES the name(s) of all industrial users subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR Chapter I, Subchapter N (Parts 405-415, 417-430, 432-447, 454, 455, 457-461, 463-469, and 471 as amended) who commence discharge to the facility after the effective date of permit coverage, and to forward any original pretreatment

¹⁵ Additionally, the City of Concord conducts an IPP which includes all Industrial Users discharging to the Penacook WWTF. The NPDES permit for Concord (Number NH0100901) includes the necessary requirements, so this General Permit does not require an IPP for Penacook.

reports submitted by industrial users within ninety (90) days of their receipt to EPA and copy NHDES in accordance with Part II.E.2 of the Draft General Permit.

For Permittees that are required to administer an IPP under 40 CFR Part 403 (*See also* CWA § 307; 40 CFR § 122.44(j)) the appropriate pretreatment program requirements were incorporated into the previous individual permit, which were consistent with federal pretreatment regulations in effect when the permit was issued. The Federal Pretreatment Regulations in 40 CFR part 403 were amended in October 1988, in July 1990, and again in October 2005. Those amendments established new requirements for implementation of pretreatment programs. Upon reissuance of this NPDES permit, the permittee is obligated to modify its pretreatment program to be consistent with current Federal Regulations. The activities that the permittee must address include, but are not limited to, the following: 1) develop and enforce EPA-approved specific effluent limits (technically-based local limits); 2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with Federal Regulations; 3) develop an enforcement response plan; 4) implement a slug control evaluation program; 5) track significant noncompliance for industrial users; and 6) establish a definition of and track significant industrial users.

These requirements are necessary to ensure continued compliance with the POTW's NPDES permit and its sludge use or disposal practices.

In addition to the requirements described above, the Draft General Permit requires the Permittee to submit to EPA in writing, within 180 days of the permit's effective date, a description of proposed changes to Permittee's IPP deemed necessary to assure conformity with current federal pretreatment regulations. These requirements are included in the Draft General Permit to ensure that the pretreatment program is consistent and up-to-date with all pretreatment requirements in effect. Lastly, the Permittee must continue to submit, annually by the date indicated in Part II.F.5 of the permit, a pretreatment report detailing the activities of the program for the twelve-month period ending 60 days prior to the due date.

For all permittees, the General Permit requires annual PFAS sampling of several types of industrial users. For each of these industrial users, EPA recognizes that the Permittees may develop or apply other regulatory mechanisms, including local limits, pretreatment programs, industrial discharge permits, and sewer use ordinances to transfer all or part of this monitoring requirement to the industrial user, as it deems appropriate or necessary.

3.3 Sludge Conditions

Section 405(d) of the Clean Water Act requires that EPA develop technical standards regarding the use and disposal of sewage sludge. On February 19, 1993, EPA promulgated technical standards. These standards are required to be implemented through permits. The conditions in the permit satisfy this requirement.

3.4 Infiltration/Inflow (I/I)

Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity and the efficiency of the treatment works and may cause bypasses to secondary treatment. It greatly increases the potential for sanitary sewer overflows (SSOs) in separate systems, and combined sewer overflows (CSOs) in combined systems.

The Draft General Permit includes a requirement for the permittees to control infiltration and inflow (I/I) within the sewer collections system it owns and operates. The permittees shall develop an I/I removal program commensurate with the severity of I/I in the collection system. This program may be scaled down in sections of the collection system that have minimal I/I.

3.5 Operation and Maintenance

3.5.1 Adaptation Planning for the Wastewater Treatment System (WWTS) and/or Sewer System

The Draft General Permit, in Part II.C.1 requires the Permittees and Co-permittee(s) to develop an Adaptation Plan to address major storm and flood events as part of their operation and maintenance planning for the part of the WWTS and/or sewer systems that they each own and operate. These requirements are new. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the WWTS and/or sewer system and has included a schedule in the Draft General Permit for completing these requirements.

See Appendix D for a further rationale regarding these Adaptation Plan requirements.

3.5.2 Operation and Maintenance of the Sewer System

The standard permit conditions for 'Proper Operation and Maintenance', found at 40 CFR § 122.41(e), require the proper operation and maintenance of permitted wastewater systems and related facilities to achieve permit conditions. The requirements at 40 CFR § 122.41(d) impose a 'duty to mitigate' upon the permittee, which requires that "all reasonable steps be taken to minimize or prevent any discharge violation of the permit that has a reasonable likelihood of adversity affecting human health or the environment. EPA and NHDES maintain that an I/I removal program is an integral component of ensuring permit compliance with the requirements of the permit under the provisions at 40 CFR § 122.41(d) and (e).

General requirements for proper operation and maintenance, and mitigation have been included in Part V of the permit. Specific permit conditions have also been included in Part II.C.

and II.D. of the Draft General Permit. These requirements include mapping of the wastewater collection system, preparing and implementing a collection system operation and maintenance plan, reporting of unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to separate sewer collection systems (combined systems are not subject to I/I requirements) to the extent necessary to prevent SSOs and I/I related effluent violations at the Wastewater Treatment Facility and maintaining alternate power where necessary. These requirements are included to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment.

Some of the requirements in the Draft General Permit are not included in some of the current individual permits, such as collection system mapping. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules, where appropriate, for completing these requirements in the Draft General Permit.

Because certain municipalities (including the towns of Rye, Wilton, Boscawen, Pembroke and Enfield as identified in Attachment E of the General Permit) own and operate a collection system that discharges to an eligible WWTF under this General Permit, they have been included as co-permittees for the specific permit requirements discussed in this section above. The historical background and legal framework underlying this co-permittee approach is set forth in Appendix E to this Fact Sheet, *EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works that Include Municipal Satellite Sewage Collection Systems*.

Once the General Permit is finalized, EPA will assign each Co-permittee a unique authorization number for purposes of reporting (using NetDMR through EPA's Central Data Exchange, as specified in Part II.J of the General Permit) in accordance with the requirements in Parts II.B, II.C and II.D. of the General Permit.

EPA notes that the City of Lebanon is currently listed as a co-permittee on the individual permit for the Hanover WWTF. However, Lebanon is subject to the same O&M requirements as part of its own NPDES permit for the entire collection system it owns and operates regardless of whether it is connected to the Lebanon WWTF or the Hanover WWTF. Therefore, EPA has determined that including Lebanon as both a permittee and co-permittee is unnecessary and duplicative, so Lebanon is not included as a co-permittee under this General Permit.

Additionally, the Town of Bedford is currently listed as a co-permittee on the individual permit for Merrimack (NH0100161, eligible for coverage under this General Permit) as well as the individual permit for Manchester (NH0100447, not eligible for this General Permit). EPA notes that coverage as a co-permittee of a single NPDES permit is sufficient because the requirement covers the entire collection system owned by Bedford, regardless of which POTW it ties into. Therefore, EPA has decided to maintain Bedford's coverage under the Manchester individual permit and they are not included in this General Permit.

3.6 Standard Conditions

The standard conditions of the permit are based on 40 CFR §122, Subparts A, C, and D and 40 CFR § 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

4.0 Obtaining Authorization to Discharge

4.1 Obtaining Coverage

To obtain coverage under the NH Medium WWTF GP, regulations at 40 CFR § 122.28(b)(2) provide three distinct options found in subparts (i), (v), and (vi). Subpart (i) indicates that eligible dischargers may submit a notice of intent (NOI) to be covered by the General Permit. Subpart (v) indicates that a discharger may be authorized under the General Permit without a notice of intent when EPA determines a NOI requirement would be inappropriate. Subpart (vi) indicates that EPA may notify a discharger that it is covered by a General Permit even if the discharger has not submitted a NOI to be covered.

Among these three options, EPA notes that the language of subpart (v) specifically excludes “publicly owned treatment works” (POTWs) from being authorized by means of this option. Given that most of the facilities eligible for coverage under this General Permit are POTWs, EPA must provide authorization to discharge by means of either subpart (i) or subpart (vi), or both. EPA has determined that both subpart (i) and subpart (vi) are appropriate options to obtaining coverage for all eligible dischargers listed in Attachment E of the General Permit, as specified below.

To obtain coverage under the General Permit, facilities identified in Attachment E of the General Permit may, at their election, submit a Notice of Intent (NOI) to EPA **within 30 days of the effective date of the General Permit** in accordance with 40 CFR § 122.28(b)(2)(i) & (ii). The contents of the NOI 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 CFR § 122.22, including the certification statement found at § 122.22(d), as follows:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

All NOIs must be submitted to EPA either electronically to R1NPDESReporting@epa.gov (Note: electronic submittals must include electronic signature) or physically to the following address:

United States Environmental Protection Agency
ATTN: Municipal Permits Section
5 Post Office Square – Suite 100
Mail Code – 06-1
Boston, Massachusetts 02109-3912

Alternately, the Director may notify a discharger that it is covered this General Permit, even if the discharger has not submitted a notice of intent to be covered in accordance with 40 CFR § 122.28(b)(2)(vi). EPA has determined that the eligible dischargers listed in Attachment E of the General Permit 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.

Facilities to be covered under this General Permit will maintain coverage under their existing individual permits until receiving written notification from EPA of authorization to discharge under the NH Medium WWTF GP. Such authorization will be effective upon the date indicated in written notice from EPA. As a precondition to obtaining authorization to discharge under the NH Medium WWTF GP, authorization to discharge pursuant to their individual permits will be removed using appropriate procedures under Part 124. Therefore, authorization to discharge under the NH Medium WWTF GP will be subject to completion of appropriate Part 124 proceedings and will be effective upon the date indicated in written notice from EPA.

Continuation of Coverage

If this General Permit is not reissued prior to its expiration date, it will be administratively continued in accordance with the Administrative Procedures Act (5 U.S.C. 558(c)) and 40 CFR § 122.6 and remain in full force and in effect for discharges covered prior to its expiration. In lieu of a permit reapplication, each covered discharger must submit the required facility-specific information listed in Part II.I of the General Permit. This information is necessary to ensure EPA has sufficient information to develop the reissuance of the General Permit for each facility that will protect water quality standards based on updated information.

4.2 When the Director May Require Application for an Individual NPDES Permit

The Director may require any operator authorized by or requesting coverage under this general permit to apply for and obtain an individual NPDES permit. Any interested person may petition the Director to take such action based on 40 CFR § 122.28(b)(3).

4.3 When an Individual Permit May Be Requested

In accordance with 40 CFR § 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. 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 is issued to an operator otherwise subject to this General Permit, the applicability of this permit to that owner or operator is automatically terminated on the effective date of the individual permit.

4.4 EPA Determination of Coverage

Any operator may request to be covered under this General Permit but the final authority rests with EPA. Coverage under this general permit will not be effective until receipt of notification of inclusion (*i.e.*, authorization to discharge) from EPA. The effective date of coverage will be the date indicated in the authorization to discharge provided by EPA in writing.

Any operator authorized to discharge under this General Permit will receive written notification from EPA. Failure to receive from EPA written notification of permit coverage means that the operator is not authorized to discharge under this General Permit.

5.0 Federal Permitting Requirements

5.1 Ocean Discharge Act

EPA has determined that the Seabrook WWTF is seaward of the territorial sea baseline and, therefore is subject to the requirements of Section 403 of the Clean Water Act (CWA). Prior to draft General Permit development, as required by Section 403(c) of the CWA, EPA assessed the effect of Seabrook's WWTF effluent on diversity, productivity and stability of the ocean's ecosystem in the vicinity of the outfall. On the basis of the limited available information, EPA determined that the treatment plant discharge, as regulated by this permit, should not cause unreasonable degradation of the marine environment. This determination was made in accordance with 40 CFR Part 125, Subpart M (Ocean Discharge Criteria) and a summary of EPA's findings is included in Appendix F.

As required by 40 CFR § 125.123(d)(4), the draft General Permit contains a clause stating that the permit will be modified or revoked at any time if new data indicates that there may be unreasonable degradation of the marine environment.

5.2 Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority to and imposes requirements on federal agencies regarding species of fish, wildlife, or plants that have been federally listed as endangered or threatened (listed species) and regarding habitat of such species that has been designated as critical (critical habitat).

Section 7(a)(2) of the ESA requires every federal agency, in consultation with and with the assistance of the Secretary of the Interior, and the Secretary of Commerce, to ensure that any action it authorizes, funds or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for federally protected bird, terrestrial and freshwater species, while the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) administers Section 7 consultations for federally listed marine species (including marine mammals and reptiles), as well as for listed anadromous fish species.

The federal action being considered in this case is EPA's proposed issuance of the Draft National Pollutant Discharge Elimination System (NPDES) General Permit for New Hampshire Medium Wastewater Treatment Facilities ("NH Medium WWTF GP") that are treatment works treating domestic sewage (collectively "Facilities") which discharge treated wastewater to certain Class B surface waters of the State of New Hampshire. The Draft General Permit is intended to authorize discharges from wastewater treatment facilities in New Hampshire that meet the criteria listed in Section 1.2 (Eligibility) and Section 1.3 (Exclusions) of this Fact Sheet. According to EPA's screening of WWTFs in New Hampshire, 21 Facilities are eligible for coverage under the proposed General Permit (see Attachment E of the General Permit). As the federal agency charged with authorizing the General Permit's coverage of the Facilities' pollutant discharges, EPA assesses potential impacts to federally listed species and critical habitat from the discharges and initiates consultation to the extent required, under Section 7(a)(2) of the ESA.

EPA has reviewed the species of fish, wildlife, and plants in the expected action areas of the 21 eligible Facility outfalls to determine if EPA's proposed General Permit could potentially impact ESA endangered or threatened species and critical habitat in these areas of New Hampshire. Regarding protected species under the jurisdiction of USFWS, two species may be present in the action area of all 21 of the Facilities' discharges¹⁶, the endangered northern long-eared bat (*Myotis septentrionalis*) and the proposed endangered tricolored bat (*Perimyotis subflavus*).

According to the USFWS, the endangered northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." This species is not considered aquatic. However, because the Facilities' projected action areas in various locations across New Hampshire overlap with the general statewide range of the northern long-eared bat, EPA prepared a northern long-eared bat Determination Key profile for the NH Medium WWTF GP proposed issuance and submitted it to USFWS through the USFWS Information for Planning and Consultation (IPaC) System website. In response, the USFWS notified EPA by letter¹⁷ that based upon the General Permit project information provided by EPA, along with a standing USFWS analysis, the USFWS has determined that the proposed General Permit will have "No Effect" on the northern long-eared bat. The USFWS determination letter concluded EPA's consultation responsibilities for the proposed NH

¹⁶ USFWS Official Species List, Project Code: 2024-0091177, May 15, 2024.

¹⁷ USFWS NLE Bat No Effects Determination Letter, Project Code: 2024-0091177; May 15, 2024.

Medium WWTF GP federal action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

At this time, no such USFWS IPaC mechanism is in place to evaluate potential impacts to the proposed endangered tricolored bat. Because the habitat of the tricolored bat is generally similar to the NLE bat (overwintering - caves or mines; spring/summer/fall – deciduous live or dead hardwood trees), EPA has determined that the issuance of the General Permit would also have “no effect” on the proposed endangered tricolored bat.

This concludes EPA’s consultation responsibilities for the NH Medium WWTF GP federal permitting action under ESA section 7(a)(2) with respect to the northern long-eared bat and the tricolored bat. No ESA section 7 consultation is required with USFWS for these species.

Excluding the two bat species, the action areas of nine of the 21 eligible Facilities overlapped with at least one of eight additional federally listed species under the jurisdiction of USFWS.¹⁸ These eight species are identified as the threatened boreal forest cat, the Canada lynx (*Lynx canadensis*), the endangered flowering plant, the northeastern bulrush (*Scirpus ancistrochaetus*), the endangered flowering plant, the Jesup’s milk-vetch (*Astragalus robbinsii* var. *jesupii*), the threatened flowering plant, the small whorled pogonia (*Isotria medeoloides*), the endangered freshwater mussel, the dwarf wedgemussel (*Alasmidonta heterodon*), the endangered shore bird, the roseate tern (*Sterna dougallii dougallii*), and the two threatened shorebirds, the rufa red knot (*Calidris canutus rufa*), and the piping plover (*Charadrius melodus*).

A subsequent analysis, using the USFWS IPaC Northeast Determination Key¹⁹, confirmed that the proposed action may affect, but is not likely to adversely affect, the Canada lynx, the small whorled pogonia and the dwarf wedgemussel. The Northeast Determination Key further confirmed that the proposed action will have no effect on the northeastern bulrush, the roseate tern, the rufa red knot and the piping plover. Therefore, no further ESA section 7 coordination is required for these seven species.

USFWS IPaC Northeast Determination Key confirmed that the proposed action may affect the eighth protected species, the endangered flowering plant, the Jesup’s milk-vetch. This species is present in the vicinity of only one of the 21 Facility action areas, the Lebanon WWTF, which discharges to the mainstem of the Connecticut River in West Lebanon, New Hampshire. EPA has evaluated the potential impacts of the Proposed General Permit action on the Jesup’s milk-vetch. On the basis of the evaluation, EPA’s preliminary determination is that the action may affect, but is not likely to adversely affect, the Jesup’s milk-vetch. EPA will initiate an ESA section 7 informal consultation with USFWS during the Draft General Permit public comment

¹⁸ USFWS Official Species List Project Codes: 2024-0091177, May 15, 2024; 2024-0092135, May 17, 2024; 2024-0092195, May 17, 2024.

¹⁹ USFWS Northeast Determination Key Letter Project Codes: 2024-0091177, May 15, 2024; 2024-0092135, May 17, 2024; 2024-0092195, May 17, 2024.

period to analyze effects to this species from the proposed action and request concurrence with EPA's determination.

Regarding protected species under the jurisdiction of NOAA Fisheries, a number of anadromous and marine species and life stages are present in coastal New Hampshire waters and Great Bay. According to the NOAA Fisheries ESA section 7 Mapper, five of the 21 Facilities' action areas overlap with NOAA Fisheries listed species²⁰. These Facilities are located along the New Hampshire coast and in the Piscataqua River watershed.

The specific federally listed species and life stages under the jurisdiction of NOAA Fisheries are documented as follows: The endangered shortnose sturgeon (*Acipenser brevirostrum*) adult life stage, which migrates and forages from April 1 through November 30; the endangered/threatened Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) from all five Distinct Population Segments, including the adult and sub adult life stages, which migrate and forage year-round; the adult spawning life stage, which is found in New Hampshire waters from May 1 through August 31; the juvenile life stage, which migrates and forages year-round; the young-of-year life stage, which migrates and forages year-round; the post yolk-sac larvae life stage, which migrates and forages from May 1 through October 31; yolk sac larvae life stage, which is present from May 1 through September 30; and the egg life stage, which is present from May 1 through September 30. In addition, Atlantic sturgeon critical habitat area (Gulf of Maine Unit 4: Piscataqua River) overlaps with the action area of one facility, the Dover WWTF.

Of the five Facilities' action areas that overlap with NOAA Fisheries protected species, one action area is located in New Hampshire coastal waters. In addition to overlapping with shortnose sturgeon and Atlantic sturgeon, this action area, generated by the Seabrook WWTF, is the only action area that also overlaps with four species of protected sea turtles: the threatened green sea turtle (*Chelonia mydas*) North Atlantic Distinct Population Segment (DPS); the threatened loggerhead sea turtle (*Caretta caretta*) Northwest Atlantic Ocean DPS; the endangered leatherback sea turtle (*Dermochelys coriacea*); and the endangered Kemp's ridley sea turtle (*Lepidochelys kempii*). The adult and juvenile life stages of these turtles are present in New Hampshire coastal waters while migrating and foraging from June 1 through November 30.

In addition, the Seabrook WWTF coastal action area overlaps with the presence of two whale species, the endangered North Atlantic right whale (*Eubalaena glacialis*) and the endangered fin whale (*Balaenoptera physalus*). Adult and juvenile life stages of both species forage year-round in coastal waters of New Hampshire. The action area also overlaps with North Atlantic right whale Critical Habitat Unit 1: Feeding Area.

Because the NOAA Fisheries species noted above may be affected by five of the discharges authorized by the proposed General Permit, EPA has evaluated the potential impacts of the permit actions on these anadromous and marine species. On the basis of the evaluation, EPA's preliminary determination is that the action may affect, but is not likely to adversely affect, the

²⁰ NOAA Fisheries ESA Section 7 Mapper at: <https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper>.

relevant life stages of the NOAA Fisheries listed species above that are expected to inhabit the immediate coast near Seabrook Beach and the Piscataqua River Watershed in the vicinity of the action areas of the five discharges. In addition, EPA has made the preliminary determination that the proposed action may affect, but is not likely to adversely affect, the designated North Atlantic right whale critical habitat that overlaps the action area along the New Hampshire coast.

Therefore, EPA has judged that a formal consultation pursuant to Section 7 of the ESA is not required. EPA is seeking concurrence from NOAA Fisheries regarding this determination through the information in the Draft Permit, this Fact Sheet, as well as a programmatic section 7 consultation document that will be sent to NOAA Fisheries Protected Resources Division under separate cover.

EPA notified USFWS and NOAA Fisheries Protected Resources Division at the beginning of the public comment period that the Draft General Permit and this Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

Initiation of consultation is required and shall be requested by EPA or by USFWS/NOAA Fisheries where discretionary federal involvement or control over the action has been retained or is authorized by law and if: 1) new information reveals effects of the action may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; 2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the previous analysis; 3) a new species is listed or critical habitat designated that may be affected by the identified action; or 4) there is any incidental taking of a listed species that is not covered by an incidental take statement.

5.3 Essential Fish Habitat

5.3.1 Introduction

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §1801 et seq. (1998)), EPA is required to consult with the National Oceanic and Atmospheric Administration Fisheries Services (NOAA Fisheries) if EPA's action or proposed action that it funds, permits, or undertakes, may adversely impact any essential fish habitat (EFH). Adversely impact means any impact which reduces the quality and/or quantity of EFH (50 CFR § 600.910 (a)). Adverse impacts may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat wide impacts, including individual, cumulative, or synergistic consequences of actions.

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". See 16 U.S.C. § 1802(10). The EFH regulations clarify that "waters" includes aquatic areas and their associated physical, chemical, and biological properties that are used by the managed fish species, and

those areas historically used by those species, where appropriate. “Adverse impact” means any impact that reduces the quality and/or quantity of EFH. 50 CFR § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species’ fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Essential fish habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. § 1855(b) (1) (A)). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. A New England Fishery Management Council’s Omnibus Essential Fish Habitat Amendment in 2017 updated the descriptions. The information is included on the NOAA Fisheries website at:

<https://www.fisheries.noaa.gov/action/omnibus-essential-fish-habitat-amendment-2>.

In some cases, a narrative identifies rivers and other waterways that should be considered EFH due to present or historic use by federally managed species.

5.3.2 Federal Action

The federal action being considered in this case is EPA’s proposed NPDES General Permit for New Hampshire Medium Wastewater Treatment Facilities (NH Medium WWTF GP). There are 21 Facilities in New Hampshire that meet the requirements of the proposed General Permit. The Facilities are located primarily in the Connecticut River Watershed, the Piscataqua River Watershed and along the near coastal area of New Hampshire. EPA’s review of the relevant essential fish habitat information provided by NOAA Fisheries²¹ indicates that the Facilities’ discharges exist within designated EFH for the following 30 federally managed species and one Habitat Area of Particular Concern (HAPC). See Table EFH1.

Table EFH1: EFH Species and life stages in the vicinity of the 21 New Hampshire Medium Wastewater Treatment Facilities in the Connecticut River Watershed, the Piscataqua River Watershed and along the near coastal area of New Hampshire.

Species/Management Unit	Lifestage(s) Found at Location
American Plaice	Adult, Juvenile
Atlantic Butterfish	Adult, Juvenile
Atlantic Cod	Adult, Eggs, Juvenile, Larvae
Atlantic Herring	Adult, Eggs, Juvenile, Larvae
Atlantic Mackerel	Eggs, Juvenile, Larvae
Atlantic Salmon	ALL
Atlantic Sea Scallop	ALL
Atlantic Surfclam	Adult, Juvenile

²¹ NOAA Fisheries EFH Mapper at https://www.habitat.noaa.gov/apps/efhmapper/?page=page_3

Species/Management Unit	Lifestage(s) Found at Location	
Atlantic Wolffish	ALL	
Bluefin Tuna	Adult	
Bluefish	Adult, Juvenile	
Haddock	Juvenile	
Little Skate	Adult, Juvenile	
Longfin Inshore Squid	Adult, Juvenile	
Monkfish	Adult, Eggs/Larvae, Juvenile	
Northern Shortfin Squid	Adult	
Ocean Pout	Adult, Eggs, Juvenile	
Pollock	Eggs, Juvenile, Larvae	
Porbeagle Shark	ALL	
Red Hake	Adult, Eggs/Larvae/Juvenile	
Silver Hake	Adult, Eggs/Larvae	
Smooth Skate	Juvenile	
Spiny Dogfish	Adult Female, Adult Male, Sub-Adult Female	
Thorny Skate	Juvenile	
White Hake	Adult, Eggs, Juvenile, Larvae	
Windowpane Flounder	Adult, Eggs, Juvenile, Larvae	
Winter Flounder	Eggs, Juvenile, Larvae/Adult	
Winter Skate	Adult, Juvenile	
Witch Flounder	Adult	
Yellowtail Flounder	Adult, Juvenile	
HAPC Name		
Inshore 20m Juvenile Cod		
Name	Designation	Lifestage
Coastal Areas	Atlantic Salmon EFH	All
Cochecho River	Atlantic Salmon EFH	All

Therefore, consultation with NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act is required.

5.3.3 EPA’s Finding of all Potential Impacts to EFH

EPA has determined that the issuance of the proposed NH Medium WWTF GP may adversely affect the EFH of the 30 species and the one HAPC identified in the table above. The Draft Permit has been conditioned in the following way to minimize any impacts that reduce the quality and/or quantity of EFH:

- This Draft General Permit action does not cover WWTFs that discharge new sources of pollutants. This General Permit covers WWTFs that were previously covered by individual NPDES permits;
- Whole effluent toxicity tests conducted 2/year or 4/year²² are required by the Draft General Permit to meet water quality standards;
- Total suspended solids, pH, BOD₅/CBOD₅, total residual chlorine, total metals, total phosphorus, ammonia nitrogen, total nitrogen, *Escherichia coli*, *Enterococci*, and fecal coliform are regulated by the Draft General Permit²³ to meet New Hampshire water quality standards;
- The 21 Facilities expected to be covered under the proposed General Permit withdraw no surface water from the associated waterbodies in New Hampshire. There will be no impact that reduces the quality and/or quantity of EFH from impingement and entrainment of organisms;
- The Draft General Permit proposes effluent limitations and conditions for all 21 Facilities that were developed to be protective of all aquatic life; and
- The proposed Draft General Permit requirements minimize any reduction in quality and/or quantity of EFH, either directly or indirectly.

EPA believes that the conditions and limitations contained in the Draft NH Medium WWTF GP adequately protects all aquatic life, as well as the essential fish habitats and the habitat area of particular concern in the vicinity of the 21 WWTFs' discharges. Further mitigation is not warranted. Should adverse impacts to EFH and HAPCs be detected as a result of this permit action, or if new information is received that changes the basis for EPA's conclusions, NOAA Fisheries Habitat and Ecosystem Services Division will be contacted and an EFH consultation will be re-initiated.

As part of the overall EFH coordination, EPA routinely notifies NOAA Fisheries when an NPDES Draft General Permit and supporting Fact Sheet have been placed on public notice, along with a link to all relevant documents. In addition to this Fact Sheet and the Draft General Permit, information to support EPA's finding was included in a memo under separate cover that will be

²² The WET Testing frequency is dependent on each individual WWTF's Dilution Factor.

²³ The specific pollutants regulated depend on the past individual permit profile of each WWTF as well as the type of receiving water (freshwater or brackish water).

sent to the NOAA Fisheries Habitat and Ecosystem Services Division during the public comment period.

5.4 Historic Preservation

Facilities which adversely affect properties listed or eligible for listing in the National Registry of Historic Places under the National Historic Preservation Act of 1966 (NHPA), 16 USC §§470 et seq. are not authorized to discharge under the NH Medium WWTF GP. Based on the nature and location of the discharges, EPA has determined that the WWTFs eligible for authorization under this General Permit do not have the potential to affect a property that is either listed or eligible for listing on the National Register of Historic Places.

Electronic listings of National and State Registers of Historic Places are maintained by the National Park Service (<http://www.nps.gov/nr/>) and the New Hampshire Historical Commission (http://www.nh.gov/nhdhr/programs/national_register.html).

5.5 Coastal Zone Management (CZM) Consistency Review

The Coastal Zone Management Act (CZMA), 16 U.S.C. 1451 et seq., and its implementing regulations (15 CFR Part 930) require a determination that any federally licensed or permitted activity affecting the coastal zone with an approved Coastal Zone Management Program (CZMP) is consistent with the enforceable policies of the CZMP. In the case of general permits, EPA has the responsibility for making the consistency certification request and submitting it to the state for concurrence. EPA will request that the Federal Consistency Officer, New Hampshire Coastal Program, 222 International Drive, Suite 175, Portsmouth, NH 03801, provide a consistency concurrence that the proposed NH General WWTF GP is consistent with the NH CZMPs.

Among the WWTFs eligible for coverage under the General Permit, four WWTFs discharge to the coastal zone: Seabrook, Leavitt E. Magrath, Dover and Durham. These facilities must conduct proposed activities (*i.e.*, discharges) in a manner consistent with applicable NH CZMPs listed below. EPA has addressed policies identified as applicable by New Hampshire CZM to the issuance of the Draft General Permit. Policies that were not applicable to the federal action (reissuance of this permit) are noted with “NA”.

Protection of Coastal Resources:

1. Protect and preserve and, where appropriate, restore the water and related land resources and uses of the coastal and estuarine environments. The resources of primary concern are coastal and estuarine waters, tidal and freshwater wetlands, beaches, sand dunes, and rocky shores.

The Draft General Permit is consistent to the maximum extent practicable with this enforceable policy by prohibiting any discharge that EPA determines will cause, have the reasonable potential to cause or contribute to a violation of water quality standards. Discharges under the General Permit are from wastewater treatment facilities. The Draft General Permit requires facilities to meet discharge limits based on water quality standards. Discharge limits for the State of New Hampshire may be found in Part II of the General Permit.

EPA has determined that compliance with this permit will protect and preserve and, where appropriate, restore water resources in the various receiving waters and will, in turn, ensure that the uses of the receiving waters (*e.g.*, fishing) are likewise protected and preserved and, where appropriate, restored.

2. Protect, manage, conserve and where appropriate, undertake measures to maintain, restore, and enhance the fish and wildlife resources and related uses, including but not limited to commercial and recreational fishing, of the state.

The Draft General Permit is consistent to the maximum extent practicable with this enforceable policy by prohibiting any discharge that EPA determines will cause, have the reasonable potential to cause, or contribute to a violation of water quality standards. Part II of the Draft General Permit requires Permittees to meet WQBELs. These requirements are designed to, among other things, maintain fish and wildlife resources by preventing the discharge of pollutants to surface waters of the United States. The entrainment and impingement of aquatic organisms is not expected in association with this General Permit, as sites covered under this general permit do not utilize cooling water intake structures.

EPA has determined that compliance with this permit will protect, manage, conserve, maintain, and where appropriate, restore and enhance the fish and wildlife resources in the various receiving waters and will, in turn, ensure that the uses of the various receiving waters, including but not limited to commercial and recreational fishing, are likewise protected, managed, conserved, maintained, restored and enhanced.

3. Regulate the mining of sand and gravel resources in offshore and onshore locations so as to ensure protection of submerged lands, marine and estuarine life, and existing uses. Ensure adherence to minimum standards for restoring natural resources impacted from onshore sand and gravel operations. - **NA**
4. Undertake oil spill prevention measures, safe oil handling procedures and when necessary, expedite the cleanup of oil spillage that will contaminate public waters. Institute legal action to collect damages from liable parties in accordance with state law. – **NA**

5. Encourage investigations of the distribution, habitat needs, and limiting factors of rare and endangered animal species and undertake conservation programs to ensure their continued perpetuation.

The Draft General Permit is consistent to the maximum extent practicable with this enforceable policy by allowing coverage under this Draft General Permit only if the authorized discharges are not likely to adversely affect any species that are federally listed as endangered or threatened under the ESA or result in the adverse modification or destruction of habitat that is federally designated as critical under ESA. EPA shall complete consultation under the Endangered Species Act section 7 for this General Permit before any coverage is granted to facilities whose discharge may overlap the range of a federally protected species listed as threatened or endangered.

6. Identify, designate, and preserve unique and rare plant and animal species and geologic formations which constitute the natural heritage of the state. Encourage measures, including acquisition strategies, to ensure their protection. **See answer to 5, above.**

Recreation and Public Access:

7. Provide a wide range of outdoor recreational opportunities including public access in the seacoast through the maintenance and improvement of the existing public facilities and the acquisition and development of new recreational areas and public access. - **NA**

Managing Coastal Development:

8. Preserve the rural character and scenic beauty of the Great Bay estuary by limiting public investment in infrastructure within the coastal zone in order to limit development to a mixture of low and moderate density. - **NA**
9. Reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to preserve the natural and beneficial value of floodplains, through the implementation of the National Flood Insurance Program and applicable state laws and regulations, and local building codes and zoning ordinances. – **NA**
10. Maintain the air resources in the coastal area by ensuring that the ambient air pollution level, established by the New Hampshire State Implementation Plan pursuant to the Clean Air Act, as amended, is not exceeded. - **NA**
11. Protect and preserve the chemical, physical, and biological integrity of coastal water resources, both surface and groundwater.

The Draft General Permit is consistent with this enforceable policy by prohibiting any discharge that EPA determines will cause, have the reasonable potential to cause or contribute to a violation of applicable water quality standards and by setting discharge

limits. These requirements are designed to protect the waters of the coastal and estuarine environment.

12. Ensure that the siting of any proposed energy facility in the coast will consider the national interest and will not unduly interfere with the orderly development of the region and will not have an unreasonable adverse impact on aesthetics, historic sites, coastal and estuarine waters, air and water quality, the natural environment, public health and safety, and existing uses. - **NA**

Coastal Dependent Uses:

13. Allow only water dependent uses and structures on state properties in Portsmouth, Little Harbor, Rye Harbor, and Hampton, Seabrook Harbor, at state port and fish pier facilities and state beaches (except those uses or structures which directly support the public recreation purpose). For new development, allow only water dependent uses and structures over waters and wetlands of the state. Allow repair of existing overwater structures within guidelines. Encourage the siting of water dependent uses adjacent to public waters. - **NA**
14. Preserve and protect coastal and tidal waters and fish and wildlife resources from adverse effects of dredging and dredge disposal, while ensuring the availability of navigable waters to coastal-dependent uses. Encourage beach re-nourishment and wildlife habitat restoration as a means of dredge disposal whenever compatible. - **NA**

Preservation of Historic and Cultural Resources:

15. Support the preservation, management, and interpretation of historic and culturally significant structures, sites and districts along the Atlantic coast and in the Great Bay area.

The Draft General Permit is consistent to the maximum extent practicable with this enforceable policy by ruling ineligible for coverage under this General Permit any discharges which may adversely affect properties listed or eligible for listing in the National Registry of Historic Places under the National Historic Preservation Act of 1966, 16 U.S.C. Sections 470 et seq., as amended. Based on the nature and location of the discharges, EPA has determined that the WWTFs eligible for authorization under this General Permit do not have the potential to affect a property that is either listed or eligible for listing on the National Register of Historic Places.

Marine and Estuarine Research and Education:

16. Promote and support marine and estuarine research and education that will directly benefit coastal resource management. - **NA**

6.0 Public Comments, Hearing Requests and Permit Appeals

All persons, including applicants, who believe any condition of the Draft General Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the permit writer, Michael Cobb at the following email address: Cobb.Michael@epa.gov.

Prior to the close of the public comment period, any person may submit a written request to EPA for a public hearing to consider the Draft General Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the Draft General Permit, EPA will respond to all significant comments in a Response to Comments document attached to the Final General Permit and make these responses available to the public on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a final General Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who submitted written comments or requested notice.

General permits may not be appealed to the Environmental Appeals Board. Procedures governing actions by persons affected by a general NPDES permit, including petitions and applications for individual permits, as well as judicial appeals, are set forth in 40 CFR § 124.19(o) and 40 CFR § 122.28.

If for any reason, comments on the Draft General Permit and/or a request for a public hearing cannot be emailed to the permit writer specified above, please contact them at telephone number: (617) 918-1369.

7.0 Administrative Record

The administrative record on which this Draft General Permit is based may be accessed by contacting Michael Cobb at 617-918-1369 or via email to Cobb.Michael@epa.gov.

Date

Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency