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: NH0100790

PUBLIC NOTICE START AND END DATES: May 20, 2020 – June 18, 2020

NAME AND MAILING ADDRESS OF APPLICANT:

City of Keene
City Hall
580 Main Street
Keene, New Hampshire 03431

NAMES AND MAILING ADDRESSES OF CO-PERMITTEES

Town of Marlborough
Board of Selectmen
P.O. Box 487
Marlborough, NH 03455

Town of Swanzey
Swanzey Sewer Commission
P.O. Box 10009
Swanzey, NH 03446

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Keene Wastewater Treatment Plant
420 Airport Road
Swanzey, New Hampshire 03446

RECEIVING WATER AND CLASSIFICATION:

Ashuelot River (NHRIV802010301-38)
Ashuelot River Watershed - USGS Code: 01158000
Class B - Warm Water Fishery

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1 Proposed Action

The applicant named above, the "Permittee", has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from the Keene Wastewater Treatment Plant (WWTP), the "Facility", into the designated receiving water.

The permit currently in effect was issued on August 24, 2007 with an effective date of November 1, 2007 and expired on November 1, 2012 (the "2007 Permit"). The Permittee filed an application for permit reissuance with EPA dated June 21, 2012, as required by 40 Code of Federal Regulations (C.F.R.) § 122.6. Since the permit application was deemed timely and complete by EPA on July 24, 2012, the Facility's 2007 Permit has been administratively continued pursuant to 40 C.F.R. § 122.6 and § 122.21(d). EPA and the State conducted a site visit on October 25, 2018.

The 2007 Permit included two (2) co-Permittees, the Towns of Marlborough and Swanzey, which were responsible for complying with certain portions of the Permit. These two entities will continue to be co-Permittees in this Permit.

2 Statutory and Regulatory Authority

Congress enacted 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 as authorized by specific permitting sections of the CWA, one of which is § 402. *See* CWA §§ 303(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" in accordance with certain conditions. CWA § 402(a). 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 C.F.R. §§ 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 Section 301 and 402. *Arkansas v. Oklahoma,* 503 U.S. 91, 105 (1992). *See also* 40 C.F.R. §§ 122.4(d), 122.44(d)(1), 122.44(d)(5).

CWA §§ 301 and 306 provide for two types of effluent limitations to be included in NPDES permits: "technology-based" effluent limitations (TBELs) and "water quality-based" effluent limitations (WQBELs). *See* CWA §§ 301, 304(d); 40 C.F.R. Parts 122, 125, 131.

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 BOD_5, TSS and pH. *See* 40 C.F.R. § 133.

Under § 301(b)(1) of the CWA, POTWs must have achieved effluent limits based upon secondary treatment technology by July 1, 1997. 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 C.F.R. § 125.3(a)(1).

2.2 Water Quality Based Requirements

The CWA and federal regulations require that effluent limitations 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* § 301(b)(1)(C) of the CWA and 40 C.F.R. §§ 122.44(d)(1) and 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 C.F.R. § 131.10-12. Generally, WQSs consist of three parts: 1) beneficial designated use or uses 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) anti-degradation 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 C.F.R. § 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. Also *See* generally, Title 50, 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 numeric and narrative water quality criteria. 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 monthly average 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 C.F.R. § 122.44(d)(1)(vi)(A-C).

2.2.2 Anti-degradation

Federal regulations found at 40 C.F.R. § 131.12 require states to develop and adopt a statewide anti-degradation 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 anti-degradation policy ensures that high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and support recreation in and on the water, are maintained 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 Anti-Degradation 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 anti-degradation 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. Where NHDES determined that a proposed increase would cause a significant increase, the applicant must provide documentation to demonstrate that the lowering of water quality is necessary, 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 lower water quality. *See* Env-Wq 1708.10(b).

This permit is being reissued with effluent limitations 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, the 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.

The Keene WWTP discharges to the Ashuelot River, into waterbody segment #NHRIV802010301-38, which runs from the facility to the confluence with the South Branch of the Ashuelot River. The State of New Hampshire's 2016 303(d) list of impaired waters identifies surface waters which do not currently meet state water quality standards (NHDES 2016).

This segment of the Ashuelot River has been identified as violating water quality standards for unionized ammonia, total ammonia, chloride, copper, percent Dissolved Oxygen (DO) saturation, DO, total phosphorus, turbidity, and pH, all for aquatic life. This segment is impaired for primary contact recreation due to *Escherichia coli* and chlorophyll-a and for secondary contact recreation due to *Escherichia coli.* This segment is also impaired for fish consumption due to mercury.

States are required to prepare Total Maximum Daily Load (TMDL) analyses for receiving waters listed on the 303(d) list. A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL is essentially a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from direct and indirect discharges, determines the maximum load of the pollutant that can be discharged to a specific water body while maintaining WQSs for designated uses, and allocates that load to the various pollutant sources, including point source discharges, subject to NPDES permits. *See* 40 C.F.R. § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation for a NPDES permitted discharge, the effluent limit in the permit may not exceed the waste load allocation. *See* 40 C.F.R. § 122.44(d)(1)(vii)(B).

The State of New Hampshire has performed sampling necessary to perform a TMDL on the segment of the Ashuelot River from the Keene WWTP to the West Swanzey Wastewater Treatment Plant, but this TMDL has yet to be completed.

2.2.4 Reasonable Potential

Pursuant to CWA § 301(b)(1)(C) and 40 C.F.R. § 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. *See also* 33 U.S.C. § 1311(b)(1)(C). In addition, limitations "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 C.F.R. § 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 C.F.R. § 122.44(d)(1)(ii).

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 WQSs, the permit must contain WQBELs for that pollutant. *See* 40 C.F.R. § 122.44(d)(1)(i).

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 WQSs or it is deemed that the state has waived its right to certify. Regulations governing state certification are set forth in 40 C.F.R. § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 C.F.R. § 124.53 and expects that the Draft Permit will be certified.

If the State believes that any conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either the CWA §§ 208(e), 301, 302, 303, 306 and 307 and with appropriate requirements of State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. The only exception to this is that the sludge conditions/requirements implementing § 405(d) of the CWA are not subject to the § 401 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 the applicable procedures of 40 C.F.R. Part 124.

In addition, the State should provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since the State's certification is provided prior to permit issuance, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition.

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." *See* 40 C.F.R. § 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 limits based upon water quality standards and state requirements are contained in 40 C.F.R. § 122.4 (d) and 40 C.F.R. § 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 effluent flow 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 EPA's reasonable potential and

WQBEL calculations to ensure compliance with WQSs under § 301(b)(1)(C). Should the effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations may not be sufficiently protective (i.e. might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at the lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying the 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" wastewater effluent flow assumptions through imposition of permit conditions for effluent flow.[1] In this regard, the effluent flow limitation is a component of WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit is also 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 C.F.R. §§ 122.4(a) 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.

In addition, as provided in Part II.B.1 of this permit and 40 C.F.R. § 122.41(e), the permittee is required to properly operate and maintain all facilities and systems of treatment and control. Operating the facilities wastewater treatment systems as designed includes operating within the facility's design wastewater effluent flow.

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 though 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.

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[1] EPA's regulations regarding "reasonable potential" require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," *id* 40 C.F.R. §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)*

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 C.F.R. §§ 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 C.F.R. 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 C.F.R. §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the wastewater 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 C.F.R. Part 122.

NPDES permits require that the approved analytical procedures found in 40 C.F.R. Part 136 be used for sampling and analysis unless other procedures are explicitly specified. 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*.[2] 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 C.F.R. § 122.21(e)(3) (completeness), 40 C.F.R. § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 C.F.R. § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

[2] Fed. Reg. 49,001 (Aug 19, 2014).

- The method minimum level[3] (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or

- In the case of permit applications, 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 C.F.R. Part 126 or required under 40 C.F.R. chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

The Draft 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 C.F.R. §§ 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 the EPA NetDMR support portal webpage.[4]

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 Draft 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 II Standard Conditions.

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[3] 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).

[4] https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information

2.5 Standard Conditions

The standard conditions, included as Part II of the Draft Permit, are based on applicable regulations found in the Code of Federal Regulations. *See generally* 40 C.F.R. 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 C.F.R. § 122.44(l). Anti-backsliding provisions apply to effluent limits based on technology, water quality and/or state certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2007 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

3 Description of Facility and Discharge

3.1 Location and Type of Facility

The location of the treatment plant and Outfall 001 to the Ashuelot River are shown in Figure 1. The latitude and longitude of the outfall are 42^0 53' 27.614 N and 72^0 16' 28.101 W.

The Keene WWTP collects and treats domestic, commercial and industrial wastewater from the City of Keene and also accepts septage and holding tank waste of approximately 25,000 gpd. In addition, the WWTP accepts sanitary and industrial wastewater from the Towns of Marlborough and Swanzey. For the period of October 2017 through September 2018, the Towns of Marlboro and Swanzey contributed 47.6 million gallons (MG) and 16.4 MG of flow to the WWTP, respectively. This averages approximately 130,000 gallons per day (gpd) from Marlboro and 45,000 gpd from Swanzey. (personal communication, Donna Hanscom, 11/27/18).

The Town of Marlborough and the Swanzey Sewer Commission continue to be co-Permittees with the City of Keene. These co-Permittees own and operate sanitary wastewater collection systems that discharge flows to the Keene WWTP for treatment. These municipalities are co-Permittees for certain activities pertaining to proper operation and maintenance of their respective collection systems (*See* Parts I.B, I.C, and I.D. of the Draft Permit). The co-Permittees are required to comply with requirements to operate and maintain their collection systems so as to avoid discharges of sewage from the collection systems. These co-Permittees did not reapply for permit coverage. With letters sent on August 5, 2015 to these co-Permittees, the EPA waived their permit application requirements. EPA determined that the reapplication material that the City of Keene submitted contained sufficient information necessary to establish permit limits and conditions for the entire publicly owned treatment works, including those collection systems belonging to the co-Permittees.

The Facility has a design flow of 6.0 MGD, the annual average daily flow reported in the 2012 application was 3.49 MGD and the median flow for the last five (5) years has been 2.65 MGD. Keene's collection system is a separate system with no combined sewers. The Permittee has an approved pretreatment program in place, which includes flows from 11 significant industrial users, 5 of which are categorical industrial users. Pollutants introduced into POTWs by a non-domestic source shall not pass through the POTW or interfere with the operation or performance of the treatment works.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from October 2014 through October 2019 is provided in Appendix A of this Fact Sheet.

3.1.1 Treatment Process Description

The Keene WWTP is designed as a 6.0 million gallon per day (MGD) wastewater treatment facility using an activated sludge aeration treatment process. The influent, after being aerated by injected liquid oxygen at the main pumping station and passing through an aerated grit chamber, is split between two primary clarifier tanks. Settled sludge is pumped to two aerated holding tanks, while the wastewater stream continues to two aeration basins. After leaving the two aeration basins, the wastewater enters one of two secondary clarifiers for further settling. Sludge deposited in these clarifiers is pumped to the sludge holding tanks. The effluent from the secondary clarifier is then routed to the ultraviolet (UV) light disinfection building, where disinfection by UV light is conducted. Effluent sampling is conducted after disinfection inside of this building. The effluent is then piped underground for about 500 feet, before splitting into 2 pipes that discharge about 50 feet apart to the Ashuelot River. A flow diagram of the Keene WWTP is shown in Figure 2.

Sludge disposal is accomplished by first thickening and then dewatering the sludge with a belt filter press. Sludge is hauled offsite by Waste Management Inc. and disposed of in a municipal solid waste landfill in Rochester, NH. For calendar year 2017, the Keene WWTP generated 770 dry metric tons of sewage sludge that was hauled offsite for disposal.

3.1.2 Collection System Description

The collection system discharging to the treatment plant consists of separate sanitary sewers. In addition to wastewater, separate sanitary sewers convey inflow and infiltration (I/I). 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 of secondary treatment. I/I greatly increase the potential for sanitary sewer overflows (SSO) in separate sanitary sewer systems. For the years of 2014 through 2017, the Permittee estimates that total I/I was 32% of total flows to the treatment plant. Specific requirements for I/I control and reporting of SSOs are detailed in Section I.C of the Permit.

4 Description of Receiving Water and Dilution

4.1 Receiving Water

The Keene WWTP discharges through Outfall 001 to Ashuelot River, within Segment NHRIV802010301-38. This segment is 0.226 miles long and travels from the Facility's discharge point to the confluence with South Branch of the Ashuelot River. The Ashuelot River is part of the Ashuelot River watershed which flows to the Connecticut River and eventually to Long Island Sound.

This segment of the Ashuelot River is classified as a Class B warm water fishery by the State of New Hampshire. According to New Hampshire's WQS (RSA 485-A:8), "*Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics, shall contain a dissolved oxygen content of at least 75 percent of saturation, and shall contain not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 126 Escherichia coli per 100 milliliters, or greater than 406 Escherichia coli per 100 milliliters in any one sample; and for designated beach areas shall contain not more than a geometric mean based on at least 3 samples obtained over a 60-day period of 47 Escherichia coli per 100 milliliters, or 88 Escherichia coli per 100 milliliters in any one sample; unless naturally occurring. There shall be no disposal of sewage or waste into said waters except those which have received adequate treatment to prevent the lowering of the biological, physical, chemical or bacteriological characteristics below those given above, nor shall such disposal of sewage or waste be inimical to aquatic life or to the maintenance of aquatic life in said receiving waters. The pH range for said waters shall be 6.5 to 8.0 except when due to natural causes. Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class.*"

The State of New Hampshire adopted new criteria into their its water quality standard regulations in December 2016 and submitted them to EPA for review and approval. Although the new criteria have not yet been approved by EPA, the Draft Permit is being proposed with effluent limits derived to meet the new criteria in anticipation of a state certification to do so.

The NHDES' Year 2016 Integrated List of Waters (2016 Integrated List), the 303(d) list, includes this segment of the Ashuelot River (NHRIV802010301-38), which is assigned an Assessment Use Category 5-M, which is characterized as marginally impaired and requiring a TMDL. The only parameter for aquatic life that carries the 5-M classification is pH, which a low TMDL priority and the source of which is unknown. Insufficient information is available for the parameters of unionized and total ammonia, chloride, copper, dissolved oxygen (DO) saturation, DO, total phosphorus, and turbidity. A previous TMDL that was completed found that this segment is impaired for fish consumption due to mercury. There is also insufficient information to determine that the primary contact recreation use is being met due to chlorophyll-a and *Escherichia coli (E. Coli*), and that the secondary contact recreation use is being met due to *E.coli*. No other TMDL for this stretch of the Ashuelot River has been completed.

4.2 Ambient Data

A summary of the ambient data collected in the receiving water in the vicinity of the outfall that is referenced in this Fact Sheet can be found in Appendix A of this Fact Sheet.

4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQS under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water[5]. For most pollutants and criteria, the critical flow in rivers and streams is some measure of the low flow of that river or stream. New Hampshire water quality regulations require that the available effluent dilution be based on the 7 day, 10-year low flow (7Q10 flow) of the receiving water (314 CMR 4.03(3)(1)). The 7Q10 low flow is the mean low flow over 7 consecutive days, recurring every 10 years. In addition, the State has reserved 10 percent of the Assimilative Capacity of the receiving water for future uses pursuant to RSA 485-A:13,I(a) and Env-Ws 1705.01.

The 7Q10 flow for the Ashuelot River just upstream of the Keene WWTF outfall was calculated using the Dingman ratio proration method (Dingman Scenario III) with the following data:

- Q_{USG}: stream flow data for the available period of record from 4/1/1996 – 3/31/2019 at the upstream USGS Ashuelot River below Surry Mt Dam Gage (01158000)[6]

- Q_{DSG}: stream flow data for the available period of record from 4/1/1994 – 3/31/2019 at the downstream USGS Ashuelot River at West Swanzey Gage (01160350)

- Q_{D1}: estimation of watershed flow contributions to the river segment between the upstream USGS Ashuelot River below Surry Mt Dam Gage (01158000) and the Keene WWTF outfall (Dingman Area 1), excluding the Babbidge Reservoir basin, using the Dingman equation

- Q_{D2}: estimation of watershed flow contributions to the river segment between the upstream USGS Ashuelot River below Surry Mt Dam Gage (01158000) and the downstream USGS Ashuelot River at West Swanzey Gage (01160350) (Dingman Area 2), excluding the Babbidge Reservoir basin, using the Dingman equation

- $Q_{WWTF,actual}$: the actual average flow for the Keene WWTF for the past 5 years

- $Q_{WWTF,design}$: average daily design flow for the Keene WWTF

The City of Keene's water sources include two wells and the Babbidge reservoir, all within the

[5] EPA Permit Writer's Manual, Section 6.2.4

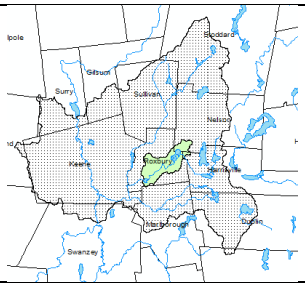
[6] EPA has deviated from its standard practice of using a 30 year flow record for this permit because the years of 1989 and 1995 did not have complete flow records.

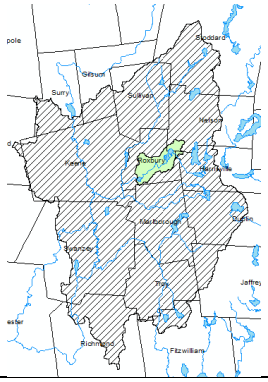
basin upstream of the Keene WWTF outfall. The water withdrawals from the two wells would be reflected in the stream flow upstream of the WWTF. However, the water withdrawals from the Babbidge Reservoir, while located within the basin, would not be reflected in the stream flow upstream of the WWTF because this is stored water that is independent of the hydrology within the basin. Therefore, this portion of the WWTF discharge would act as though it is from a source outside of the basin upstream of the discharger's location. Based on the water use data for the City of Keene from 2009-2016, the Babbidge Reservoir provides approximately 72% of the city's water, while the two wells provide approximately 28%.

The Dingman ratio proration method was used in order to determine the 7Q10 flow of the Ashuelot River at the Keene WWTF outfall. In addition, the downstream USGS Ashuelot River at West Swanzey Gage (01160350) 7Q10 flow was adjusted to remove the effects of the well water withdrawals and the addition of the flow from the Keene WWTF, as these are both accounted for in the separate calculations for the final 7Q10 value and the dilution factor. Not adjusting the downstream gage to remove the flow from the Keene WWTF would allow a portion of the flow added by the Babbidge Reservoir to be counted as upstream flow, which it is not. Once this upstream value was calculated, it also needed to be adjusted to remove the withdrawals from the wells, as they were not accounted for using the Dingman proration method with the adjusted value for the downstream gage.

Table 1 shows the calculation to determine the 7Q10 flow of the Ashuelot River just upstream of the Keene WWTF outfall.

Table 1 – 7Q10 Calculation for Keene WWTF

Stream Flow Component	Flow (cfs)	Comments
Q_{USG} 7Q10 flow at upstream Ashuelot River below Surry Mt Dam Gage (01158000)	2.65	Period of record: 4/1/1996 – 3/31/2019 Calculated using US EPA DFlow program (v3.1b)
$Q_{DSG,adj}$ Adjusted 7Q10 flow at downstream Ashuelot River at West Swanzey Gage (01160350)	23.3	Period of record: 4/1/1994 – 3/31/2019 Unadjusted Q_{DSG} calculated using US EPA DFlow program (v3.1b) 7Q10 flow at downstream Ashuelot River at West Swanzey Gage (01160350), adjusted to remove withdrawals from wells and contributions from the Keene WWTF, using the following equation: $Q_{DSG,adj} = Q_{DSG} + (0.28)(Q_{WWTF,actual}) - Q_{WWTF,actual}$ $= 26.3 + (0.28)(4.22) – 4.22$ where Q_{DSG} = unadjusted 7Q10 flow at downstream USGS gage 01160350 = 26.3 cfs $Q_{WWTF,actual}$ = the actual average flow for the Keene WWTF for the past 5 years = 4.22 cfs
Q_{D1} Estimated intervening area 7Q10 between upstream gage 01158000 and Keene WWTF outfall (Dingman Area 1)	10.6	Calculated using Dingman[1] equation; Babbidge reservoir basin was removed from this area 

Q_{D2} Estimated intervening area 7Q10 between upstream gage 01158000 and downstream gage 01160350 (Dingman Area 2)	18.8	Calculated using Dingman[1] equation; Babbidge reservoir basin was removed from this area 
7Q10 just upstream of the Keene WWTP Outfall, unadjusted	14.3	$7Q10,unadjusted=((Q_{DSG,adj} - Q_{USG})(Q_{D1}/ Q_{D2}))+Q_{USG}$
Final 7Q10 just upstream of the Keene WWTF Outfall	**11.7**	**$7Q10 = 7Q10,unadjusted – (0.28)(Q_{WWTF,design})$** where $Q_{WWTF,design}$ = the average daily design flow of the Keene WWTF = 9.28 cfs

1. Dingman, S.L., and S.C Lawlor, 1995. Estimating Low-Flow Quantiles from Drainage-Basin Characteristics in New Hampshire and Vermont, American Water Resources Association, Water Resources Bulletin, pp 243-256.

Dilution Factor

The dilution factor was calculated from a mass balance as follows:

$7Q10 Dilution Factor= (0.9)(Q_S+Q_{WWTF,design})/Q_{WWTF,design}$

where Q_S = 7Q10 flow of the Ashuelot River just upstream of the Keene WWTF outfall

= 11.7 cfs

$Q_{WWTF,design}$ = average daily design flow for the Keene WWTF = 6.0 mgd = 9.28 cfs

0.9 = factor to reserve 10% of the receiving water assimilative capacity

7Q10 Dilution factor= (0.9)(11.7+9.28)/9.28 = **2.0**

Therefore, the dilution factor for the Keene effluent was determined to be 2.0, which is slightly different than the figure of 2.08 that was used in the 2007 Permit and which will be used in this Draft Permit.

5 Proposed Effluent Limitations and Conditions

The proposed limitations and conditions, the bases of which are discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit. EPA determined the pollutants of concern based on EPA's technology based effluent requirements, pollutants believed present in the

permit application, and other information.

5.1 Effluent Limitations and Monitoring Requirements

In addition to the State and Federal regulations described in Section 2, data submitted by the permittee in their permit application as well as in monthly discharge monitoring reports (DMRs) and in WET test reports from 2014 through 2019 were used to identify the pollutants of concern and to evaluate the discharge during the effluent limitations development process (*See* Appendix A). A reasonable potential analysis is included in Appendix B and results are discussed in the sections below.

5.1.1 Wastewater Effluent Flow

The 2007 Permit required reporting of effluent flow with no limit. A review of DMR data in Appendix A, from October 2014 to October 2019 shows that the reported monthly flow was in the range of 1.67 to 5.19 MGD with a median of 2.65 MGD and a high daily flow of 9.11 MGD.

The 2007 Permit included only a monitoring requirement for flow. The Draft Permit has established a monthly average flow limit of 6.0 MGD expressed as a rolling annual average, which reflects the design flow of the facility. The basis for requiring an effluent flow limit is explained in Section 2.3 of this Fact Sheet. The Draft Permit requires that flow be measured continuously and that the rolling annual average flow, as well as the average monthly and maximum daily flow for each month be reported. The rolling annual average flow is calculated as the average of the flow for the reporting month and 11 previous months.

5.1.2 Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)

5.1.2.1 $CBOD_5$ Concentration Limits

The average monthly and average weekly $CBOD_5$ limits in the 2007 Permit were based on the secondary treatment standards in 40 C.F.R. § 133.102; the average monthly limit was 25 mg/L, the average weekly limit was 40 mg/L, and the daily maximum limit was 45 mg/l.

A review of DMR data submitted from October 2014 through October 2019 shows that there have been no permit violations of $CBOD_5$ concentration limits. Based on the DMR data (*See* Appendix A), the $CBOD_5$ median values were 1 mg/l, 1 mg/l, and 1.2 mg/l, respectively, for the monthly average, weekly average, and daily maximum values. The highest reading recorded during the period was 5 mg/l.

The Draft Permit proposes the same $CBOD_5$ concentration limits as in the 2007 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains twice per week.

5.1.2.2 $CBOD_5$ Mass Limits

The mass based $CBOD_5$ limits in the 2007 Permit were based on the $CBOD_5$ concentration limits and the design flow, which were calculated as follows:

$CBOD_5$ Mass Loading Calculations:

Calculations of maximum allowable loads for monthly average, weekly average, and daily maximum $CBOD_5$ are based on the following equation:

$$L = C_d * Q_d * 8.345$$

Where:

L = Maximum allowable load in lbs/day.
C_d = Maximum allowable effluent concentration for reporting period in mg/L (reporting periods are monthly average, weekly average, and daily maximum)
Q_d = Annual average design flow of Facility (6.0 MGD).
8.345 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day.

CBOD5 Monthly Average, Weekly Average, and Daily Maximum Limits

Monthly average = 25 mg/L x 6.0 MGD x 8.345 = **1,252 lb/day**
Weekly average = 40 mg/L x 6.0 MGD x 8.345 = **2,003 lb/day**
Daily maximum = 45 mg/L x 6.0 MGD x 8.345 = **2,253 lb/day**

A review of DMR data submitted from 2014 through 2019 shows that there have been no permit violations of $CBOD_5$ mass limits. Based on the DMR data (*See* Appendix A), the $CBOD_5$ median values were 23 lb/day, 29 lb/day, and 31 lb/day, respectively, for the monthly average, weekly average, and daily maximum values. The highest reading recorded during the period was 111 lb/day.

The CBOD mass limits will continue to be based on the concentration limits from 40 CFR § 133.102. The levels of $CBOD_5$ currently being discharged are consistently below the effluent limits and EPA expects that the Facility will continue to meet its $CBOD_5$ limits without any adjustments to its treatment process.

5.1.3 Total Suspended Solids (TSS)

5.1.3.1 TSS Concentration Limits

The monthly average and weekly average TSS concentration limits in the 2007 Permit were based on the secondary treatment standards in 40 C.F.R. § 133.102; the average monthly limit was 30 mg/L, the average weekly limit was 45 mg/L, and the daily maximum limit was 50 mg/l.

A review of DMR data submitted from 2014 through 2019 shows that there have been no permit violations of TSS concentration limits. Based on the DMR data (*See* Appendix A), the TSS concentration median values were 2 mg/l, 2 mg/l, and 3 mg/l, respectively, for the monthly average, weekly average, and daily maximum values. The highest reading recorded during the period was 29 mg/l.

The Draft Permit proposes the same TSS concentration limits as in the 2007 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains twice per week.

5.1.3.2 TSS Mass Limits

The mass based TSS limits in the 2007 Permit were based on the TSS concentration limits and the design flow, which were calculated as follows:

TSS Mass Loading Calculations:

Calculations of maximum allowable loads for monthly average, weekly average, and daily maximum TSS are based on the following equation:

$$L = C_d * Q_d * 8.345$$

Where:

L = Maximum allowable load in lbs/day.
C_d = Maximum allowable effluent concentration for reporting period in mg/L (reporting periods are monthly average, weekly average, and daily maximum)
Q_d = Annual average design flow of Facility (6.0 MGD).
8.345 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day.

TSS Monthly Average, Weekly Average, and Daily Maximum Limits

Monthly average = 30 mg/L x 6.0 MGD x 8.345 = **1,502 lb/day**
Weekly average = 45 mg/L x 6.0 MGD x 8.345 = **2,253 lb/day**
Daily maximum = 50 mg/L x 6.0 MGD x 8.345 = **2,504 lb/day**

A review of DMR data submitted from 2014 through 2019 shows that there have been no permit violations of TSS mass limits. Based on the DMR data (*See* Appendix A), the TSS median values were 36 lb/day, 53 lb/day, and 70 lb/day, respectively, for the monthly average, weekly average, and daily maximum values. The highest reading recorded during the period was 668 lb/day.

The TSS mass limits will continue to be based on the concentration limits from 40 CFR § 133.102. The levels of TSS currently being discharged are consistently below the effluent limits and EPA expects that the Facility will continue to meet its TSS limits without any adjustments to its treatment process.

5.1.4 Eighty-Five Percent (85%) $CBOD_5$ and TSS Removal Requirement

In accordance with the provisions of 40 C.F.R. § 133.102(a)(4)(iii) and (b)(3), the 2007 Permit required that the 30-day average percent removal for $CBOD_5$ and TSS be not less than 85%. A review of DMR data for the monitoring period shows equal median $CBOD_5$ and TSS removal percentages of 99.4% for the period. There were no violations of the 85% removal requirement

for $CBOD_5$ or TSS during that period.

The requirement to achieve 85% $CBOD_5$ and TSS removal has been carried forward into the Draft Permit.

5.1.5 pH

The hydrogen ion concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life. pH can also have an indirect effect on the toxicity of other pollutants in the water.

Consistent with the requirements of New Hampshire's WQS at RSA 485-A:8 II, "The pH for said (Class B) waters shall be 6.5 to 8.0 except when due to natural causes." The monitoring frequency is once per day. A review of DMR data submitted from 2014 through 2019 shows that there have been 3 violations of the minimum pH limit and 4 violations of the maximum pH limit with a range of 6.3 to 9.5 S.U.

The pH requirements in the 2007 Permit are carried forward into the Draft Permit as there has been no change in the WQS with regards to pH.

5.1.6 Bacteria

The 2007 Permit includes effluent limits for bacteria using *Escherichia coli* (*E. coli*) bacteria as the indicator bacteria to protect recreational uses. NH WQS at Env-Wq 1700, Appendix E require a monthly geometric mean of 126 E.coli/100 ml and a maximum daily limit of 406 E.coli/100 ml. A review of DMR data during the monitoring period shows that the Permittee has been in compliance with the average monthly and maximum daily fecal coliform limits of the 2007 Permit (126 E.coli/100 mL and 406 E.coli/100 mL, respectively), with the exception of 2 daily maximum readings of 687 and 1203 E.coli/100 ml. The monthly geometric mean *E. coli* bacteria count ranged from 1 to 11 E.coli/100 ml.

The Draft Permit proposes maintaining the same effluent limits for bacteria as the NH WQS have not changed. The *E. coli* limits are a monthly geometric mean of 126 E.coli/100 ml and a maximum daily limit of 406 E.coli/100 ml. The sampling frequency for *E. coli* is three times per week, as in the 2007 Permit.

5.1.7 Dissolved Oxygen

The NH WQS at Env-Wq 1703.07 establish minimum DO levels for Class B waters, the class assigned to the receiving water for this discharge. The State's Class B waters shall have an instantaneous minimum DO concentration of at least 5.0 mg/L. The minimum DO limit for the Keene treatment plant was established at 7.0 mg/L in the 2007 Permit. This DO limit was established by the NHDES in the late 1980's through an effort which sampled the River and modeled the effects of Keene's effluent discharge on the River's water quality. The 7.0 mg/L

minimum DO limit was established to ensure that the facility's effluent is treated to a sufficient level so any biochemical activity in the effluent does not result in violations of the minimum criterion of 5.0 mg/l.

Review of the monitoring data in the DMRs, provided in Appendix A, shows average DO of 8.4 mg/L, ranging from 7.1 to 9.3 mg/L.

The Draft Permit proposes a dissolved oxygen limit of 7.0 mg/L to be consistent with the 2007 Permit, State WQS, and anti-backsliding regulations.

5.1.8 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 2007 Permit includes warm weather (June 1 through October 31) seasonal ammonia limits that were established to address the need to reduce the oxygen demanding component of the nitrogen cycle and also reflect a need to reduce ammonia toxicity. The 2007 Permit included a monthly average limit of 2.1 mg/L and a daily maximum limit of 3.1 mg/L for ammonia-nitrogen during this warm weather period. In addition, the 2007 Permit established corresponding mass limits of 105 lbs/day as a monthly average and 155 lbs/day as a daily maximum. These limits were based on the NHDES WQS ammonia criterion of 1.23 mg/l, assuming a pH of 6.5 S.U. and a temperature of 25°C; and a dilution factor of 1.7, based on the Permit issued prior to 2007. At the time of 2007 Permit reissuance, the ammonia criteria had changed, and the calculated ammonia limits could have been revised higher. However, since this stretch of the Ashuelot River was impaired for low DO and could not assimilate additional loadings of oxygen depleting parameters, such as ammonia, it was determined that the 2007 Permit was to maintain the prior permit's more stringent ammonia limits.

The 2007 Permit also includes monthly average cold weather (November 1 through May 31) ammonia-nitrogen effluent limits of 12 mg/L and 600 lb/day to prevent ammonia toxicity in the Ashuelot River. There is no weekly average or daily maximum winter effluent limit in the 2007 Permit.

Review of the DMR data during the monitoring period of October 2015 through October 2019, provided in Appendix A, shows one violation of the warm weather 3.1 mg/L daily maximum limit, one violation of the warm weather 155 lb/day daily maximum limit and no violations of the cold weather limits.

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.

In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for ammonia, EPA used the mass balance

equation presented in Appendix B 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 is also used to determine the limit that is required in the permit.

EPA notes that since the 2007 Permit already contained limits for ammonia, a reasonable potential determination for those limits is not applicable, so the table in Appendix B indicates "N/A" for reasonable potential. 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. However, if the mass balance indicates that a less stringent effluent concentration (C_d) would meet WQS under current conditions, a case-by-case analysis must be done to determine if backsliding is allowable based on the exceptions found at 40 CFR § 122.44(l)(2)(i).

To determine the applicable ammonia criteria, EPA assumes a warm weather temperature of 25° C and a cold weather temperature of 5° C. EPA used the ambient pH monitoring shown in Appendix A, which indicates that the median pH is 6.5 S.U. Additionally, the Ashuelot River in is within Essential Fish Habitat (EFH) for Atlantic salmon (*Salmo salar*), so EPA has assumed that salmonids could be present in the receiving waters.

Based on the information and assumptions described above, Appendix B presents the applicable ammonia criteria, the details of the mass balance equation, the reasonable potential determination, and, if necessary, the limits required in the Draft Permit. As shown, a more stringent chronic limit of 9.9 mg/l is warranted for the winter period, which corresponds to a mass limit of 496 lb/day (i.e., 9.9 mg/L * 6.0 MGD * 8.345). The summer limits of 2.1 mg/l and 3.1 mg/l will be carried forward in the Draft Permit as they continue to meet WQS and are consistent with anti-backsliding regulations at 40 CFR § 122.44(l). Effluent and ambient monitoring for ammonia will continue to be required in the WET tests.

5.1.9 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 reduce 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. For this Permit, phosphorus is the nutrient of concern in the Ashuelot River and nitrogen is also a concern as the Ashuelot River is tributary to Long Island Sound. Therefore, both phosphorus and nitrogen are evaluated below.

5.1.9.1 Total Nitrogen

The Keene WWTP discharges to the Ashuelot River, which drains to Long Island Sound via the Connecticut River. In December 2000, the Connecticut Department of Energy and

Environmental Protection ("CT DEEP") and New York State Department of Environmental Conservation ("NYSDEC") completed a Total Maximum Daily Load ("TMDL") for addressing nitrogen-driven eutrophication impacts in Long Island Sound. The TMDL included a Waste Load Allocation ("WLA") for point sources and a Load Allocation ("LA") for non-point sources. The point source WLA for out-of-basin sources (Massachusetts, New Hampshire, and Vermont point sources discharging to the Connecticut, Housatonic, and Thames River watersheds) requires an aggregate 25% reduction from the baseline total nitrogen loading estimated in the TMDL.

The 1998 baseline out-of-basin total nitrogen point source loadings estimated for the Connecticut, Housatonic, and Thames River watersheds were 21,672 lb/day, 3,286 lb/day, and 1,253 lb/day, respectively (*see* Table 2: Estimated Point Source Nitrogen Loadings to the Connecticut, Housatonic, and Thames Rivers Watersheds below). The estimated point source total nitrogen loadings for the Connecticut, Housatonic, and Thames Rivers for 2013-2018 are summarized in Appendix C.

Table 2: Estimated Out-of-Basin Point Source Nitrogen Loadings to the Connecticut, Housatonic, and Thames Rivers Watersheds

Basin	**1998 Baseline Loading[7] lb/day**	**TMDL WLA[8] lb/day**	**Maximum Loading, 2014-2018, lb/day[9]**
Connecticut River	21,672	16,254	12,120[10]
Housatonic River	3,286	2,464	1,707[11]
Thames River	1,253	939	677[12]
Totals	26,211	19,657	14,504

As can be seen in Table 2, the TMDL target of a 25% aggregate reduction from the 1998 baseline loadings is currently being met, and the overall loading from MA, NH and VT wastewater treatment plants discharging to the Connecticut River watershed is about 11% below the TMDL wasteload allocation. Overall the loadings from MA, NH, and VT are about 15% below the TMDL wasteload allocation. The 2007 Permit did not require nitrogen monitoring.

While substantial TN out-of-basin load reductions have occurred at some facilities by means of

[7] Estimated loading from TMDL, (see Appendix 3 to CT DEP "Report on Nitrogen Loads to Long Island Sound", April 1998)
[8] Reduction of 25% from baseline loading
[9] Estimated loading from 2013-2018 Discharge Monitoring Report data
[10] Highest load from the Connecticut River occurred in 2014
[11] Highest load from the Housatonic River occurred in 2018
[12] Highest load from the Thames River occurred in 2014

optimization requirements alone, concerns raised in recent public comments by the downstream state (Connecticut) and concerned citizens[13] have highlighted the need for clearly enforceable, numeric, loading-based effluent limits to ensure that the annual aggregate nitrogen loading from out-of-basin point sources are consistent with the TMDL WLA of 19,657 lb/day and to ensure that current reductions in loading do not increase, given the continued impairment status of LIS.

After further review of the federal and state requirements, EPA agrees with the concerns raised by the downstream state and the public. As discussed in Section 2 of this Fact Sheet, statutory and regulatory requirements regarding the development of water quality-based effluent limits include provisions to ensure implementation of any available WLAs[14], provisions to prevent further degradation of receiving waters that are already impaired[15] and consideration of applicable water quality requirements of downstream states[16].

The optimization requirements included, in many out-of-basin permits issued in the LIS watershed since 2007, have resulted in nitrogen reductions by means of utilizing the available equipment to minimize discharges of nitrogen. However, these requirements by themselves are not enforceable effluent limits that would prevent further increases in nitrogen due to population growth or new industrial dischargers. Enforceable effluent limits will ensure that as communities experience new residential, commercial and industrial growth, the nitrogen load from their POTWs do not cause or contribute to further degradation of LIS.

Therefore, EPA intends to include total nitrogen rolling annual average mass-based loading limits (in lb/day) and requirements to optimize current treatment systems to minimize the effluent nitrogen in all permits issued to wastewater treatment plants with design flow greater than or equal to 1.5 MGD that discharge to the LIS watershed in New Hampshire.

Table 3 summarizes the approach to update TN requirements for this and future permits in the LIS watershed in New Hampshire. EPA is also working with the States of Massachusetts and Vermont to ensure that comparable requirements are included in NPDES permits issued in those states and this is the first NH permit which will adopt this approach.

[13] Connecticut Department of Energy and Environmental Protection letters to EPA dated February 7, 2018 and April 27, 2018; Connecticut Fund for the Environment letter to EPA dated February 7, 2018; and Connecticut River Conservancy letter to EPA dated February 18, 2018.

[14] *See* 40 C.F.R. §122.44(d)(1)(vii)(B)

[15] *See* 40 C.F.R. § 122.44(d)(1)(vii)(B), 40 C.F.R. § 131.12(a)(1), and 314 CMR 4.04(1)

[16] *See* 40 C.F.R § 122.44(d)(4) and CWA section 401(a)(2)

Table 3 - Annual Average Total Nitrogen Limits for New Hampshire WWTP Dischargers to the Long Island Sound Watershed

Facility Design Flow, Q_D (MGD)	Number of Facilities	Annual Average TN Limit (lb/day)
$Q_D > 6$	0	Q_D (MGD) * 8 mg/L * 8.34 + optimize
$1.5 \leq Q_D \leq 6$	5	Q_D (MGD) * 10 mg/L * 8.34 + optimize
$0.1 \leq Q_D < 1.5$	14	Optimize
$Q_D < 0.1$	6	TN monitoring only

The optimization condition in the Draft Permit requires the permittee to evaluate alternative methods of operating their treatment plant to optimize the removal of nitrogen, and to describe previous and ongoing optimization efforts. Facilities not currently engaged in optimization efforts will also be required to implement optimization measures, so that the aggregate 25% reduction is maintained or increased.

Specifically, the Draft Permit requires an evaluation of alternative methods of operating the existing wastewater treatment facility to control total nitrogen levels, including, but not limited to, operational changes designed to enhance nitrification (seasonal and year-round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. This evaluation is required to be completed and submitted to EPA and NHDES within one year of the effective date of the permit, along with a description of past and ongoing optimization efforts. The permit also requires implementation of optimization methods to ensure that the facility is operated in such a way that discharges of total nitrogen are minimized. The permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies and track trends relative to previous years.

In addition to the rolling annual average total nitrogen effluent limit and optimization requirements, the Draft Permit includes weekly monitoring and average monthly reporting requirements for total nitrogen (TN), total Kjeldahl nitrogen (TKN), and total nitrite/nitrate nitrogen (NO_2/NO_3).

Since the design flow for the facility is in the range of between 1.5 to 6 MGD, the annual loading TN limit calculated for the Draft Permit and following the approach outlined above is:

6 MGD * 10 mg/L * 8.345 = **501 lb/day**

The effluent limit is a rolling annual average based on the average of the current monthly average and the monthly average of the previous 11 months.

Future Nitrogen Limits

The new nitrogen annual loading limit in this Draft Permit is intended to meet the requirements of the 2001 LIS TMDL which was developed to address hypoxic conditions in the bottom waters of LIS[17]. In December 2015, EPA signed a letter detailing a post-TMDL EPA nitrogen reduction strategy for waters in the LIS watershed. The strategy recognizes that more work may need to be done to reduce nitrogen levels, further improve DO conditions, and attain other related water quality standards in LIS, particularly in coastal embayments and the estuarine portions of rivers that flow into the Sound. EPA is working to establish nitrogen thresholds for Western LIS and several coastal embayments, including for the mouth of the Connecticut River. Documents regarding the EPA Nitrogen Reduction Strategy are available for public review on EPA's Long Island Sound website (http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/). Upon completion of establishing thresholds, allocations of total nitrogen loadings may be lowered if further reductions are necessary. If reductions are needed for the Keene discharge, a lower water quality-based effluent limit will be added in a future permit action. If so, EPA anticipates exploring possible trading approaches for nitrogen loading in the New Hampshire portion of the Connecticut River watershed.

Although not a permit requirement, it is recommended that any facilities planning that might be conducted for this facility consider alternatives for further enhancing nitrogen reduction beyond the requirements in this permit.

5.1.9.2 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; 2) causing an unpleasant appearance and odor; 3) interfering with navigation and recreation; 4) reducing water clarity; 5) reducing the quality and availability of suitable habitat for aquatic life; 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.

The 2007 Permit includes a monthly average effluent limit of 0.2 mg/L effective in the warm months (April 1 to October 31) and a monthly average effluent limit of 1.0 mg/L effective in the cold months (November 1 to March 31). Review of the weekly monitoring data in the DMRs for the monitoring period shows that in the warm months the monthly average total phosphorus in

[17] For more information see http://longislandsoundstudy.net/about/our-mission/management-plan/hypoxia/

the effluent averaged 0.058 mg/L (ranging from 0 to 0.7 mg/L) and in the cold months, the monthly average total phosphorus averaged 0.1 mg/L (ranging from 0 to 0.6 mg/L).

To ensure that EPA's understanding of the anticipated behavior of dissolved and particulate phosphorus is correct, a monitoring requirement for ortho-phosphorus was included for the cold weather months (November 1st - March 31st) in the 2007 Permit. Ortho-phosphorus is a measure of the dissolved particulate fraction of phosphorus. Most of these samples resulted in non-detect readings, with only four detected values, including a high value of 0.2 mg/l.

The New Hampshire Surface Water Quality Regulations contain a narrative criterion, which 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."

In the absence of numeric criteria for phosphorus, EPA uses nationally recommended criteria and other technical guidance to develop effluent limitations for the discharge of phosphorus. EPA has published national guidance documents that contain recommended total phosphorus criteria and other indicators of eutrophication. EPA's 1986 *Quality Criteria for Water* (the "Gold Book") recommends that in-stream phosphorus concentrations not exceed 0.05 mg/L in any stream entering a lake or reservoir. 0.1 mg/L for any stream not discharging directly to lakes or impoundments, and 0.025 mg/L within a lake or reservoir. For this segment of the Ashuelot River, the 0.1 mg/L would apply downstream of the discharge.

More recently, EPA has released recommended Ecoregional Nutrient Criteria, established as part of an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country. The published criteria represent conditions in waters within ecoregions that are minimally impacted by human activities, and thus free from the effects of cultural eutrophication. The Keene WWTP is located within Ecoregion VIII, Nutrient-Poor, Largely Glaciated Upper Midwest and Northeast. The recommended total phosphorus criterion for this ecoregion, found in Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion VIII (EPA, December 2001, EPA 822-B-01-015) is 10 µg/L (0.010 mg/L).

EPA uses the effects-based Gold Book threshold as a general target applicable in free-flowing streams. As the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophication 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. In this case, EPA is not aware of any evidence that this segment of the Ashuelot River is unusually susceptible to eutrophication impacts, so that the 100 µg/L threshold appears sufficient in this receiving water.

EPA is not aware of evidence of factors that are reducing eutrophic response in the Ashuelot River downstream of the discharge.

Elevated concentration of chlorophyll a, excessive algal and macrophyte growth, and low levels of dissolved oxygen are all effects of nutrient enrichment. The relationship between these factors and high in-stream total phosphorus concentrations is well documented in scientific literature, including guidance developed by EPA to address nutrient over-enrichment (Nutrient Criteria Technical Guidance Manual – Rivers and Streams, EPA July 2000 [EPA-822-B-00-002]).

The Volunteer River Assessment Program in New Hampshire has been taking instream samples of the Ashuelot River[18]. The sampling results from one of these stations, which is located 40 feet upstream of the Keene WWTP discharge, are shown below:

Table 4 – Instream Total Phosphorus Data

Year	2015	2016	2017	2018
Total Phosphorus, µg/L	18, 19, 27	15, 14, 21	12, 13	26, 19, 22, 19, 23

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

Since phosphorus has an existing limit in the 2007 Permit, a reasonable potential determination is not applicable. In this case, EPA uses the mass balance equation presented in Appendix B to project the concentration downstream of the discharge. 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. However, if the mass balance indicates that a less stringent effluent concentration (C_d) would meet WQS under current conditions, a case-by-case analysis must be done to determine if backsliding is allowable based on the exceptions found at 40 CFR § 122.44(l)(2)(i).

The results of this analysis for phosphorus are presented in Appendix B. The Draft Permit requires that a more stringent effluent limit of 0.18 mg/L for phosphorus be established to meet WQS. This analysis used the latest instream phosphorus data noted above and the updated 7Q10 flow described earlier in this Fact Sheet.

The winter limit of 1 mg/L total phosphorus during the period of November 1st through March 31st will also be maintained. The winter limitation was established to ensure that the higher levels of phosphorus discharged in the winter do not result in an accumulation of phosphorus in downstream sediments. The limitation assumes that the vast majority of the phosphorus

[18] https://www.des.nh.gov/organization/divisions/water/wmb/vrap/ashuelot/index.htm

discharged will be in the dissolved fraction and that dissolved phosphorus will pass through the system during the winter period. However, since the ortho-phosphorus monitoring has shown mostly non-detect readings, this indicates that the majority of phosphorus discharged will be in the particulate form. Therefore, the ortho-phosphorus monitoring has been eliminated from the Draft Permit while the winter limit of 1.0 mg/L will be maintained.

Finally, ambient monitoring for total phosphorus has been included in the Draft Permit to provide EPA with sufficient data to determine if the phosphorus limits in the permit continue to be protective in the future.

5.1.10 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 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, cadmium, copper, lead, nickel and zinc and/or to evaluate whether any existing limits in the 2007 Permit for these metals continue to be protective, given the updated upstream hydrologic and chemical characteristics of the receiving water. The 2007 Permit included monthly average and daily maximum effluent limits for copper and zinc as well as a monthly average limit for lead. A summary of recent metals monitoring results is provided in Appendix A.

5.1.10.1 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 C.F.R. § 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 NH Env Wq-1703. The estimated hardness of the Ashuelot River downstream of the treatment plant is calculated using the critical low flow (7Q10), 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. Effluent and receiving water data are presented in Appendix A. Using the mass balance equation discussed in Appendix B, the resulting downstream hardness is 36.7 mg/L and the corresponding criteria are also presented in Appendix B.

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.

5.1.10.2 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 B 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 2007 Permit, a reasonable potential determination is not applicable, so the table indicates "N/A" for reasonable potential. 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. However, if the mass balance indicates that a less stringent effluent concentration (C_d) would meet WQS under current conditions, a case-by-case analysis must be done to determine if backsliding is allowable based on the exceptions found at 40 CFR § 122.44(l)(2)(i).

The results of this analysis for each metal are presented in Appendix B. The Draft Permit must continue to limit copper, lead, and zinc, while requiring the establishment of a new chronic aluminum limit.

The chronic and acute copper limits of 5.9 µg/L and 7.9 µg/L, respectively, are still protective and are carried forward in the Draft Permit.

The chronic and acute zinc limits of 77 µg/L and 77 µg/L, respectively, are still protective and are carried forward in the Draft Permit.

The chronic lead limit of 1.1 µg/L is still protective and is carried forward in the Draft Permit.

The Draft Permit establishes a chronic (monthly average) aluminum limit of 108 µg/L to meet WQS based on the reasonable potential analysis shown in Appendix B.

<u>Aluminum Compliance Schedule</u>

The Draft Permit includes a 3-year compliance schedule to meet the new aluminum limit of 108 µg/L in anticipation of an expected revision to the New Hampshire freshwater aluminum criteria. EPA finalized new aluminum criteria recommendations in December 2018 which are dependent on pH, dissolved organic carbon and hardness and which may be higher than New Hampshire's current criteria. Although New Hampshire is considering adopting EPA's 2018 aluminum criteria recommendations as state water quality criteria, it has not yet done so. EPA has therefore determined that it is appropriate to include a schedule of compliance, pursuant to 40 C.F.R. §122.47, in the Draft Permit which provides the Permittee with a 3-year period to achieve compliance with the final aluminum effluent limit. Additionally, the Permittee may apply for a

permit modification to allow additional time for compliance if New Hampshire has adopted new aluminum criteria but has not yet submitted the criteria to EPA for review or EPA has not yet acted on the new criteria. If new aluminum criteria are adopted by New Hampshire and approved by EPA, and before the final aluminum effluent limit goes into effect, the Permittee may apply for a permit modification to amend the permit based on the new criteria. If warranted by the new criteria and a reasonable potential analysis, EPA may relax or remove the effluent limit to the extent consistent with anti-degradation requirements. Such relaxation or removal would not trigger anti-backsliding requirements as those requirements do not apply to effluent limits which have yet to take effect pursuant to a schedule of compliance. *See American Iron and Steel Institute v. EPA,* 115 F.3d 979, 993 n.6 (D.C. Cir. 1997) ("EPA interprets §402 to allow later relaxation of [an effluent limit] so long as the limit has yet to become effective."]

5.1.11 Whole Effluent Toxicity

CWA §§ 402(a)(2) and 308(a) provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Whole effluent toxicity (WET) testing is conducted to ensure that the additivity, antagonism, synergism and persistence of the pollutants in the discharge do not cause toxicity, even when the pollutants are present at low concentrations in the effluent. The inclusion of WET requirements in the Draft Permit will assure that the Facility does not discharge combinations of pollutants into the receiving water in amounts that would be toxic to aquatic life or human health.

In addition, under § 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on WQSs. Under certain narrative State WQSs, and §§ 301, 303 and 402 of the CWA, EPA and the States may establish toxicity-based limitations to implement the narrative "no toxics in toxic amounts". 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 1730.21(a)(1)).

National studies conducted by the EPA have demonstrated that domestic sources, as well as industrial sources, contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Some of these constituents may cause synergistic effects, even if they are present in low concentrations. Because of the source variability and contribution of toxic constituents in domestic and industrial sources, EPA assumes that there is a reasonable potential for this discharge to cause or contribute to an exceedance of the "no toxics in toxic amounts" narrative water quality standard.

In accordance with current EPA guidance, whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the $LC_{50.}$ This policy recommends that permits for discharges having a dilution factor less than 10 require acute and chronic toxicity testing four times per year for two species. Additionally, for discharges with

dilution factors less than 10, the C-NOEC effluent limit should be greater than or equal to the receiving water concentration and the LC_{50} limit should be greater than or equal to 100%.

The chronic and acute WET limits in the 2007 Permit are C-NOEC greater than or equal to 48% and LC_{50} greater than or equal to 100%, respectively, using the daphnid, *Ceriodaphnia dubia (C. dubia)*, and the fathead minnow (*pimephales promelas)*, as the test species. The Facility has consistently met these limits, as shown in Appendix A, with all results being 100% or ≥ 100%.

The chronic no observed effect concentration (C-NOEC) limit must is calculated using the instream waste concentration (IWC) of the effluent. The IWC is the inverse of the dilution factor (DF) and is calculated as follows:

IWC = 1/2.0 = 0.05, or a C-NOEC limit of ≥ **50%**

Since this limit is more stringent than the ≥ 48% limit that was established in the 2007 Permit that was based on the prior dilution factor of 2.08, the ≥ 50% limit has been established in this Draft Permit.

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 2.0, and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d), the Draft Permit continues the WET limits from the 2007 Permit including the test organisms and frequency of once per year. Toxicity testing must be performed in accordance with the updated EPA Region 1 test WET test procedures and protocols specified in Attachments A and B of the Draft Permit (USEPA Region 1 Freshwater Acute Toxicity Test Procedure and Protocol, February 2011 and USEPA Region 1 Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013).

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 in order to assess potential impacts of aluminum in the receiving water.

5.2 Industrial Pretreatment Program

The permittee is required to administer a pretreatment program based on the authority granted under 40 C.F.R. 122.44(j), 40 C.F.R. § 403 and Section 307 of the Act. The permittee's pretreatment program received EPA approval on November 6, 1984 and appropriate pretreatment program requirements were incorporated into the 2007 Permit, which were consistent with that approval and federal pretreatment regulations in effect when the 2007 Permit was issued.

The Federal Pretreatment Regulations in 40 C.F.R. § 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. Those 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 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 pretreatment program deemed necessary to assure conformity with current federal pretreatment regulations. These requirements are included in the Draft 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 November 1st, a pretreatment report detailing the activities of the program for the twelve-month period ending 60 days prior to the due date.

5.3 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.

Presently, sludge is hauled offsite by a commercial firm, Waste Management of New Hampshire, at its municipal solid waste landfill located in Rochester, NH. The Keene WWTP generated 770 dry metric tons of sludge in 2017 that was sent to this landfill. Sampling of sewage sludge shall use the procedures detailed in 40 C.F.R. § 503.8.

5.4 Infiltration/Inflow (I/I)

Infiltration is groundwater that enters the collection system though 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.

Part I.C. of the Draft Permit includes a requirement for the Permittee and each co-Permittee to control infiltration and inflow (I/I) within the sewer collections system that it owns and operates. Each co-Permittee 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.

5.5 Operation and Maintenance of the Sewer System

The standard permit conditions for 'Proper Operation and Maintenance', found at 40 C.F.R. § 122.41(e), require the proper operation and maintenance of permitted wastewater systems and related facilities to achieve permit conditions. The requirements at 40 C.F.R. § 122.41(d) impose a 'duty to mitigate' upon the co-Permittees, 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 C.F.R. § 122.41(d) and (e).

General requirements for proper operation and maintenance, and mitigation have been included in Part II of the permit. Specific permit conditions have also been included in Parts I.B, I.C, and I.D of the Draft 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 Keene WWTP 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.

Several of the requirements in the Draft Permit are not included in the 2007 Permit, including collection system mapping, and preparation of a collection system operation and maintenance plan. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules in the Draft Permit for completing these requirements.

Because the municipalities of Marlborough and Swanzey each own and operate collection systems that discharge to the Keene WWTP, these municipalities have been included as co-Permittees for the specific permit requirements discussed in the paragraph above. The historical background and legal framework underlying this co-permittee approach is set forth in Appendix D to this Fact Sheet, EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works that Include Municipal Satellite Sewage Collection Systems.

5.6 Standard Conditions

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

6 Federal Permitting Requirements

6.1 Endangered Species Act

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

Section 7(a)(2) of the ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, 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 § 7 consultations for freshwater species. The National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Facility. The Draft Permit is intended to replace the 2007 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species, and initiates consultation, when required under Section 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action area of the outfall to determine if EPA's proposed NPDES permit could potentially impact any such listed species. There are no known federally listed threatened or endangered species or their critical habitat under the jurisdiction of NOAA Fisheries within the vicinity of the Keene WWTP discharge.[19] Therefore, ESA consultation with NOAA Fisheries will not be required for this discharge.

For protected species under the jurisdiction of the USFWS, two listed threatened species, the northern long-eared bat (*Myotis septentrionalis*) and the dwarf wedge mussel (*Alasmidonta heterodon*) were identified as potentially occurring in the action area of the Keene WWTP.[20]

According to the USFWS, the threatened northern long-eared bat is found in "winter – mines and caves, summer – wide variety of forested habitats. This species is not aquatic, so the Facility discharge will have no direct effect on this mammal. Further, the permit action is also expected to have no indirect effect on the species because it is not expected to impact insects, the primary prey of the northern long-eared bat. Therefore, the proposed permit action is deemed

[19] See §7 resources for NOAA Fisheries at https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper.

[20] See §7 resources for USFWS at https://ecos.fws.gov/ipac/.

to have no impact on this listed species.

Regarding the dwarf wedgemussel, EPA performed a preliminary species review. As part of the 2007 Permit reissuance, EPA obtained the following information from the USFWS related to the dwarf wedgemussel. This mussel is expected to inhabit multiple locations in the Ashuelot River. Freshwater mussel communities, including the dwarf wedge mussel, have been sighted immediately downstream of the Keene WWTP effluent discharge. An August 2003 report titled, *Freshwater Mussels of the Ashuelot River* (2003 Report), noted that,

> "Results do not indicate that the wastewater treatment plant is affecting the mussel community...All species found at Site 9 [area extending 200 yards from outfall] were present on the right side of the river less than 20 yards downstream of the outfall, meaning that these animals were living almost entirely within the effluent plume. Animals appeared healthy and there was no evidence of mortality. Site 10 is located 700 yards downstream from the outfall and it supported the highest richness and abundance of all surveys." (p. 8).

The dwarf wedgemussel community is still present in the vicinity of the discharge. EPA is not aware of any recent studies that have been conducted by USFWS in this vicinity of the Ashuelot River, but a dam has been removed downstream. Streambank erosion, which is a concern for this species, is not considered to be a potential effect of the Facility's discharge. The effluent is split into 2 separate pipes that discharge to the Ashuelot and these pipes are often submerged. This design is believed to minimize any potential for erosion to occur along the streambank in the vicinity of the discharge points.

EPA has initiated pre-consultation with USFWS to determine the level of consultation needed for this federal action.

6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (*see* 16 U.S.C. § 1801 et seq., 1998), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat". *See* 16 U.S.C. § 1855(b).

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). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH, 50 C.F.R. § 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.

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 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.

The Connecticut River and its tributaries, including the Ashuelot River, are designated EFH for Atlantic salmon (*Salmo salar*). According to New Hampshire Fish and Game Department (NHFGD), the former stocking of Atlantic salmon fry that was conducted in tributaries upstream from the Keene WWTP was discontinued during the permit term. Although the presence of this species may be in question since the termination of the stocking program, EPA has taken the conservative approach and decided that one or more lifestages of Atlantic salmon may be present within the area which encompasses the discharge site. EPA has concluded that the limits and conditions contained in the Draft Permit minimize adverse effects to Atlantic Salmon EFH for the following reasons:

EPA's Finding of all Potential Impacts to EFH Species

- This Draft Permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- The facility withdraws no water from the Ashuelot River, so no life stages of EFH species are vulnerable to impingement or entrainment;
- Acute toxicity tests will be conducted once a year to ensure that the discharge does not present toxicity problems;
- Total suspended solids, biochemical oxygen demand, fecal coliform, pH, dissolved oxygen, total recoverable lead, total recoverable copper, total recoverable aluminum, total recoverable zinc, ammonia nitrogen, total nitrogen and total phosphorus are regulated by the Draft Permit to meet water quality standards;
- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life; and
- The Draft Permit prohibits violations of the state water quality standards.

EPA believes that the conditions and limitations contained within the Keene WWTP Draft Permit adequately protects all aquatic life, including EFH designated for Atlantic salmon in the receiving water. Further mitigation is not warranted. Should adverse impacts to EFH 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 Division will be contacted and an EFH consultation will be re-initiated.

At the beginning of the public comment period, EPA notified NOAA Fisheries Habitat Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

In addition to this Fact Sheet and the Draft Permit, information to support EPA's finding was included in a letter under separate cover that will be sent to the NOAA Fisheries Habitat Division during the public comment period.

7 Public Comments, Hearing Requests and Permit Appeals

All persons, including applicants, who believe any condition of the Draft 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:

George Papadopoulos
EPA New England, Region 1
5 Post Office Square, Suite-100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1539, FAX: (617)918-0539
Email: papadopoulos.george@epa.gov

Prior to the close of the public comment period, any person may submit a written request to EPA and the State Agency for a public hearing to consider the Draft 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 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public at EPA's Boston office and 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 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. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 C.F.R. § 124.19.

8 Administrative Record

The administrative record on which this Draft Permit is based may be accessed, by appointment, at EPA's Boston office between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from George Papadopoulos, EPA Region1, 5 Post Office Square, Suite-100 (06-1), Boston, MA 02109-3912 or via email to papadopoulos.george@epa.gov.

May 2020
Date

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

Figure 1: Location of the Keene WWTP

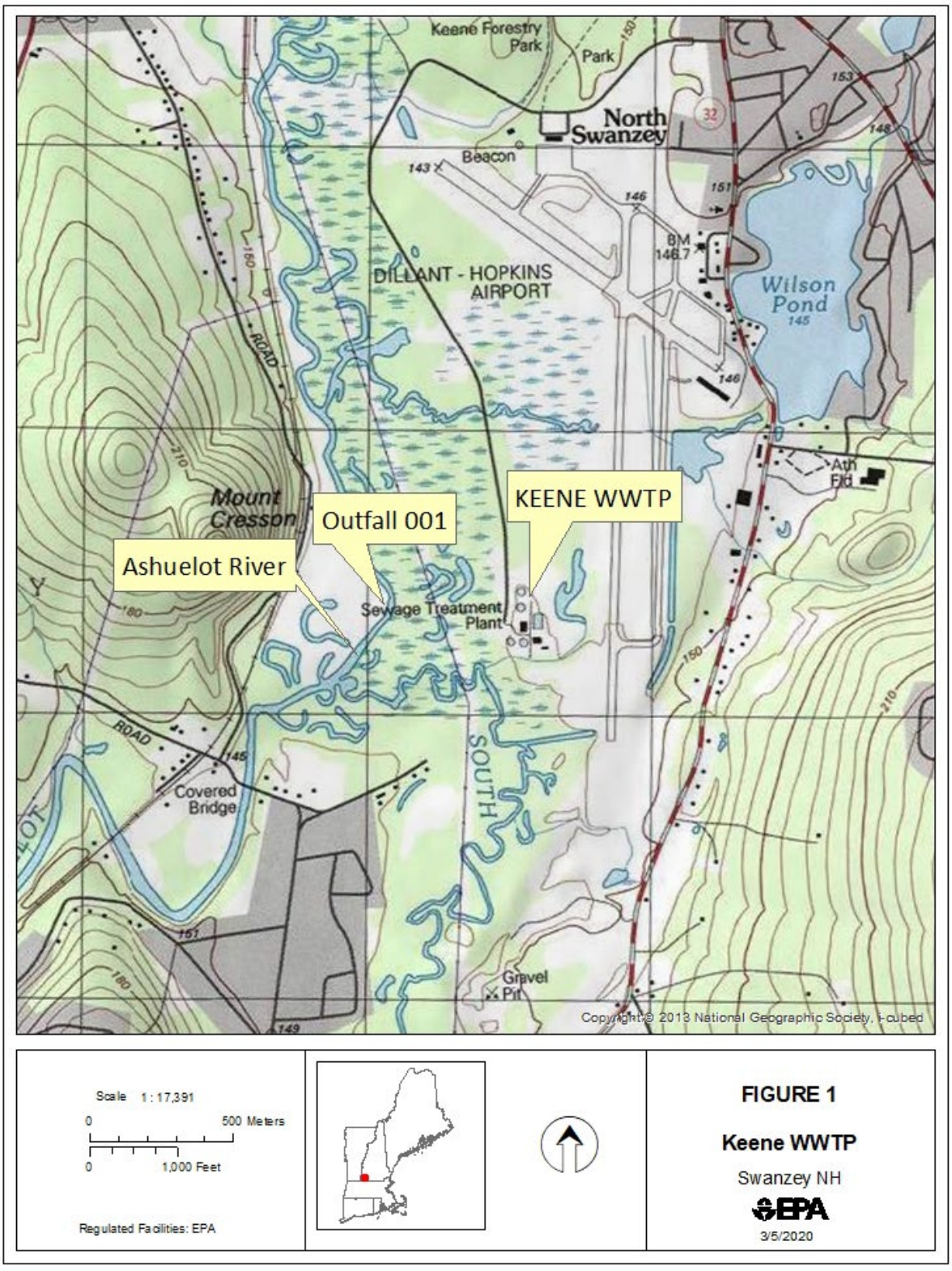
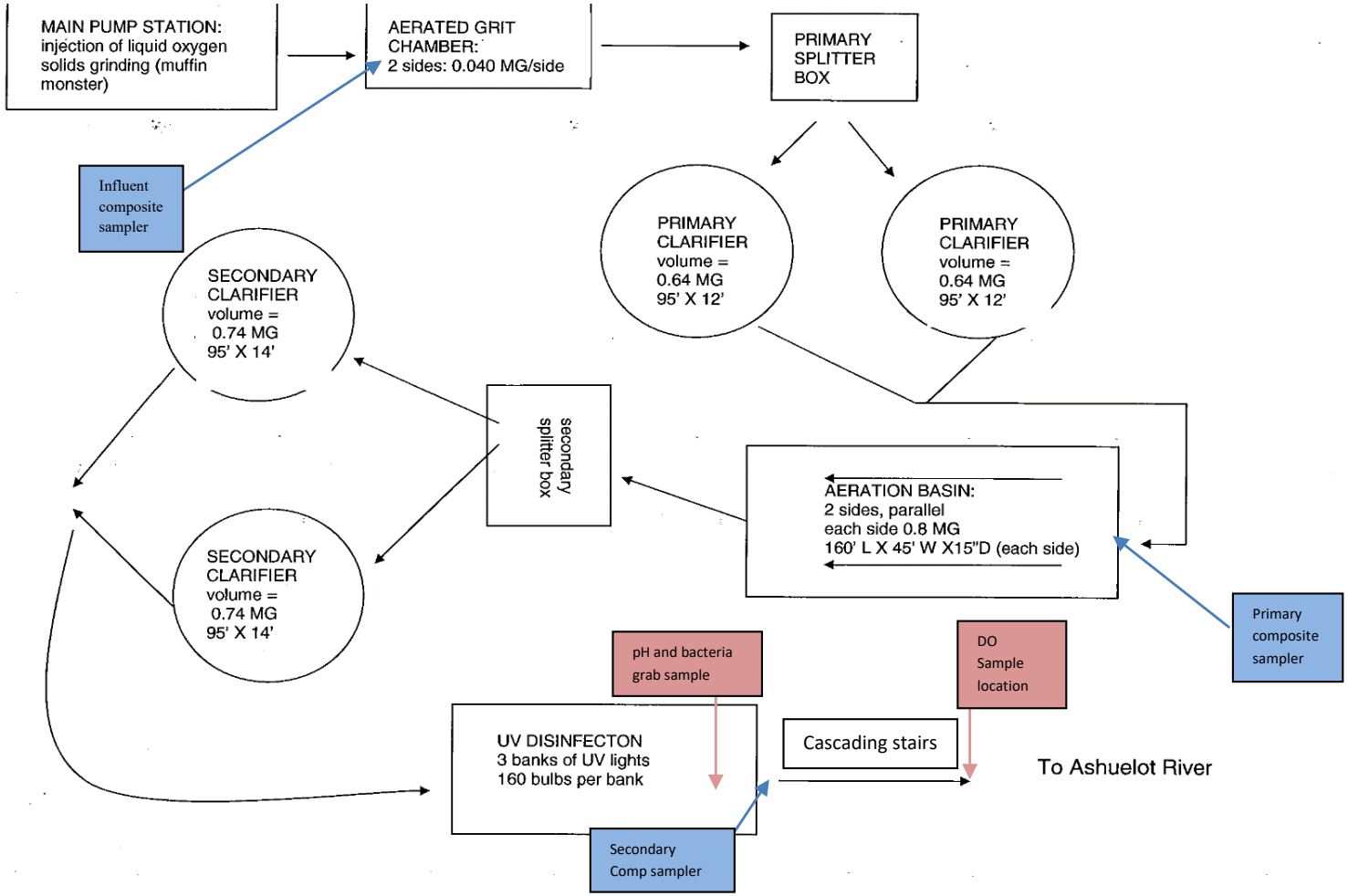


Figure 2: Keene WWTP Flow Diagram



Outfall 001 Effluent Data

Parameter	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	MGD	MGD	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L
Effluent Limit	Report	Report	1252	25	2003	40	2253	45
Minimum	1.677	1.917	9	0.8	12	1	12	1
Maximum	5.19	9.108	54	2	111	4	111	5
Median	2.647	3.624	23	1	29	1	31	1.2
No. of Violations	N/A	N/A	0	0	0	0	0	0
10/31/2014	2.682	3.963	25	1	31	2	35	2
11/30/2014	2.453	2.743	20	1	27	1	24	1
12/31/2014	3.266	4.443	33	1	38	2	44	2
1/31/2015	2.742	3.677	22	1	42	1	24	1
2/28/2015	2.216	2.41	15	1	16	1	19	1
3/31/2015	2.448	3.624	21	1	23	1	29	1
4/30/2015	3.395	3.917	32	1	29	1	32	1
5/31/2015	2.204	2.785	15	1	32	1	18	1
6/30/2015	2.114	2.543	19	1	23	1	23	1
7/31/2015	2.021	2.512	16	1	20	1	17	1
8/31/2015	2.024	4.197	15	1	20	1	22	1
9/30/2015	2.057	4.895	20	1	23	1	41	2
10/31/2015	2.66	4.972	16	1	28	1	19	1
11/30/2015	2.559	3.067	20	1	24	1	27	1
12/31/2015	2.689	3.722	25	1	32	2	45	2
1/31/2016	2.916	3.5	18	1	22	1	20	1
2/29/2016	3.568	8.168	34	1	43	2	52	2
3/31/2016	3.859	5.466	33	1	34	1	63	2
4/30/2016	3.097	3.86	49	2	68	3	109	5
5/31/2016	2.275	2.679	37	2	70	4	92	5
6/30/2016	2	2.316	14	1	17	1	17	1
7/31/2016	1.85	2.167	9	1	12	1	12	1
8/31/2016	1.933	2.304	21	1	18	1	28	2
9/30/2016	1.911	2.628	22	1	32	2	37	2
10/31/2016	1.76	2.264	16	1	18	1	20	1
11/30/2016	1.802	2.092	19	1	22	1	30	2
12/31/2016	1.957	2.657	20	1	27	2	23	1
1/31/2017	2.167	2.548	23	1	26	1	29	2
2/28/2017	2.336	4.497	28	1	29	2	40	2
3/31/2017	2.8	3.987	22	1	31	1	28	1

Outfall 001 Effluent Data

Parameter	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	MGD	MGD	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L
Effluent Limit	Report	Report	1252	25	2003	40	2253	45
4/30/2017	4.344	6.916	37	1	38	1	47	2
5/31/2017	3.786	5.559	38	1	44	1	47	2
6/30/2017	3.426	5.642	47	1	68	2	75	2
7/31/2017	2.711	3.361	35	2	46	2	48	2
8/31/2017	2.159	2.915	24	1	30	2	32	2
9/30/2017	2.161	2.666	15	0.8	24	1	20	1
10/31/2017	2.351	9.108	23	1	31	2	39	2
11/30/2017	2.836	4.4	19	1	33	1	26	1
12/31/2017	2.086	2.53	23	1	28	2	31	2
1/31/2018	3.286	6.94	29	1	36	2	40	2
2/28/2018	3.454	4.679	26	1	28	1	28	1
3/31/2018	3.804	6.284	28	1	30	1	36	1
4/30/2018	3.316	3.801	23	0.8	46	2	91	3
5/31/2018	2.718	3.348	NODI: B	NODI: B	NODI: B	NODI: B	NODI: B	NODI: B
6/30/2018	2.092	2.817	16	1	19	1	36	2
7/31/2018	2.38	3.31	16	1	18	1	20	1
8/31/2018	4.078	6.501	33	1	41	1	41	1
9/30/2018	3.219	4.63	23	1	26	1	31	1
10/31/2018	3.488	4.641	26	1	29	1	31	1
11/30/2018	5.19	7.211	54	1	64	1	64	1
12/31/2018	3.584	5.029	29	1	33	1.3	32	1.3
1/31/2019	3.182	5.025	30	1.2	37	1.8	38	1.9
2/28/2019	2.647	3.262	33	2	44	2	47	2
3/31/2019	2.41	3.17	33	2	41	2	47	2
4/30/2019	3.937	6.595	38	1	111	3	111	3
5/31/2019	3.436	4.63	NODI: B	NODI: B	NODI: B	NODI: B	NODI: B	NODI: B
6/30/2019	2.699	3.417	29	1.3	29	1.3	33	1.4
7/31/2019	2.106	2.63	22	1.2	24	1.3	26	1.4
8/31/2019	1.825	2.602	17	1.1	19	1.2	19	1.2
9/30/2019	1.677	1.917	13	1.1	14	1.1	17	1.1
10/31/2019	1.865	2.702	13	0.9	19	1.1	19	1.1

Outfall 001 Effluent Data

Parameter	CBOD5	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave Min	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max	Monthly Ave Min
Units	%	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L	%
Effluent Limit	**85**	**1502**	**30**	**2253**	**45**	**2504**	**50**	**85**
Minimum	**98.8**	**8**	**0.4**	**20**	**0.7**	**27**	**1**	**98.1**
Maximum	**99.8**	**128**	**5**	**298**	**12**	**668**	**29**	**99.9**
Median	**99.4**	**36**	**2**	**53**	**3**	**70**	**3**	**99.4**
No. of Violations	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
10/31/2014	99.5	49	2	76	5	88	4	99.3
11/30/2014	99.5	17	1	40	2	52	2	99.7
12/31/2014	98.9	36	1	48	2	87	4	99.4
1/31/2015	99.4	35	1	49	2	68	3	99.4
2/28/2015	99.6	20	1	45	2	56	3	99.7
3/31/2015	99.5	23	1	42	2	59	3	99.6
4/30/2015	99.1	19	0.7	22	0.7	56	2	99.7
5/31/2015	99.6	14	1	34	2	53	3	99.8
6/30/2015	99.5	34	2	87	5	207	12	99.5
7/31/2015	99.6	15	1	20	1	41	2	99.8
8/31/2015	99.7	15	1	22	1.5	42	2	99.8
9/30/2015	99.5	22	1	37	2	60	3	99.7
10/31/2015	99.6	8	0.4	26	1	33	1	99.9
11/30/2015	99.6	26	1	58	3	89	4	99.6
12/31/2015	99.5	40	2	63	3	114	5	99.5
1/31/2016	99.5	39	2	49	2	55	2	99.3
2/29/2016	99.3	46	2	62	3	107	5	99.3
3/31/2016	99.4	51	2	95	2	120	4	99.4
4/30/2016	99	128	5	230	10	386	17	98.4
5/31/2016	99	93	5	221	12	566	29	98.7
6/30/2016	99.7	33	2	44	2	56	3	99.6
7/31/2016	99.8	14	1	24	1	27	2	99.9
8/31/2016	99.5	22	1	25	1	62	3	99.7
9/30/2016	99.5	27	2	53	3	41	3	99.6
10/31/2016	99.6	19	1	50	4	85	6	99.7
11/30/2016	99.6	26	2	50	3	96	6	99.6
12/31/2016	99.5	16	1	28	2	34	2	99.7
1/31/2017	99.4	18	1	33	2	44	2	99.6
2/28/2017	99.1	30	2	44	3	59	3	99.3
3/31/2017	99.3	40	2	61	2	70	3	99.2

Outfall 001 Effluent Data

Parameter	CBOD5	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave Min	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max	Monthly Ave Min
Units	%	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L	%
Effluent Limit	**85**	**1502**	**30**	**2253**	**45**	**2504**	**50**	**85**
4/30/2017	98.9	57	2	91	3	155	4	99.1
5/31/2017	99.1	95	3	146	4	231	7	98.8
6/30/2017	99.1	77	3	121	3	156	4	99.1
7/31/2017	99	43	2	72	3	67	3	99.4
8/31/2017	99.2	32	2	38	2	60	3	99.5
9/30/2017	99.6	39	2	48	2	76	4	99.4
10/31/2017	99.5	98	3	60	3	668	9	99.2
11/30/2017	99.4	69	4	298	5	105	7	98.7
12/31/2017	99.1	87	5	102	7	123	8	98.1
1/31/2018	98.8	72	4	149	10	178	12	98.2
2/28/2018	99	58	2	85	3	158	6	98.6
3/31/2018	98.9	83	3	94	4	138	5	98.3
4/30/2018	99.1	11	0.4	30	1	55	2	99.8
5/31/2018	NODI: Q	32	2	41	3	59	3	99.2
6/30/2018	99.5	47	3	58	3	83	4	99.3
7/31/2018	99.6	32	2	55	3	65	3	99.5
8/31/2018	98.9	42	1	60	2	64	2	99.3
9/30/2018	99.5	36	1	51	2	78	3	99.6
10/31/2018	99.4	51	2	96	3	116	3	99.4
11/30/2018	98.9	126	3	134	4	159	7	98.8
12/31/2018	99.2	47	2	72	3	80	4	99.2
1/31/2019	99	61	3	80	4	111	4	98.8
2/28/2019	99.1	44	2	54	3	71	3	99.2
3/31/2019	98.9	36	2	53	3	61	3	99.2
4/30/2019	99	40	1	84	3	92	3	99.5
5/31/2019	NODI: Q	43	2	51	2	65	2	99.4
6/30/2019	99.2	60	3	91	4	122	5	99.3
7/31/2019	99.4	24	1.3	54	2.7	58	2.8	99.7
8/31/2019	99.4	20	1.3	39	2.5	51	3.2	99.8
9/30/2019	99.5	17	1.3	27.3	2.1	32	3.2	99.7
10/31/2019	99.7	36	2.3	44	3.1	50	3.8	99.6

Outfall 001 Effluent Data

Parameter	pH	pH	E. coli	E. coli	DO	Ammonia	Ammonia	Ammonia
	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Minimum	Monthly Ave	Monthly Ave	Monthly Ave
Units	SU	SU	#/100mL	#/100mL	mg/L	lb/d	mg/L	lb/d
Effluent Limit	**6.5**	**8**	**126**	**406**	**7**	**600**	**12**	**105**
Minimum	**6.3**	**6.8**	**1**	**0**	**7.1**	**2**	**0.1**	**1**
Maximum	**6.7**	**9.5**	**11**	**1203**	**9.3**	**230**	**7**	**39**
Median	**6.5**	**7**	**2**	**9**	**8.3**	**35**	**1.5**	**4**
No. of Violations	**3**	**4**	**0**	**2**	**0**	**0**	**0**	**0**
10/31/2014	6.7	7.8	4	44	7.6			8
11/30/2014	6.5	7.2	2	6	7.8	7	0.3	
12/31/2014	6.5	7.2	1	1	7.3	24	0.9	
1/31/2015	6.5	7	1	4	7.8	41	1.7	
2/28/2015	6.6	6.9	3	1203	8.2	34	1.8	
3/31/2015	6.5	6.9	3	16	9.3	58	2.7	
4/30/2015	6.5	6.8	2	9	8.1	95	4	
5/31/2015	6.5	6.8	1	6	8.3	72	3.5	
6/30/2015	6.5	7	1	4	8.3			7
7/31/2015	6.6	6.9	1	7	7.9			7
8/31/2015	6.5	7	2	9	8.2			2
9/30/2015	6.6	7	6	687	8			2
10/31/2015	6.7	7	4	14	8.3			4
11/30/2015	6.6	6.9	8	15	8.7	25	1	
12/31/2015	6.5	6.9	4	10	9	28	1	
1/31/2016	6.6	6.8	1	4	9.3	88	3.6	
2/29/2016	6.5	7	2	37	7.4	96	3.7	
3/31/2016	6.6	6.9	2	6	8.8	230	7	
4/30/2016	6.6	6.9	2	6	8.6	42	1.6	
5/31/2016	6.6	7.2	2	15	8.7	5	0.2	
6/30/2016	6.6	7	2	27	8.3			1
7/31/2016	6.6	7.1	1	3	8.1			2
8/31/2016	6.6	7.1	2	7	8			5
9/30/2016	6.6	7.2	5	17	8			2
10/31/2016	6.6	6.9	2	8	8.4			5
11/30/2016	6.6	6.9	2	8	8.6	9	0.5	
12/31/2016	6.6	7	1	2	8.7	18	1	
1/31/2017	6.6	7	3	9	9.3	36	2	
2/28/2017	6.6	7	2	5	8.8	134	6.2	
3/31/2017	6.6	7	1	10	8.3	129	5.4	

Outfall 001 Effluent Data

Parameter	pH	pH	E. coli	E. coli	DO	Ammonia	Ammonia	Ammonia
	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Minimum	Monthly Ave	Monthly Ave	Monthly Ave
Units	SU	SU	#/100mL	#/100mL	mg/L	lb/d	mg/L	lb/d
Effluent Limit	**6.5**	**8**	**126**	**406**	**7**	**600**	**12**	**105**
4/30/2017	6.5	6.8	4	96	8.1	35	1	
5/31/2017	6.5	6.9	4	81	8.5	11	0.3	
6/30/2017	6.6	7	2	4	8.3			7
7/31/2017	6.7	7.3	2	5	8.3			4
8/31/2017	6.7	7.1	3	20	8			2
9/30/2017	6.7	7	2	6	8.2			5
10/31/2017	6.5	7.2	6	161	7.1			39
11/30/2017	6.6	6.9	3	8	9	10	0.4	
12/31/2017	6.5	7	2	5	9	2	0.1	
1/31/2018	6.5	7.2	11	69	8.3	107	3.5	
2/28/2018	6.5	7.9	6	25	8.9	202	6.7	
3/31/2018	6.5	**8.1**	6	25	9.2	106	3.3	
4/30/2018	6.7	8	2	11	8.8	42	1.5	
5/31/2018	**6.4**	**9.5**	1.4	6	8.9	4	0.2	
6/30/2018	6.6	7.2	2	10	8.5			2
7/31/2018	6.5	**8.5**	2	3	8			4
8/31/2018	6.5	7.1	4	26	7.8			3
9/30/2018	6.5	7.4	3.4	16	7.9			6
10/31/2018	6.5	7.2	2.5	13	8.3			2
11/30/2018	6.5	7.1	7	<= 63	7.9	10	0.2	
12/31/2018	6.5	7.8	2.2	6	8.7	3	0.1	
1/31/2019	**6.3**	7.2	2.4	9	9	2	0.1	
2/28/2019	6.5	7.1	2	12	8.8	13	0.6	
3/31/2019	**6.4**	7.2	3	131	8.9	74	4.1	
4/30/2019	6.5	8	2	9	8.3	97	3	
5/31/2019	6.5	7	1.2	2	8.1	13	0.4	
6/30/2019	6.5	**8.4**	2.6	24	8.2			15
7/31/2019	6.5	7.4	2	12	8.3			2
8/31/2019	6.5	7.5	2	8	8.3			8
9/30/2019	6.5	7	1.5	5	8.3			2
10/31/2019	6.5	7	1.7	8	8.4			1

Outfall 001 Effluent Data

Parameter	Ammonia	Ammonia	Ammonia	TP	TP	TP	Dissolved orthophosphate	Dissolved orthophosphate
	Monthly Ave	Daily Max	Daily Max	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	mg/L	lb/d	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	2.1	155	3.1	0.2	1	Report	Report	Report
Minimum	0.07	2	0.1	0	0	0	0	0
Maximum	1.1	243	3.2	0.2	0.3	0.7	0.1	0.2
Median	0.2	9	0.465	0.1	0.1	0.1	0	0
No. of Violations	0	1	1	0	0	N/A	N/A	N/A
10/31/2014	0.3	54	2.2	0.1		0.1		
11/30/2014					0.1	0.1	0	0.1
12/31/2014					0	0.1	0	0
1/31/2015					0.1	0.1	0	0
2/28/2015					0.1	0.1	0	0
3/31/2015					0.1	0.1	0	0
4/30/2015				0		0.1		
5/31/2015				0		0	0	0
6/30/2015	0.3	29	1.4	0		0.1		
7/31/2015	0.4	13	0.8	0		0.1		
8/31/2015	0.1	7	0.3	0		0.1		
9/30/2015	0.1	5	0.3	0.1		0.2		
10/31/2015	0.2	14	0.8	0.1		0.1		
11/30/2015					0	0.1	0	0
12/31/2015					0.1	0.2	0	0
1/31/2016					0	0.1	0	0
2/29/2016					0.1	0.3	0	0
3/31/2016					0.1	0.1	0	0
4/30/2016				0.1		0.2		
5/31/2016				0.1		0.3	0	0
6/30/2016	0.1	2	0.1	0		0		
7/31/2016	0.1	5	0.3	0		0		
8/31/2016	0.3	12	0.8	0		0.1		
9/30/2016	0.2	7	0.4	0.1		0.2		
10/31/2016	0.4	23	1.7	0		0.3		
11/30/2016					0.1	0.2	0	0
12/31/2016					0.1	0.2	0	0
1/31/2017					0	0.1	0	0
2/28/2017					0.1	0.1	0	0
3/31/2017					0.1	0.1	0	0

Outfall 001 Effluent Data

Parameter	Ammonia	Ammonia	Ammonia	TP	TP	TP	Dissolved orthophosphate	Dissolved orthophosphate
	Monthly Ave	Daily Max	Daily Max	Monthly Ave	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	mg/L	lb/d	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	2.1	155	3.1	0.2	1	Report	Report	Report
4/30/2017				0		0.1		
5/31/2017				0.1		0.2	0	0
6/30/2017	0.2	21	0.6	0.1		0.1		
7/31/2017	0.2	9	0.4	0.1		0.1		
8/31/2017	0.1	8	0.4	0.1		0.1		
9/30/2017	0.3	9	0.6	0.1		0.1		
10/31/2017	1.1	243	3.2	0.1		0.7		
11/30/2017					0.1	0.3	0	0.2
12/31/2017					0.3	0.6	0	0
1/31/2018					0.2	0.5	0	0
2/28/2018					0.1	0.1	0	0.1
3/31/2018					0.1	0.2	0	0.1
4/30/2018				0.2		0.3		
5/31/2018				0		0.1	0	0
6/30/2018	0.1	4	0.2	0.1		0.1		
7/31/2018	0.2	11	0.53	0		0.1		
8/31/2018	0.1	6	0.2	0		0.1		
9/30/2018	0.2	24	0.8	0.1		0.1		
10/31/2018	0.1	9	0.3	0.1		0.1		
11/30/2018					0.1	0.1	0	0
12/31/2018					0.1	0.1	0	0
1/31/2019					0.1	0.2	0	0.1
2/28/2019					0.2	0.3	0.1	0.2
3/31/2019					0.1	0.2	0	0.1
4/30/2019				0.1		0.1		
5/31/2019				0		0.1	0	0
6/30/2019	0.6	45	1.8	0.1		0.2		
7/31/2019	0.1	3.8	0.2	0		0		
8/31/2019	0.5	26	1.6	0		0.1		
9/30/2019	0.13	4.1	0.27	0.1		0.1		
10/31/2019	0.07	2.1	0.11	0.1		0.2		

Outfall 001 Effluent Data

Parameter	Aluminum	Aluminum	Copper	Copper	Lead	Lead	Zinc	Zinc
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	5.9	7.9	1.1	Report	77	77
Minimum	0	0	0	0	0	0	0	0
Maximum	330	410	8.1	12.1	0	0	48	60
Median	57.5	67	1.5	3	0	0	24.5	26
No. of Violations	N/A	N/A	1	1	0	N/A	0	0
10/31/2014	110	122	8.1	12.1	0	0	25.5	27
11/30/2014	74	76	5.3	7.4	0	0	13.5	16
12/31/2014	80	103	4.3	4.7	0	0	12.5	13
1/31/2015	100	125	5.8	6.1	0	0	20	21
2/28/2015	64	84	1.5	2.9	0	0	20	22
3/31/2015	71	72	4.5	5	0	0	24	25
4/30/2015	70	80	0	0	0	0	19.5	20
5/31/2015	32	35	1.3	2.6	0	0	17.5	18
6/30/2015	68	96	1.6	3.2	0	0	18	18
7/31/2015	41	44	0	0	0	0	27.7	31
8/31/2015	51	63	3.3	3.5	0	0	29	30
9/30/2015	41	45	1.5	3	0	0	27	29
10/31/2015	34	38	2	4	0	0	23	26
11/30/2015	54	56	3	3	0	0	26	28
12/31/2015	42	46	3	3	0	0	38	50
1/31/2016	44	60	3.5	4	0	0	22	23
2/29/2016	70	79	3.5	3.8	0	0	24.5	26
3/31/2016	51	59	0	0	0	0	20	21
4/30/2016	88	106	3.1	3.2	0	0	24.5	25
5/31/2016	134	141	1.3	2.6	0	0	24	26
6/30/2016	19	38	4	4.8	0	0	30	30
7/31/2016	46	95	3.8	4.6	0	0	25	32
8/31/2016	29.5	31	1.4	2.7	0	0	19.5	20
9/30/2016	36	38	2	3	0	0	48	60
10/31/2016	53.5	58	4.5	4.6	0	0	30	30
11/30/2016	30.5	32	0	0	0	0	25	28
12/31/2016	42	44	1.4	2.8	0	0	33	36
1/31/2017	37	43	0	0	0	0	32	35
2/28/2017	73	95	0	0	0	0	23	27
3/31/2017	90.5	110	3	3.1	0	0	33.5	35

Outfall 001 Effluent Data

Parameter	Aluminum	Aluminum	Copper	Copper	Lead	Lead	Zinc	Zinc
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	5.9	7.9	1.1	Report	77	77
4/30/2017	0	0	0	0	0	0	18	18
5/31/2017	140	190	1.3	2.5	0	0	19	20
6/30/2017	25	26	1.3	2.5	0	0	26.5	28
7/31/2017	70	86	0.8	2.5	0	0	20.3	24
8/31/2017	74	88	0	0	0	0	32	35
9/30/2017	64	67	0	0	0	0	24	24
10/31/2017	80	98	0	0	0	0	0	0
11/30/2017	112	140	1.6	3.2	0	0	19	26
12/31/2017	140	200	3.4	4.1	0	0	22.5	24
1/31/2018	330	410	5.8	6.8	0	0	21.5	25
2/28/2018	66.5	76	2.7	2.9	0	0	42	56
3/31/2018	31	33	1.3	2.6	0	0	15.5	16
4/30/2018	37	43	1.5	3	0	0	27	29
5/31/2018	44	47	0	0	0	0	29.5	30
6/30/2018	51	64	1.5	3	0	0	33	43
7/31/2018	40.3	46	3.8	5.1	0	0	32.3	42
8/31/2018	41.5	42	0	0	0	0	25.5	34
9/30/2018	57.5	76	1.9	3.7	0	0	29	32
10/31/2018	70	95	0	0	0	0	20.5	25
11/30/2018	91.5	96	1.5	2.9	0	0	17	20
12/31/2018	67	88	3.2	3.7	0	0	18.5	20
1/31/2019	94	150	1.4	2.7	0	0	20.5	23
2/28/2019	72	83	1.7	3.4	0	0	41.5	45
3/31/2019	60	63	3.5	3.7	0	0	31.5	36
4/30/2019	60	87	0	0	0	0	16	18
5/31/2019	41	42	0	0	0	0	19.5	20
6/30/2019	56.5	61	0	0	0	0	25.5	30
7/31/2019	33.3	36	3	3.2	0	0	25.7	29
8/31/2019	27	28	1.7	3.3	0	0	26	28
9/30/2019	41	44	0	0	0	0	19.5	23
10/31/2019	94	110	3.9	4.5	0	0	39	44

WET Effluent Data

Parameter	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	C-NOEC Chronic Ceriodaphnia	Noel Statre 7Day Chronic Pimephales	Ammonia	Cadmium	Nickel	Hardness
	Daily Min	Daily Min	Daily Min	Daily Min	Daily Max	Daily Max	Daily Max	Daily Max
Units	%	%	%	%	mg/L	mg/L	mg/L	mg/L
Effluent Limit	100	100	48	48	Report	Report	Report	Report
Minimum	100	100	100	100	0.09	0	0	47
Maximum	100	100	100	100	0.6	0	0	59
Median	100	100	100	100	0.15	0	0	56
No. of Violations	0	0	0	0	N/A	N/A	N/A	N/A
9/30/2015	100	100	100	100	0.6	0	0	49
9/30/2016	100	100	100	100	0.15	0	0	47
9/30/2017	100	100	100	100	0.1	0	0	59
9/30/2018	100	100	100	100	0.09	0	0	57
9/30/2019	100	100	100	100	0.22	0	0	56

WET Ambient Data

Parameter	Ammonia	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc	Hardness
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0.04	0	0	0	0	0	9.6
Maximum	0.57	0.16	0	0.0022	0	0	0.027	33
Median	0.06	0.05	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	21
No. of Violations	N/A	N/A	5	5	N/A	N/A	N/A	N/A
9/30/2015	0.57	0.054	<0.0002	<0.002	<0.0005	<0.005	0.027	21
9/30/2016	<0.06	0.04	<0.0002	<0.002	<0.0005	<0.005	<0.020	22
9/30/2017	0.06	0.16	<0.0002	<0.002	<0.001	<0.005	<0.020	9.6
9/30/2018	0.07	0.05	<0.0002	0.0022	<0.001	<0.005	<0.020	33
9/30/2019	<0.05	0.1	<0.0002	<0.002	<0.001	<0.005	<0.020	15

A reasonable potential analysis is completed using a single set of critical conditions for flow and pollutant concentration that will ensure the protection of water quality standards. To determine the critical condition of the effluent, EPA projects an upper bound of the effluent concentration based on the observed monitoring data and a selected probability basis. EPA generally applies the quantitative approach found in Appendix E of EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD)[1] to determine the upper bound of the effluent data. This methodology accounts for effluent variability based on the size of the dataset and the occurrence of non-detects (i.e., samples results in which a parameter is not detected above laboratory detection limits). For datasets of 10 or more samples, EPA uses the upper bound effluent concentration at the 95th percentile of the dataset. For datasets of less than 10 samples, EPA uses the maximum value of the dataset.

EPA uses the calculated upper bound of the effluent data, along with a concentration representative of the parameter in the receiving water, the critical effluent flow, and the critical upstream flow to project the downstream concentration after complete mixing using the following simple mass-balance equation:

$$C_s Q_s + C_e Q_e = C_d Q_d$$

Where:

C_s = upstream concentration (median value of available ambient data)
Q_s = upstream flow (7Q10 flow upstream of the outfall)
C_e = effluent concentration (95th percentile or maximum of effluent concentration)
Q_e = effluent flow of the facility (design flow)
C_d = downstream concentration
Q_d = downstream flow ($Q_s + Q_e$)

Solving for the downstream concentration results in:

$$C_d = \frac{C_s Q_s + C_e Q_e}{Q_d}$$

When both the downstream concentration (C_d) and the effluent concentration (C_e) exceed the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above the water quality standard. *See* 40 C.F.R. § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must

contain WQBELs for the parameter. *See* 40 C.F.R. § 122.44(d)(1)(iii). Limits are calculated by using the criterion as the downstream concentration (C_d) and rearranging the mass balance equation to solve for the effluent concentration (C_e). The table below presents the reasonable potential calculations and, if applicable, the calculation of the limits required in the permit. Refer to the pollutant-specific section of the Fact Sheet for a detailed discussion of these calculations, any assumptions that were made and the resulting permit requirements.

Pollutant	Q_s	C_s [1]	Q_e	C_e [2]		Q_d	C_d		Criteria * 0.9		Reasonable Potential		Limits	
	cfs	mg/L	cfs	Acute (mg/L)	Chronic (mg/L)	cfs	Acute (mg/L)	Chronic (mg/L)	Acute (mg/L)	Chronic (mg/L)	C_e & C_d > Acute Criteria	C_e & C_d > Chronic Criteria	Acute (mg/L)	Chronic (mg/L)
Ammonia (Warm)		0.06		3.1	2.1		1.4	1.0	13.5	1.4	N/A	N/A	3.1	2.1
Ammonia (Cold)		0.0		0.6	12.0		0.3	5.4	29.3	4.4	N	N/A	N/A	9.9
Phosphorus		0.02		N/A	0.20		N/A	0.10	N/A	0.090	N/A	N/A	N/A	0.18
		µg/L		µg/L	µg/L		µg/L	µg/L	µg/L	µg/L			µg/L	µg/L
Aluminum	11.4	54.0	9.29	131.2	131.2	20.69	88.7	88.7	675	78.3	N	**Y**	N/A	108
Cadmium		0.0		0.0	0.0		0.0	0.0	0.6	0.3	N	N	N/A	N/A
Copper		0.0		7.9	5.9		3.5	2.6	4.9	3.6	N/A	N/A	7.9	5.9
Lead		0.0		0.0	1.1		0.0	0.5	20.5	0.8	N	N/A	N/A	1.1
Nickel		0.0		0.0	0.0		0.0	0.0	180.9	20.1	N	N	N/A	N/A
Zinc		0.0		77.0	77.0		34.6	34.6	46.1	46.1	N/A	N/A	77.0	77.0

[1]Median concentration for the receiving water just upstream of the facility's discharge taken from the WET testing data during the review period (see Appendix A).

[2]Values represent the 95th percentile (for $n \geq 10$) or maximum (for $n < 10$) concentrations from the DMR data and/or WET testing data during the review period (see Appendix A). If the metal already has a limit (for either acute or chronic conditions), the value represents the existing limit.

APPENDIX C

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/year)
Total Massachusetts Out-of-Basin Load			**262**	**146**	**11,528**	**11,215**	**9,767**	**10,557**	**10,631**	**10,740**
Total Massachusetts Connecticut River Load			**179.6**	**98**	**9,184**	**8,945**	**7,695**	**8,390**	**8,341**	**8,511**
MA0101613	SPRINGFIELD REGIONAL WTP	POTW	67.00	36.26	2,303	2,377	1,643	1,953	1,684	1,992
MA0101508	CHICOPEE WPC	POTW	15.50	7.83	2,220	2,092	1,854	1,872	1,895	1,987
MA0101630	HOLYOKE WPCF	POTW	17.50	8.05	584	644	687	747	593	651
MA0101214	GREENFIELD WPCF	POTW	3.20	3.23	436	467	460	386	482	446
MA0100994	GARDNER WWTF	POTW	5.00	2.89	413	470	377	455	404	424
MA0101818	NORTHAMPTON WWTP	POTW	8.60	3.85	489	412	355	393	453	420
MA0100218	AMHERST WWTP	POTW	7.10	3.76	456	411	335	342	377	384
MA0100455	SOUTH HADLEY WWTF	POTW	4.20	2.37	393	325	288	364	315	337
MA0101478	EASTHAMPTON WWTP	POTW	3.80	3.44	202	186	262	329	639	324
MA0101800	WESTFIELD WWTP	POTW	6.10	2.88	276	225	221	189	211	224
MA0110264	AUSTRALIS AQUACULTURE, LLC	IND	0.30	0.13	149	138	116	107	74	117
MA0101168	PALMER WPCF	POTW	5.60	1.47	142	92	84	100	125	109
MA0100137	MONTAGUE WWTF	POTW	1.80	0.84	107	78	55	215	78	107
MA0100099	HADLEY WWTP	POTW	0.54	0.38	73	76	65	109	67	78
MA0100889	WARE WWTP	POTW	1.00	0.55	62	89	87	72	78	77
MA0101257	ORANGE WWTP	POTW	1.10	0.98	72	62	58	91	91	75
MA0003697	BARNHARDT MANUFACTURING	IND	0.89	0.33	58	78	49	54	96	67
MA0103152	BARRE WWTF	POTW	0.30	0.19	77	81	50	50	49	61
MA0101567	WARREN WWTP	POTW	1.50	0.26	45	42	124	38	55	61
MA0000469	SEAMAN PAPER OF MASSACHUSETTS	IND	1.10	0.83	26	97	53	62	46	57
MA0100005	ATHOL WWTF	POTW	1.75	0.79	76	56	40	39	44	51
MA0101061	NORTH BROOKFIELD WWTP	POTW	0.62	0.32	62	51	40	47	50	50
MA0110043	MCLAUGHLIN STATE TROUT HATCHERY	IND	7.50	7.12	39	44	43	41	37	41
MA0100919	SPENCER WWTP	POTW	1.08	0.35	28	33	31	29	71	38

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

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Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/year)
MA0100862	WINCHENDON WPCF	POTW	1.10	0.50	25	33	29	48	40	35
MA0101290	HATFIELD WWTF	POTW	0.50	0.17	51	37	28	28	27	34
MA0101052	ERVING WWTP #2	POTW	2.70	1.78	35	38	38	33	25	34
MA0100340	TEMPLETON WWTF	POTW	2.80	0.27	19	35	18	21	35	26
MAG580004	SOUTH DEERFIELD WWTP	POTW	0.85	0.37	15	33	18	18	27	22
MA0040207	CHANG FARMS INC	IND	0.65	0.22	22	15	34	20	20	22
MA0110035	MCLAUGHLIN/SUNDERLAND STATE FISH HATCHERY	IND	2.10	2.16	25	22	19	20	25	22
MA0102148	BELCHERTOWN WRF	POTW	1.00	0.36	61	13	11	11	5.6	20
MAG580002	SHELBURNE WWTF	POTW	0.25	0.16	15	13	17	17	21	17
MAG580005	SUNDERLAND WWTF	POTW	0.50	0.17	20	12	13	10	9.3	13
MAG580001	OLD DEERFIELD WWTP	POTW	0.25	0.068	13	14	13	12	12	13
MA0110051	MCLAUGHLIN/BITZER STATE TROUT HATCHERY	IND	1.43	1.70	23	12	12	8.2	8.2	13
MA0032573	NORTHFIELD MT HERMON SCHOOL WWTP	POTW	0.45	0.072	22	7.6	15	10	10	13
MA0100102	HARDWICK WPCF	POTW	0.23	0.12	8.2	5.9	13	4.3	17	10
MA0100200	NORTHFIELD WWTF	POTW	0.28	0.080	3.8	6.8	6.5	10	14	8.1
MA0101516	ERVING WWTP #1	POTW	1.02	0.14	7.2	6.1	3.7	10	7.5	6.9
MA0102776	ERVING WWTP #3	POTW	0.010	0.0049	6.1	2.9	6.9	8.0	7.5	6.3
MA0102431	HARDWICK WWTP	POTW	0.040	0.016	7.4	1.5	11	6.9	2.3	5.9
MAG580003	CHARLEMONT WWTF	POTW	0.050	0.016	7.5	4.2	4.8	4.8	4.8	5.2
MA0101265	HUNTINGTON WWTP	POTW	0.20	0.067	4.6	4.1	5.6	4.3	5.2	4.7
MA0100188	MONROE WWTF	POTW	0.020	0.013	*1.4*	1.4	1.2	2.3	1.7	1.6
MA0000272	PAN AM RAILWAYS YARD	IND	0.015	0.011	0.06	0.13	0.12	0.47	0.18	0.19
MA0001350	LS STARRETT PRECISION TOOLS	IND	0.025	0.014	0.03	0.0	0.08	0.07	0.04	0.05
MA0100161	ROYALSTON WWTP	POTW	0.039	0.01298	*0.9*	0.49	0.43	0.49	0.60	0.59
Total Massachusetts Housatonic Load			**29.4**	**18**	**1,667**	**1,605**	**1,509**	**1,612**	**1,707**	**1,626**
MA0101681	PITTSFIELD WWTF	POTW	17.00	10.55	1,179	1,176	1,145	1,245	1,319	1,213
MA0000671	CRANE WWTP	POTW	3.10	3.07	155	142	108	116	107	126

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Massachusetts Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/year)
MA0101524	GREAT BARRINGTON WWTF	POTW	3.20	0.97	110	120	100	99	124	111
MA0100935	LENOX CENTER WWTF	POTW	1.19	0.61	49	67	59	71	78	65
MA0001848	ONYX SPECIALTY PAPERS INC - WILLOW MILL	IND	1.10	0.94	51	39	44	33	22	38
MA0005011	PAPERLOGIC TURNERS FALLS MILL(6)	IND	0.70	0.73	85	17	12	6.5	Term	30
MA0100153	LEE WWTF	POTW	1.25	0.64	18	17	14	15	35	20
MA0101087	STOCKBRIDGE WWTP	POTW	0.30	0.15	10	15	16	13	10	13
MA0103110	WEST STOCKBRIDGE WWWTF	POTW	0.076	0.014	*5.3*	*3.8*	4.3	5.0	3.7	4.4
MA0001716	MEADWESTVACO CUSTOM PAPERS LAUREL MILL	IND	1.5	0.34	4.3	7.9	5.7	7.2	7.8	6.6
Total Massachusetts Thames River Load			**11.8**	**6**	**677**	**666**	**564**	**556**	**583**	**609**
MA0100439	WEBSTER WWTF	POTW	6.00	2.97	389	393	328	292	344	349
MA0100901	SOUTHBRIDGE WWTF	POTW	3.77	1.97	*178*	149	154	151	130	152
MA0101141	CHARLTON WWTF	POTW	0.45	0.21	40	75	41	68	70	59
MA0100421	STURBRIDGE WPCF	POTW	0.75	0.51	44	21	18	19	20	24
MA0101796	LEICESTER WATER SUPPLY WWTF	POTW	0.35	0.19	24	27	22	26	19	24
MA0100170	OXFORD ROCHDALE WWTP	POTW	0.50	0.24	2.4	1.0	0.23	0.57	0.49	0.9

NOTES:

1) italics = estimated load based on average conc & flow from other years, or if no data for any years, assumed concentration of 19.6 mg/L.

2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.

3) Term = Permit was terminated in that year

4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

Summary of New Hampshire Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 Average Load (lb/day)	2015 Average Load (lb/day)	2016 Average Load (lb/day)	2017 Average Load (lb/day)	2018 Average Load (lb/day)	2014-2018 Avg Load (lb/day)
Total New Hampshire Out-of-Basin Load			**31.5**	**18.6**	**1,662**	**1,457**	**1,370**	**1,555**	**1,154**	**1,440**
NH0000621	BERLIN STATE FISH HATCHERY	IND	6.1	6.30	8.8	13	13	15	8.7	12
NH0000744	NH DES (TWIN MTN STATE FISH HATCHERY)	IND	1.0	0.78	2.0	5.8	6.2	5.5	5.1	4.9
NH0100099	HANOVER WWTF	POTW	2.3	1.30	*341*	*341*	313	350	361	341
NH0100145	LANCASTER WWTF	POTW	1.2	0.79	84	78	45	72	63	68
NH0100153	LITTLETON WWTP	POTW	1.5	0.69	32	36	24	31	45	34
NH0100200	NEWPORT WWTF	POTW	1.3	0.59	97	63	80	80	79	80
NH0100366	LEBANON WWTF	POTW	3.2	1.49	*136*	*136*	132	127	152	137
NH0100382	HINSDALE WWTP	POTW	0.3	0.19	*18*	17	11	20	16	16
NH0100510	WHITEFIELD WWTF	POTW	0.2	0.08	35	22	15	18	24	23
NH0100544	SUNAPEE WWTF	POTW	0.6	0.40	*32*	*32*	*32*	50	33	35
NH0100765	CHARLESTOWN WWTP	POTW	1.1	0.28	22	13	12	19	22	17
NH0100790	KEENE WWTF	POTW	6.0	2.89	*533*	*397*	*394*	*452*	553	465
NH0101052	TROY WWTF	POTW	0.3	0.08	23	15	12	13	25	18
NH0101150	WEST SWANZEY WWTP	POTW	0.2	0.07	6.1	6.4	7.8	7.8	15	8.7
NH0101168	MERIDEN VILLAGE WATER DISTRICT	POTW	0.1	0.03	0.53	2.5	1.4	2.9	1.3	1.7
NH0101257	CLAREMONT WWTF	POTW	3.9	1.51	*161*	*161*	*161*	163	146	158
NH0101392	BETHLEHEM VILLAGE WWTP (1)	POTW	0.3	0.21	25	26	25	29	25	26
NHG580226	GROVETON WWTP	POTW	0.4	0.12	18	13	10	12	14	13
NHG580315	COLEBROOK WWTP	POTW	0.5	0.22	26	23	21	31	31	26
NHG580391	CHESHIRE COUNTY MAPLEWOOD NURSING HOME	POTW	0.040	0.02	2.1	1.6	1.3	1.5	1.3	1.5
NHG580404	WINCHESTER WWTP	POTW	0.28	0.14	6.1	11	3.9	13	8.3	8.3
NHG580421	LISBON WWTF	POTW	0.3	0.12	26	23	19	17	17	20
NHG580536	STRATFORD VILLAGE SYSTEM	POTW	0.1	0.01	2.2	1.9	3.9	2.5	2.8	2.7
NHG580978	WOODSVILLE WWTF	POTW	0.3	0.19	22	15	19	19	13	18
NHG581206	NORTHUMBERLAND VILLAGE WPCF	POTW	0.1	0.04	2.7	3.3	3.5	2.6	3.1	3.0
NHG581214	STRATFORD-MILL HOUSE	POTW	0.0	0.01	1.4	1.5	2.2	1.8	2.3	1.8
NHG581249	LANCASTER GRANGE WWTP	POTW	0.0	0.00	0.45	0.53	0.45	0.49	0.44	0.47

NOTES:

1) *italics* = estimated load based on average conc & flow from other years, or if no data for any years, assumed concentration of 19.6 mg/L.

2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.

3) Term = Permit was terminated in that year

4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

NH, VT, MA Nitrogen Discharges to Long Island Sound Watershed

Summary of Vermont Out-Of-Basin Wastewater Treatment Plant and Industrial Discharger Total Nitrogen Effluent Data

Permit #	Name	Type	Design Flow (MGD)	2014-2018 Avg Flow (MGD)	2014 load (lb/day)	2015 load (lb/day)	2016 load (lb/day)	2017 load (lb/day)	2018 load (lb/day)	2014-2018 Avg Load (lb/day)
	Total Vermont Out-of-Basin Load		**18.3**	**7.8**	**1,273**	**1,255**	**1,146**	**1,221**	**1,421**	**1,263**
VT0000019	WEIDMANN ELECTRICAL TECHNOLOGY INC	IND	0.25	0.15	2.4	1.4	1.4	1.2	1.7	1.6
VT0000108	PUTNEY PAPER COMPANY MILL & LAGOONS	IND	0.28	0.16	22	26	20	22	17	22
VT0000248	FIBERMARK	IND	2.00	1.06	117	82	89	106	92	97
VT0100013	BELLOWS FALLS WWTF	POTW	1.40	0.44	136	136	136	102	179	138
VT0100048	BETHEL	POTW	0.13	0.06	10.4	4.0	2.4	6.5	3.5	5.4
VT0100064	BRATTLEBORO WWTF	POTW	3.01	1.27	487	487	446	501	421	469
VT0100081	CHESTER MTP	POTW	0.19	0.16	16	5.0	4.5	5.6	7.6	7.6
VT0100145	LUDLOW WWTF	POTW	0.71	0.37	35	27	35	41	42	36
VT0100277	PUTNEY	POTW	0.09	0.05	16	16	11	16	21	16
VT0100285	RANDOLPH	POTW	0.41	0.17	23	23	21	20	28	23
VT0100374	SPRINGFIELD WWTF	POTW	2.20	0.98	133	133	133	120	130	130
VT0100447	WINDSOR-WESTON HEIGHTS	POTW	0.02	0.01	0.40	0.53	1.2	0.88	1.0	0.8
VT0100579	ST JOHNSBURY	POTW	1.60	0.83	34	23	13	24	146	48
VT0100595	LYNDON WWTP	POTW	0.76	0.15	21	21	16	24	21	20
VT0100625	CANAAN MTP	POTW	0.19	0.10	17	15	16	19	17	17
VT0100633	DANVILLE WPCF	POTW	0.07	0.03	2.9	3.5	7.6	4.4	4.3	4.5
VT0100706	WILMINGTON WWTP	POTW	0.15	0.08	3.8	15.9	10.0	4.7	17.2	10
VT0100731	READSBORO WPC	POTW	0.76	0.04	3.6	3.2	2.8	3.8	4.0	3.5
VT0100749	S. WOODSTOCK WWTF	POTW	0.06	0.01	1.9	1.9	0.7	1.2	3.9	1.9
VT0100757	WOODSTOCK WWTP	POTW	0.46	0.22	25	23	24	26	22	24
VT0100765	WOODSTOCK - TAFTSVILLE	POTW	0.02	0.00	0.32	0.24	0.20	0.55	0.87	0.44
VT0100803	BRADFORD WPCP	POTW	0.15	0.08	9.1	9.1	7.7	9.4	8.5	8.8
VT0100846	BRIDGEWATER WWTF	POTW	0.05	0.01	1.1	0.91	1.0	1.1	1.1	1.1
VT0100854	ROYALTON WWTF	POTW	0.08	0.02	5.2	4.6	4.7	7.7	5.0	5.4
VT0100862	CAVENDISH WWTF	POTW	0.16	0.06	15	10	9	11	15	12
VT0100919	WINDSOR WWTF	POTW	1.13	0.25	69	69	66	65	71	68
VT0100943	CHELSEA WWTF	POTW	0.07	0.02	8.2	8.2	4.8	8.9	9.9	8.0
VT0100951	RYEGATE FIRE DEPARTMENT .#2	POTW	0.01	0.00	0.55	1.1	1.9	2.1	0.76	1.3
VT0100978	HARTFORD - QUECHEE	POTW	0.31	0.22	24	53	12	12	10	22
VT0101010	HARTFORD WWTF	POTW	1.23	0.61	11	31	30	34	89	39
VT0101044	WHITINGHAM(JACKSONVILLE)	POTW	0.06	0.02	3.2	3.5	3.4	2.8	3.1	3.2
VT0101061	LUNENBURG FIRE DISTRICT #2	POTW	0.09	0.06	7.6	6.9	5.6	3.2	7.8	6.2
VT0101109	WHITINGHAM	POTW	0.02	0.01	1.2	1.4	1.5	1.2	3.0	1.7
VT0101141	SHERBURNE WPCF	POTW	0.31	0.08	8.9	8.3	7.7	10	16	10

NOTES:

1) italics = estimated load based on average conc & flow from other years, or if no data for any years, assumed concentration of 19.6 mg/L.

2) The loads represent annual totals, based on annual daily average flow and daily average nitrogen concentration.

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4) This summary only includes POTWs and Industrial sources for which there was nitrogen monitoring at the outfalls for treated effluent and/or process wastewater.

Appendix D

EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS

This regional interpretative statement provides notice to the public of EPA Region 1's interpretation of the Clean Water Act ("CWA" or "Act") and implementing regulations, and advises the public of relevant policy considerations, regarding the applicability of the National Pollutant Discharge Elimination System ("NPDES") program to publicly owned treatment works ("POTWs") that include municipal satellite sewage collection systems ("regionally integrated POTWs"). When issuing NPDES permits to these types of sanitary sewer systems, it is EPA Region 1's practice to include and regulate the owners/operators of the municipal satellite collection systems through a co-permitting structure. This interpretative statement is intended to explain, generally, the basis for this practice. EPA Region 1's decision in any particular case will be made by applying the law and regulations on the basis of specific facts when permits are issued.

EPA has set out a national policy goal for the nation's sanitary sewer systems to adhere to strict design and operational standards:

> "Proper [operation and maintenance] of the nation's sewers is integral to ensuring that wastewater is collected, transported, and treated at POTWs; and to reducing the volume and frequency of …[sanitary sewer overflow] discharges. Municipal owners and operators of sewer systems and wastewater treatment facilities need to manage their assets effectively and implement new controls, where necessary, as this infrastructure continues to age. Innovative responses from all levels of government and consumers are needed to close the gap."[1]

Because ownership/operation of a regionally integrated POTW is divided among multiple parties, the owner/operator of the treatment plant many times lacks the means to implement comprehensive, system-wide operation and maintenance ("O & M") procedures. Failure to properly implement O & M measures in a POTW can cause, among other things, excessive extraneous flow (*i.e.*, inflow and infiltration) to enter, strain and occasionally overload treatment system capacity. This failure not only impedes EPA's national policy goal concerning preservation of the nation's wastewater infrastructure assets, but also frustrates achievement of the water quality- and technology-based requirements of CWA § 301 to the extent it results in sanitary sewer overflows and degraded treatment plant performance, with adverse impacts on human health and the environment.

In light of these policy objectives and legal requirements, it is EPA Region 1's permitting practice to subject all portions of the POTW to NPDES requirements in order to ensure that the treatment system as a whole is properly operated and maintained and that human health and water quality impacts resulting from excessive extraneous flow are minimized. The approach of addressing O&M concerns in a regionally integrated treatment works by adding municipal

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[1] *See Report to Congress: Impacts and Control of CSOs and SSOs* (EPA 833-R-04-001) (2004), at p. 10-2. *See also* "1989 National CSO Control Strategy," 54 Fed. Reg. 37371 (September 8, 1989).

satellite collection systems as co-permittees is consistent with the definition of "publicly owned treatment works," which by definition includes sewage collection systems. Under this approach, the POTW in its entirety is subject to NPDES regulation as a point source discharger under the Act. This entails imposition of permitting requirements applicable to the POTW treatment plant along with a more limited set of conditions applicable to the connected municipal satellite collection systems.

The factual and legal basis for the Region's position is set forth in greater detail in *Attachment A*.

Attachment A

ANALYSIS SUPPORTING EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS

Exhibit A	List of regional centralized POTW treatment plants and municipal satellite collection systems subject to the co-permittee policy
Exhibit B	Analysis of extraneous flow trends for representative systems
Exhibit C	List of municipal satellite collection systems that have had SSOs
Exhibit D	Form of Regional Administrator's waiver of permit application requirements for municipal satellite collection systems

Introduction

On May 28, 2010, the U.S. EPA Environmental Appeals Board ("Board") issued a decision remanding to the Region certain NPDES permit provisions that included and regulated satellite collection systems as co-permittees. *See In re Upper Blackstone Water Pollution Abatement District*, NPDES Appeal Nos. 08-11 to 08-18 & 09-06, 14 E.A.D. __ (*Order Denying Review in Part and Remanding in Part*, EAB, May 28, 2010).[2] While the Board "did not pass judgment" on the Region's position that its NPDES jurisdiction encompassed the entire POTW and not only the treatment plant, it held that "where the Region has abandoned its historical practice of limiting the permit only to the legal entity owning and operating the wastewater treatment plant, the Region had not sufficiently articulated in the record of this proceeding the statutory, regulatory, and factual bases for expanding the scope of NPDES authority beyond the treatment plant owner/operator to separately owned/operated collection systems that do not discharge directly to waters of the United States, but instead that discharge to the treatment plant." *Id.*, *slip op.* at 2, 18. In the event the Region decided to include and regulate municipal satellite collection systems as co-permittees in a future permit, the Board posed several questions for the Region to address in the analysis supporting its decision:

(1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?

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[2] The decision is available on the Board's website via the following link: http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument.

(2) If the latter, how far up the collection system does NPDES jurisdiction reach, *i.e.*, where does the "collection system" end and the "user" begin?

(3) Do municipal satellite collection systems "discharge [ ] a pollutant" within the meaning of the statute and regulations?

(4) Are municipal satellite collection systems "indirect dischargers" and thus excluded from NPDES permitting requirements?

(5) Is the Region's rationale for regulating municipal satellite collection systems as co-permittees consistent with the references to "municipality" in the regulatory definition of POTW, and the definition's statement that "[t]he term also means the municipality…which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works"?

(6) Is the Region's rationale consistent with the permit application and signatory requirements under NPDES regulations?

See *Blackstone, slip op.* at 18, 20, n. 17.

This regional interpretative statement is, in part, a response to the Board's decision. It details the legal and policy bases for regulating as co-permittees publicly owned treatment works ("POTWs") that include municipal satellite collection systems. Region 1's analysis is divided into five sections. First, the Region provides context for the co-permitting approach by briefly describing the health and environmental impacts associated with poorly maintained sanitary sewer systems. Second, the Region outlines its evolving permitting practice regarding regionally integrated POTWs, particularly its attempts to ensure that such entity's municipal satellite collection systems are properly maintained and operated. Third, the Region explains the legal authority to include municipal satellite collection systems as co-permittees when permitting regionally integrated POTWs. In this section, the Region answers the questions posed by the Board in the order presented above. Fourth, the Region sets forth the basis for the specific conditions to which the municipal satellite collection systems are subject as co-permittees. Finally, the Region discusses other considerations informing its decision to employ a co-permittee structure when permitting regionally integrated POTWs.

I. Background

A sanitary sewer system (SSS) is a wastewater collection system owned by a state or municipality that is designed to collect and convey only sanitary wastewater (domestic sewage from homes as well as industrial and commercial wastewater).[3] The purpose of these systems is

[3] A combined sewer, on the other hand, is a type of sewer system that collects and conveys sanitary sewage and stormwater runoff in a single-pipe system to a POTW treatment plant. *See generally* Report to Congress: Impacts and Control of CSOs and SSOs (EPA 833-R-04-001) (2004), from which EPA Region 1 has drawn this background material.

to transport wastewater uninterrupted from its source to a treatment facility. Developed areas that are served by sanitary sewers often also have a separate storm sewer system (*e.g.*, storm drains) that collects and conveys runoff, street wash waters and drainage and discharges them directly to a receiving water (*i.e.*, without treatment at a POTW). While sanitary sewers are not designed to collect large amounts of runoff from precipitation events or provide widespread drainage, they typically are built with some allowance for higher flows that occur during periods of high groundwater and storm events. They are thus able to handle minor and controllable amounts of extraneous flow (*i.e.*, inflow and infiltration, or I/I) that enter the system. Inflow generally refers to water other than wastewater—typically precipitation like rain or snowmelt—that enters a sewer system through a direct connection to the sewer. Infiltration generally refers to other water that enters a sewer system from the ground, for example through defects in the sewer.

Municipal sanitary sewer collection systems can consist of a widespread network of pipes and associated components (*e.g.*, pump stations). These systems provide wastewater collection service to the community in which they are located. In some situations, the municipality that owns the collector sewers may not provide treatment of wastewater, but only conveys its wastewater to a collection system that is owned and operated by a different municipal entity (such as a regional sewer district). This is known as a satellite community. A "satellite" community is a sewage collection system owner/operator that does not have ownership of the treatment facility and a specific or identified point of discharge but rather the responsibility to collect and convey the community's wastewater to a POTW treatment plant for treatment. *See* 75 Fed. Reg. 30395, 30400 (June 1, 2010).

Municipal sanitary sewer collection systems play a critical role in protecting human health and the environment. Proper operation and maintenance of sanitary sewer collection systems is integral to ensuring that wastewater is collected, transported, and treated at POTW treatment plants. Through effective operation and maintenance, collection system operators can maintain the capacity of the collection system; reduce the occurrence of temporary problem situations such as blockages; protect the structural integrity and capacity of the system; anticipate potential problems and take preventive measures; and indirectly improve treatment plant performance by minimizing deterioration due to I/I-related hydraulic overloading.

Despite their critical role in the nation's infrastructure, many collection systems exhibit poor performance and are subjected to flows that exceed system capacity. Untreated or partially treated overflows from a sanitary sewer system are termed "sanitary sewer overflows" (SSOs). SSOs include releases from sanitary sewers that reach waters of the United States as well as those that back up into buildings and flow out of manholes into city streets.

There are many underlying reasons for the poor performance of collection systems. Much of the nation's sanitary sewer infrastructure is old, and aging infrastructure has deteriorated with time. Communities also sometimes fail to provide capacity to accommodate increased sewage delivery and treatment demand from increasing populations. Furthermore, institutional arrangements relating to the operation of sewers can pose barriers to coordinated action, because many

municipal sanitary sewer collection systems are not entirely owned or operated by a single municipal entity.

The performance and efficiency of municipal collection systems influence the performance of sewage treatment plants. When the structural integrity of a sanitary sewer collection system deteriorates, large quantities of infiltration (including rainfall-induced infiltration) and inflow can enter the collection system, causing it to overflow. These extraneous flows are among the most serious and widespread operational challenges confronting treatment works.[4]

Infiltration can be long-term seepage of water into a sewer system from the water table. In some systems, however, the flow characteristics of infiltration can resemble those of inflow, *i.e.*, there is a rapid increase in flow during and immediately after a rainfall event, due, for example, to rapidly rising groundwater. This phenomenon is sometimes referred to as rainfall-induced infiltration.

Sanitary sewer systems can also overflow during periods of normal dry weather flows. Many sewer system failures are attributable to natural aging processes or poor operation and maintenance. Examples include years of wear and tear on system equipment such as pumps, lift stations, check valves, and other moveable parts that can lead to mechanical or electrical failure; freeze/thaw cycles, groundwater flow, and subsurface seismic activity that can result in pipe movement, warping, brittleness, misalignment, and breakage; and deterioration of pipes and joints due to root intrusion or other blockages.

Inflow and infiltration impacts are often regional in nature. Satellite collection systems in the communities farthest from the POTW treatment plant can cause sanitary sewer overflows ("SSOs") in communities between them and the treatment plant by using up capacity in the interceptors. This can cause SSOs in the interceptors themselves or in the municipal sanitary sewers that lead to them. The implication of this is that corrective solutions often must also be regional in scope to be effective.

The health and environmental risks attributed to SSOs vary depending on a number of factors including location and season (potential for public exposure), frequency, volume, the amount and type of pollutants present in the discharge, and the uses, conditions, and characteristics of the receiving waters. The most immediate health risks associated with SSOs to waters and other areas with a potential for human contact are associated with exposure to bacteria, viruses, and other pathogens.

Human health impacts occur when people become ill due to contact with water or ingestion of water or shellfish that have been contaminated by SSO discharges. In addition, sanitary sewer systems can back up into buildings, including private residences. These discharges provide a

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[4] In a 1989 Water Pollution Control Federation survey, 1,003 POTWs identified facility performance problems. Infiltration and inflow was the most frequently cited problem, with 85 percent of the facilities reporting I/I as a problem. I/I was cited as a major problem by 41 percent of the facilities (32 percent as a periodic problem). [BP: Is there anything more recent?]

direct pathway for human contact with untreated wastewater. Exposure to land-based SSOs typically occurs through the skin via direct contact. The resulting diseases are often similar to those associated with exposure through drinking water and swimming (*e.g.*, gastroenteritis), but may also include illness caused by inhaling microbial pathogens. In addition to pathogens, raw sewage may contain metals, synthetic chemicals, nutrients, pesticides, and oils, which also can be detrimental to the health of humans and wildlife.

II. EPA Region 1 Past Practice of Permitting POTWs that Include Municipal Satellite Collection Systems

EPA Region 1's practice in permitting regionally integrated POTWs has developed in tandem with its increasing focus on addressing I/I in sewer collection systems, in response to the concerns outlined above. Up to the early 1990s, POTW permits issued by Region 1 generally did not include specific requirements for collection systems. When I/I and the related issue of SSOs became a focus of concern both nationally and within the region in the mid-1990s, Region 1 began adding general requirements to POTW permits that required the permittees to "eliminate excessive infiltration and inflow" and provide an annual "summary report" of activities to reduce I/I. As the Region gathered more information and gained more experience in assessing these reports and activities, it began to include more detailed requirements and reporting provisions in these permits.

MassDEP also engaged in a parallel effort to address I/I, culminating in 2001 with the issuance of MassDEP Policy No. BRP01-1, "Interim Infiltration and Inflow Policy." Among other provisions, this policy established a set of standard NPDES permit conditions for POTWs that included development of an I/I control plan (including funding sources, identification and prioritization of problem areas, and public education programs) and detailed annual reporting requirements (including mapping, reporting of expenditures and I/I flow calculations). Since September 2001, these requirements have been the basis for the standard operation and maintenance conditions related to I/I.

Regional treatment plants presented special issues as I/I requirements became more specific, as it is generally the member communities, rather than the regional sewer district, that own the collection systems that are the primary source of I/I. Before the focus on I/I, POTW permits did not contain specific requirements related to the collection system component of POTWs. Therefore, when issuing NPDES permits to authorize discharges from regionally integrated treatment POTWs, EPA Region 1 had generally only included the legal entity owning and/or operating the regionally centralized wastewater treatment plant. As the permit conditions were focused on the treatment plant itself, this was sufficient to ensure that EPA had authority to enforce the permit requirements.

In implementing the I/I conditions, Region 1 initially sought to maintain the same structure, placing the responsibility on the regional sewer district to require I/I activities by the contributing systems and to collect the necessary information from those systems for submittal to EPA. MassDEP's 2001 Interim I/I Policy reflected this approach, containing a condition for regional systems:

> ((FOR REGIONAL FACILITIES ONLY)) The permittee shall require, through appropriate agreements, that all member communities develop and implement infiltration and inflow control plans sufficient to ensure that high flows do not cause or contribute to a violation of the permittees effluent limitations, or cause overflows from the permittees collection system.

As existing NPDES permittees, the POTW treatment plants were an obvious locus of regulation. The Region assumed the plants would be in a position to leverage preexisting legal and/or contractual relationships with the satellite collection systems they serve to perform a coordinating function, and that utilizing this existing structure would be more efficient than establishing a new system of direct reporting to EPA by the collection system owners. The Region also believed that the owner/operator of the POTW treatment plant would have an incentive to reduce flow from contributing satellite systems because doing so would improve treatment plant performance and reduce operation costs. While relying on this cooperative approach, however, EPA Region 1 also asserted that it had the authority to require that POTW collection systems be included as NPDES permittees and that it would do so if it proved necessary. Indeed, in 2001 Region 1 acceded to Massachusetts Water Resources Authority's ("MWRA") request that the contributing systems to the MWRA Clinton wastewater treatment plant ("WWTP") be included as co-permittees, based on evidence provided by MWRA that its specific relationship with those communities would not permit it to run an effective I/I reduction program for these collection systems. EPA Region 1 also put satellite collection systems on notice that they would be directly regulated through legally enforceable permit requirements if I/I reductions were not pursued or achieved.

In time, the Region realized that its failure to assert direct jurisdiction over municipal satellite dischargers was becoming untenable in the face of mounting evidence that cooperative (or in some cases non-existent) efforts on the part of the POTW treatment plant and associated satellites were failing to comprehensively address the problem of extraneous flow entering the POTW. The ability and/or willingness of regional sewer districts to attain meaningful I/I efforts in their member communities varied widely. The indirect structure of the requirements also tended to make it difficult for EPA to enforce the implementation of meaningful I/I reduction programs.

It became evident to EPA Region 1 that a POTW's ability to comply with CWA requirements depended on successful operation and maintenance of not only the treatment plant but also the collection system. For example, the absence of effective I/I reduction and operation/maintenance programs was impeding the Region's ability to prevent or mitigate the human health and water quality impacts associated with SSOs. *See Exhibit B* (Municipal satellite collection systems with SSOs). Additionally, these excess flows stressed POTW treatment plants from a hydraulic capacity and performance standpoint, adversely impacting effluent quality. *See Exhibit C* (Analysis of extraneous flow trends for representative systems). Addressing these issues in regional systems was essential, as these include most of the largest systems in terms of flow, population served and area covered, and serve the largest population centers.

The Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator represents a necessary and logical progression in its continuing effort to effectively address the serious problem of I/I in sewer collection systems.[5] In light of its past permitting experience and the need to effectively address the problem of extraneous flow on a system-wide basis, Region 1 decided that it was necessary to refashion permits issued to regionally integrated POTWs to encompass all owners/operators of the treatment works (*i.e.*, the regional centralized POTW treatment plant and the municipal satellite collection systems.[6] Specifically, Region 1 determined that the satellite systems should be subject as co-permittees to a limited set of O&M-related conditions on permits issued for discharges from regionally integrated treatment works. These conditions pertain only to the portions of the POTW collection system that the satellites own. This ensures maintenance and pollution control programs are implemented with respect to all portions of the POTW. Accordingly, since 2005, Region 1 has generally included municipal satellite collection systems as co-permittees for limited purposes, in addition to the owner/operator of the treatment plant as the main permittee subject to the full array of NPDES requirements, including secondary treatment and water-quality based effluent limitations. The Region has identified 25 permits issued by the Region to POTWs in New Hampshire and Massachusetts that include municipal satellite collection systems as co-permittees. *See Exhibit A*. The 25 permits include a total of 55 satellite collection systems as co-permittees.

III. Legal Authority

The Region's prior and now superseded practice of limiting the permit only to the legal entity owning and/or operating the wastewater treatment plant had never been announced as a regional policy or interpretation. Similarly, the Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator has also never been expressly announced as a uniform, region-wide policy or interpretation. Upon consideration of the Board's decision, described above, EPA Region 1 has decided to supply a clearer, more detailed explanation regarding its use of a co-permittee structure when issuing NPDES permits to regionally integrated POTWs. In this section, the Region addresses the questions posed by the Board in the *Upper Blackstone* decision referenced above.

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[5] Although EPA Region 1 has in the past issued NPDES permits only to the legal entities owning and operating the wastewater treatment plant (*i.e.*, only a portion of the "treatment works"), the Region's reframing of permits to include municipal satellite collection systems does not represent a break or reversal from its historical legal position. EPA Region 1 has never taken the legal position that the satellite collection systems are beyond the reach of the CWA and the NPDES permitting program. Rather, the Region as a matter of discretion had merely never determined it necessary to exercise its statutory authority to directly reach these facilities in order to carry out its NPDES permitting obligations under the Act.

[6] EPA has "considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges." *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C.Cir.1977). ("[T]his ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.").

(1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?

The scope of NPDES authority extends beyond the owners/operators of the treatment plant to include to owners/operators of portions of the wider POTW, for the reasons discussed below.

The CWA prohibits the "discharge of any pollutant by any person" from any point source to waters of the United States, except, *inter alia,* in compliance with an NPDES permit issued by EPA or an authorized state pursuant to Section 402 of the CWA. CWA § 301, 402(a)(1); 40 C.F.R. § 122.1(b). Where there is a discharge of pollutants, NPDES regulations require the "operator" of the discharging "facility or activity" to obtain a permit in circumstances where the operator is different from the owner. *Id.* § 122.21(b). "Owner or operator" is defined as "the owner or operator of any 'facility or activity' subject to regulation under the NPDES program," and a "facility or activity" is "any NPDES 'point source' or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program." *Id.* § 122.2.

"Publicly owned treatment works" are facilities subject to the NPDES program. Statutorily, POTWs as a class must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 402(a)(1) ("[t]he Administrator may…issue a permit for the discharge of any pollutant….upon condition that such discharge will meet (A) all applicable requirements under [section 301]…"); § 301(b)(1)(B) ("In order to carry out the objective of this chapter there shall be achieved…for publicly owned treatment works in existence on July 1, 1977...effluent limitations based upon secondary treatment[.]"); *see also* 40 C.F.R. pt 133. In addition to secondary treatment requirements, POTWs are also subject to water quality-based effluent limits if necessary to achieve applicable state water quality standards. *See* CWA § 301(b)(1)(C). *See also* 40 C.F.R. § 122.44(a)(1) ("…each NPDES permit shall include…[t]echnology-based effluent limitations based on: effluent limitations and standards published under section 301 of the Act") and (d)(1) (same for water quality standards and state requirements). NPDES regulations similarly identify the "POTW" as the entity subject to regulation. *See* 40 C.F.R. § 122.21(a), (requiring "new and existing POTWs" to submit information required in 122.21(j)," which in turn requires "all POTWs," among others, to provide permit application information).

A municipal satellite collection system is part of a POTW under applicable law. The CWA and its implementing regulations broadly define "POTW" to include not only wastewater treatment plants but also the sewer systems and associated equipment that collect wastewater and convey it to the plants. Under NPDES regulations at 40 C.F.R. §§ 122.2 and 403.3(q), the term "Publicly Owned Treatment Works" or "POTW" means "a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act)." Under section 212 of the Act,

> "(2)(A) The term 'treatment works' means any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid

> nature to implement section 1281 of this title, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, *sewage collection systems* [emphasis added], pumping, power, and other equipment, and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land used for the storage of treated wastewater in land treatment systems prior to land application) or is used for ultimate disposal of residues resulting from such treatment.
>
> (B) In addition to the definition contained in subparagraph (A) of this paragraph, 'treatment works' means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including storm water runoff, or industrial waste, including waste in combined storm water and *sanitary sewer systems* [emphasis added]. Any application for construction grants which includes wholly or in part such methods or systems shall, in accordance with guidelines published by the Administrator pursuant to subparagraph (C) of this paragraph, contain adequate data and analysis demonstrating such proposal to be, over the life of such works, the most cost efficient alternative to comply with sections 1311 or 1312 of this title, or the requirements of section 1281 of this title."

Under the NPDES program regulations, this definition has been interpreted as follows:

> "The term *Publicly Owned Treatment Works* or *POTW* [emphasis in original]…includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works."

See 40 C.F.R. § 122.2, cross-referencing 403.3(q).

The statutory and regulatory definitions plainly encompass both the POTW treatment plant and municipal satellite collection systems. Municipal satellite collection systems are part of a POTW by definition (*i.e.*, they are "sewage collection systems" under section 212(A) and "sanitary sewer systems" under section 212(B)). They are also conveyances that send wastewater to a POTW treatment plant for treatment under 40 C.F.R. 403.3(q)). The preamble to the rule that created the regulatory definition of POTW supports the reading that the treatment plant comprises only a portion of the POTW. *See* 44 Fed. Reg. 62260, 62261 (Oct. 29, 1979).[7]

[7] "A new provision…defining the term 'POTW Treatment Plant' has been added to avoid an ambiguity that now exists whenever a reference is made to a POTW (publicly owned treatment works). …[T]he existing regulation defines a POTW to include both the treatment plant and the sewer pipes and other conveyances leading to it. As a result, it is unclear whether a particular reference is to the pipes, the treatment plant, or both. The term "POTW

Consistent with EPA Region 1's interpretation, courts have similarly taken a broad reading of the terms treatment works and POTW.[8]

(2) If the latter, how far up the collection system does NPDES jurisdiction reach, i.e., where does the "collection system" end and the "user" begin?

NPDES jurisdiction extends beyond the treatment plant to the outer boundary of the municipally-owned sewage collection systems, which are defined as sewers whose purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment, as explained below.

As discussed in response to Question 1 above, the term "treatment works" is defined to include "sewage collection systems." CWA § 212. In order to define the extent of the sewage collection system for purposes of co-permittee regulation—*i.e.*, to identify the boundary between the portions of the collection system that are subject to NPDES requirements and those that are not—Region 1 is relying on EPA's regulatory interpretation of the term "sewage collection system." In relevant part, EPA regulations define "sewage collection system" at 40 C.F.R. § 35.905 as:

> ".... each, and all, of the common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive waste waters directly from facilities which convey waste water from individual structures or from private property and which include service connection "Y" fittings designed for connection with those facilities. The facilities which convey waste water from individual structures, from private property to the public lateral sewer, or its equivalent, are specifically excluded from the definition…."

Put otherwise, a municipal satellite collection system is subject to NPDES jurisdiction under the Region's approach insofar as its purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment. The use of this primary purpose test (i.e., common sewer installed as a recipient and carrier waste water from others) allows Region 1 to draw a principled, predictable and readily ascertainable boundary between the POTW's collection system and user. This test would exclude, for example, branch drainpipes that collect and transport wastewater from fixtures in a commercial building or public school to the common lateral sewer. This type

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treatment plant" will be used to designate that portion of the municipal system which is actually designed to provide treatment to the wastes received by the municipal system."

[8] *See, e.g., United States v. Borowski, 977 F.2d 27, 30 n.5* (1st Cir. 1992) ("We read this language [POTW definition] to refer to such sewers, pipes and other conveyances that are publicly owned. Here, for example, the City of Burlington's sewer is included in the definition because it conveys waste water to the Massachusetts Water Resource Authority's treatment works."); *Shanty Town Assoc. v. Envtl. Prot. Agency, 843 F.2d 782, 785* (4th Cir. 1988) ("As defined in the statute, a 'treatment work' need not be a building or facility, but can be any device, system, or other method for treating, recycling, reclaiming, preventing, or reducing liquid municipal sewage and industrial waste, including storm water runoff.") (citation omitted); *Comm. for Consideration Jones Fall Sewage System v. Train*, 375 F. Supp. 1148, 1150-51 (D. Md. 1974) (holding that NPDES wastewater discharge permit coverage for a wastewater treatment plant also encompasses the associated sanitary sewer system and pump stations under § 1292 definition of "treatment work").

of infrastructure would not be considered part of the collection system, because it is not designed to be a common recipient and carrier of wastewaters from other users. Rather, it is designed to transport its users' wastewater to such a common collection system at a point further down the sanitary sewer system.

EPA's reliance on the definition of "sewage collection system" from outside the NPDES regulations for interpretative guidance is reasonable as the construction grants regulations at 40 C.F.R. Part 35, subpart E pertain to grants for POTWs, the entity that is the subject of this NPDES policy. Additionally, the term "sewage collection systems" expressly appears in the definition of treatment works under section 212 of the Act as noted above. Finally, this approach is also consistent with EPA's interpretation in other contexts, such as the SSO listening session notice, published in the Federal Register on June 1, 2010, which describes wastewater collection systems as those that "collect domestic sewage and other wastewater from homes and other buildings and convey it to wastewater sewage treatment plants for proper treatment and disposal." *See* "Municipal Sanitary Sewer Collection Systems, Municipal Satellite Collection Systems, Sanitary Sewer Overflows, and Peak Wet Weather Discharges From Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems," 75 Fed. Reg. 30395.[9]

(3) Do municipal satellite collection systems "discharge [] a pollutant" within the meaning of the statute and regulations?

Yes, because they are a part of the POTW, municipal satellite collection systems discharge pollutants to waters of the United States through one or more outfalls (point sources).

The "discharge of a pollutant," triggers the need for a facility to obtain an NPDES permit. A POTW "discharges [ ] pollutant[s]" if it adds pollutants from a point source to waters of the U.S. (See 40 C.F.R. § 122.2, section (a) of the definition of "discharge of a pollutant.") As explained above, municipal satellite collection systems are part of the POTW. The entire POTW is the entity that discharges pollutants to waters of the U.S. through point source outfalls typically located at the treatment plant but also occasionally through other outfalls within the overall system. The fact that a collection system may be located in the upstream portions of the POTW and not necessarily near the ultimate discharge point at the treatment plant is not material to the question of whether it "discharges" a pollutant and consequently may be subject to conditions of an NPDES permit issued for discharges from the POTW. [10]

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[9] That EPA has in the past looked for guidance from Part 35 when construing the NPDES permitting program, for instance, in the context of storm water permitting, provides further support to the Region that its practice in this regard is sound. *See, e.g.*, "National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges," 55 Fed. Reg. 47990, 47955 (looking to the definition of "storm sewer" at 40 C.F.R. § 35.2005(b)(47) when defining "storm water" under the NDPES program).

[10] This position differs from that taken by the Region in the *Upper Blackstone* litigation. There, the Region argued that the treatment plant was the sole discharging entity for regulatory purposes. The Region has revised this view upon further consideration of the statute, regulations and case law and determined that the POTW as a whole is the discharging entity.

"Discharge of a pollutant" at 40 C.F.R. § 122.2 is also defined to include "… discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person *which do not lead to a treatment works.*"(emphasis added). Some municipal collection systems have argued that this sentence means that only municipal discharges that do not lead to a "treatment plant" fall within the scope of "discharge of a pollutant." They further argue that because discharges through satellite collection systems do lead to a treatment plant, such systems do not "discharge [] pollutant[s]" and therefore are not subject to the NPDES permit requirements. This argument is flawed in that it incorrectly equates "treatment works," the term used in the definition above, with "treatment plant." To interpret "treatment works" as it appears in the regulatory definition of "discharge of a pollutant" as consisting of only the POTW treatment plant would be inconsistent with the definition of "treatment works" at 40 C.F.R. § 403.3(q), which expressly includes the collection system. *See also* § 403.3(r) (defining "POTW Treatment Plant" as "*that portion* [emphasis added] of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste").

(4) Are municipal satellite collection systems "indirect dischargers" and thus excluded from NPDES permitting requirements?

No, municipal satellite collection systems are part of the POTW, not "indirect dischargers" to the POTW.

Section 307(b) of the Act requires EPA to establish regulatory pretreatment requirements to prevent the "introduction of pollutants into treatment works" that interfere, pass through or are otherwise incompatible with such works. Section 307 is implemented through the General Pretreatment Regulations for Existing and New Sources of Pollution (40 C.F.R. Part 403) and categorical pretreatment standards (40 C.F.R. Parts 405-471). Section 403.3(i) defines "indirect discharger" as "any non-domestic" source that introduces pollutants into a POTW and is regulated under pretreatment standards pursuant to CWA § 307(b)-(d). The source of an indirect discharge is termed an "industrial user." *Id*. at § 403.3(j). Under regulations governing the NPDES permitting program, the term "indirect discharger" is defined as "a non-domestic discharger introducing 'pollutants' to a 'publicly owned treatment works.'" 40 C.F.R. § 122.2. Indirect dischargers are excluded from NPDES permit requirements by the indirect discharger rule at 40 C.F.R. § 122.3(c), which provides, "The following discharges do not require an NPDES permit: . . . The introduction of sewage, industrial wastes or other pollutants into publicly owned treatment works by indirect dischargers."

Municipal satellite collection satellite systems are not indirect dischargers as that term is defined under part 122 or 403 regulations. Unlike indirect dischargers, municipal satellite collection systems are not "introducing pollutants" to POTWs under 40 C.F.R. § 122.2; they are, instead, part of the POTW by definition. Similarly, they are not a non-domestic *source* that introduces pollutants into a POTW within the meaning of § 403.3(j), but as part of the POTW collect and convey municipal sewage from industrial, commercial and domestic users of the POTW.

The Region's determination that municipal satellite collection systems are not indirect dischargers is, additionally, consistent with the regulatory history of the term indirect discharger.

The 1979 revision of the part 122 regulations defined "indirect discharger" as "a non-municipal, non-domestic discharger introducing pollutants to a publicly owned treatment works, which introduction does not constitute a 'discharge of pollutants'…" *See* National Pollutant Discharge Elimination System, 44 Fed. Reg. 32854, 32901 (June 7, 1979). The term "non-municipal" was removed in the Consolidated Permit Regulations, 45 Fed. Reg. 33290, 33421 (May 19, 1980) (defining "indirect discharger" as "a nondomestic discharger…"). Although the change was not explained in detail, the substantive intent behind this provision remained the same. EPA characterized the revision as "minor wording changes." 45 Fed. Reg. at 33346 (Table VII: "Relationship of June 7[, 1979] Part 122 to Today's Regulations"). The central point again is that under any past or present regulatory incarnation, municipal satellite collection systems, as POTWs, are not within the definition of "indirect discharger," which is limited to dischargers that introduce pollutants to POTWs.

The position that municipal satellite collection systems are part of, rather than discharge to, the POTW also is consistent with EPA guidance. EPA's 1994 Multijurisdictional Pretreatment Programs Guidance Manual, (EPA 833-B94-005) (June 1994), at p. 19, asserts that EPA has the authority to require municipal satellite collection systems to develop pretreatment programs by virtue of their being part of the POTW.

(5) How is the Region's rationale consistent with the references to "municipality" in the regulatory definition of POTW found at 40 C.F.R. § 403.3(q), and the definition's statement that "[t]he term also means the municipality….which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works?"

There is no inconsistency between the Region's view that municipally-owned satellite collection systems are part of a POTW, and the references to municipality in 40 C.F.R. § 403.3(q), including the final sentence of the regulatory definition of POTW in the pretreatment regulations.

The Region's co-permitting rationale is consistent with the first part of the pretreatment program's regulatory definition of POTW, because the Region is only asserting NPDES jurisdiction over satellite collection systems that are owned by a "State or municipality (as defined by section 502(4) of the Act)." The term "municipality" as defined in CWA § 502(4) "means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes…" Thus, in order to qualify under this definition, a wastewater collection system need only be "owned by a State or municipality." There is no requirement that the constituent components of a regionally integrated POTW, *i.e.*, the collection system and regional centralized POTW treatment plant, be owned by the same State or municipal entity.

Furthermore, there is no inconsistency between the Region's view that a satellite collection system is part of a POTW, and the final sentence of the regulatory definition of POTW in the pretreatment regulations. As noted above, the sentence provides that "POTW" may "also" mean a municipality which has jurisdiction over indirect discharges to and discharges from the treatment works. This is not a limitation because of the use of the word "also" (contrast this with the "only if" language in the preceding sentence of the regulatory definition).

(6) How does the Region's rationale comport with the permit application and signatory requirements under NPDES regulations?

EPA's authority to require municipal satellite collection systems to separately comply with the permit application requirements, or to provide waivers from these requirements where appropriate, is consistent with NPDES regulations, which provide that all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed, and municipal satellite collection systems are part of the POTW.

EPA has the authority to require municipal satellite collection systems to submit permit applications. These entities are operators of parts of the POTW. NPDES regulations characterize the operator "of the POTW" (which by definition includes the sewage collection system) as opposed to the operator "of the POTW treatment plant" as an appropriate applicant. *Id.* § 122.21(a), (requiring applicants for "new and existing POTWs" to submit information required in 122.21(j)," which in turn requires "all POTWs," among others, to provide permit application information). This reading of the regulation is in keeping with the statutory text, which subjects the POTW writ large to the secondary treatment and water quality-based requirements. *See* CWA § 301(b)(1)(B), (C). In fact, the NPDES permit application for POTWs solicits information concerning portions of the POTW beyond the treatment plant itself, including the collection system used by the treatment works. *See* 40 C.F.R. 122.21(j)(1).

Notwithstanding that EPA could require applications for all the municipal satellite collection systems, requiring such applications may result in duplicative or immaterial information. The Regional Administrator ("RA") may waive any requirement of this paragraph if he or she has access to substantially identical information. 40 C.F.R. § 122.21(j). *See generally*, 64 Fed. Reg. 42440 (August 4, 1999). The RA may also waive any application requirement that is not of material concern for a specific permit. Region 1 believes that it will typically receive information sufficient for NPDES permitting purposes from the POTW treatment plant operator's application.

In most cases, EPA Region 1 believes that having a single permit application from the POTW treatment plant operator will be more efficient in carrying out the regulation's intent than multiple applications from the satellite systems. (The treatment plant operator would of course be required to coordinate as necessary with the constituent components of the POTW to ensure that the information provided to EPA is accurate and complete). EPA Region 1 therefore intends to issue waivers to exempt municipal satellite collection systems from permit application and signatory requirements in accordance with 40 C.F.R. § 122.21(j). To the extent the Region requires additional information, it intends to use its information collection authority under CWA § 308.

IV. Basis for the Specific Conditions to which the Municipal Satellite Collection Systems are Subject as Co-permittees

The legal authority for extending NPDES conditions to all portions of the municipally-owned treatment works to ensure proper operation and maintenance and to reduce the quantity of extraneous flow into the POTW is Section 402(a) of the CWA. This section of the Act authorizes EPA to issue a permit for the "discharge of pollutants" and to prescribe permit conditions as necessary to carry out the provisions of the CWA, including Section 301 of the Act. Among other things, Section 301 requires POTWs to meet performance-based requirements based on secondary treatment technology, as well as any more stringent requirements of State law or regulation, including water quality standards. *See* CWA § 301(b)(1)(B),(C).

The co-permittee requirements are required to assure continued achievement of secondary treatment requirements and water quality standards in accordance with sections 301 and 402 of the Act and to prevent unauthorized discharges of sewage from collection systems. With respect to secondary treatment, the inclusion of the satellite systems as co-permittees is necessary because high levels of I/I dilute the strength of influent wastewater and increase the hydraulic load on treatment plants, which can reduce treatment efficiency (*e.g.*, result in violations of technology-based percent removal limitations for BOD and TSS due to less concentrated influent, or violation of other technology effluent limitations due to reduction in treatment efficiency), lead to bypassing a portion of the treatment process, or in extreme situations make biological treatment facilities inoperable (*e.g.*, wash out the biological organisms that treat the waste).

As to water quality standards, the addition of the satellite systems as co-permittees is necessary to ensure collection system operation and maintenance, which will reduce extraneous flow entering the system and free up available capacity. This will facilitate compliance with water quality-based effluent limitations—made more difficult by reductions in treatment efficiency and also reduce water quality standard violations that result from the occurrence of SSOs. *See Exhibits B* (Municipal satellite collection systems with SSOs) and *C* (Analysis of extraneous flow trends for representative systems). SSOs that reach waters of the U.S. are discharges in violation of section 301(a) of the CWA to the extent not authorized by an NPDES permit.

Subjecting portions of an NPDES-regulated entity upstream of the ultimate discharge point is consistent with EPA's interpretation of the CWA in other contexts. For example, it is well established that EPA has the ability to apply discharge limitations and monitoring requirements to internal process discharges, rather than to outfalls, on the grounds that compliance with permit limitations "may well involve controls applied at points other than the ultimate point of discharge." *See Decision of the General Counsel No. 27 (In re Inland Steel Company)*, August 4, 1975 ("Limitations upon internal process discharges are proper, if such discharges would ultimately be discharged into waters of the United States, and if such limitations are necessary to carry out the principal regulatory provisions of the Act."). In the case of regionally integrated POTWs, placing conditions on satellite collection systems—though located farther up the system than the point of discharge—is a logical implication of the regulations and serves to effectuate the statute.

Without imposing conditions on the satellite communities, standard permit conditions applicable to all NPDES permits by regulation cannot be given full effect. To illustrate, there is no dispute

that the operator of the POTW treatment plant and outfall is discharging pollutants within the meaning the CWA and, accordingly, is subject to the NPDES permit program. NPDES permitting regulations require standard conditions that "apply to all NPDES permits," pursuant to 40 C.F.R. § 122.41, including a duty to mitigate and to properly operate and maintain "all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit." *Id.* at § 122.41(d), (e). EPA regulations also require additional conditions applicable to specified categories of NPDES permit, including "Publicly owned treatment works." *See id.* at § 122.42(b). A municipal satellite collection system, as demonstrated above, falls within the regulatory definition of a POTW. In light of EPA's authority to require appropriate operation and maintenance of collection systems necessary to achieve compliance with an NPDES permit, and because the operator of the POTW treatment plant may not own or operate a significant portion of the wider treatment works (*i.e.*, the collection systems that send flow to the POTW treatment plant), it is appropriate, and in some cases necessary, to extend pertinent, mandated standard conditions to all portions of the POTW, which is subject to regulation in its entirety. The alternative of allowing state and local jurisdictional boundaries to place significant portions of the POTW beyond the reach of the NPDES permitting program would not only be inconsistent with the broad statutory and regulatory definition of the term POTW but would impede Region 1 from carrying out the objectives of the CWA. It would also, illogically, preclude the Region from imposing on POTWs standard conditions EPA has by regulation mandated for those entities.

Other Considerations Informing EPA Region 1's Decision to Use a Co-permittee Permitting Structure for Regionally Integrated POTWs

In addition to consulting the relevant statutes, regulations, and preambles, Region 1 also considered other EPA guidance in coming to its determination to employ a co-permittee structure for regionally integrated POTWs. EPA's 1994 Multijurisdictional Pretreatment Programs Guidance Manual, p. 19, asserts that EPA has the authority to include municipal satellite collection systems as co-permittees by virtue of their being part of the POTW:

> If the contributing jurisdiction owns or operates the collection system within its boundaries, then it is a co-owner or operator of the POTW. As such, it can be included on the POTW's NPDES permit and be required to develop a pretreatment program. Contributing jurisdictions should be made co-permittees where circumstances or experience indicate that it is necessary to ensure adequate pretreatment program implementation.

The same logic that led EPA to conclude it had authority to require municipal satellite collection systems to develop a pretreatment program pursuant to an NPDES permit supports EPA Region 1's decision to impose permit conditions on such facilities to undertake proper O & M and to reduce inflow and infiltration.

EPA Region 1 also took notice of federal listening session materials on the June 2010 proposed SSO rule and associated model permits and fact sheet. The position articulated by EPA in these

model documents—specifically the application of standard NPDES conditions to municipal satellite collection systems—generally conform to Region 1's co-permitting approach.

Finally, in addition to federal requirements, EPA Region 1 considered the co-permittee approach in light of state regulations and policy pertaining to wastewater treatment works. The Region found its approach to be consistent with such requirements. Under Massachusetts law, "Any person operating treatment works shall maintain the facilities in a manner that will ensure proper operation of the facilities or any part thereof," where "treatment works" is defined as "any and all devices, processes and properties, real or personal, used in the collection, pumping, transmission, storage, treatment, disposal, recycling, reclamation or reuse of waterborne pollutants, but not including any works receiving a hazardous waste from off the site of the works for the purpose of treatment, storage or disposal, or industrial wastewater holding tanks regulated under 314 CMR 18.00" *See* 314 CMR 12.00 ("Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers"). MassDEP has also prioritized this area, issuing detailed operation and maintenance guidelines entitled "Optimizing Operation, Maintenance and Rehabilitation of Sanitary Sewer Collection Systems."

Exhibit A

Name	Issue Date
Massachusetts Water Resources Authority – Clinton (NPDES Permit No. MA0100404)	September 27, 2000
City of Brockton (NPDES Permit No. MA0101010)	May 11, 2005
City of Marlborough (NPDES Permit No. MA0100480)	May 26, 2005
Westborough Wastewater Treatment Plant (NPDES Permit No. MA0100412)	May 20, 2005
Lowell Regional Wastewater Utilities (NPDES Permit No. MA0100633)	September 1, 2005
Town of Webster Sewer Department (NPDES Permit No. MA0100439)	March 24, 2006
Town of South Hadley, Board of Selectmen (NPDES Permit No. MA0100455)	June 12, 2006
City of Leominster (NPDES Permit No. MA0100617)	September 28, 2006
Hoosac Water Quality District (NPDES Permit No. MA0100510)	September 28, 2006
Board of Public Works, North Attleborough (NPDES Permit No. MA0101036)	January 4, 2007
Town of Sunapee (NPDES Permit No. 0100544)	February 21, 2007
Lynn Water and Sewer Commission (NPDES Permit No. MA0100552)	March 3, 2007
City of Concord (NPDES Permit No. NH0100331)	June 29, 2007
City of Keene (NPDES Permit No. NH0100790)	August 24, 2007
Town of Hampton (NPDES No. NH0100625)	August 28, 2007
Town of Merrimack, NH (NPDES No. NH0100161)	September 25, 2007
City of Haverhill (NPDES Permit No. MA0101621)	December 5, 2007
Greater Lawrence Sanitary District (NPDES Permit No. MA0100447)	August 11, 2005

City of Pittsfield, Department of Public Works (NPDES No. MA0101681)	August 22, 2008
City of Manchester (NPDES No. NH0100447)	September 25, 2008
City of New Bedford (NPDES Permit No. MA0100781)	September 28, 2008
Winnipesaukee River Basin Program Wastewater Treatment Plant (NPDES Permit No. NH0100960)	June 19, 2009
City of Westfield (NPDES Permit No. MA0101800)	September 30, 2009
Hull Permanent Sewer Commission (NPDES Permit No. MA0101231)	September 1, 2009
Gardner Department of Public Works (NPDES Permit No. MA0100994)	September 30, 2009

Exhibit B

I/I Flow Analysis for Sample Regional Publicly Owned Treatment Works

I. Representative POTWS

The **South Essex Sewer District (SESD)** is a regional POTW with a treatment plant in Salem, Massachusetts. The SESD serves a total population of 174,931 in six communities: Beverly, Danvers, Marblehead, Middleton, Peabody and Salem. The **Charles River Pollution Control District (CRPCD)** is a regional POTW with a treatment plant in Medway, Massachusetts. The CRPCD serves a total population of approximately 28,000 in four communities: Bellingham, Franklin, Medway and Millis. Both of these facilities have been operating since 2001 under permits that place requirements on the treatment plant to implement I/I reduction programs with the satellite collection systems, in contrast to Region 1's current practice of including the satellite collection systems as co-permittees.

II. Comparison of flows to standards for nonexcessive infiltration and I/I

Flow data from the facilities' discharge monitoring reports (DMRs) are shown in comparison to the EPA standard for nonexcessive infiltration/inflow (I/I) of 275 gpcd wet weather flow and the EPA standard for nonexcessive infiltration of 120 gallons per capita per day (gpcd) dry weather flow; the standards are multiplied by population served for comparison with total flow from the facility. See *I/I Analysis and Project Certification*, EPA Ecol. Pub. 97-03 (1985); 40 CFR 35.2005(b)(28) and (29).

Figures 1 and 2 show the Daily Maximum Flows (the highest flow recorded in a particular month) for the CRPCD and SESD, respectively, along with monthly precipitation data from nearby weather stations. Both facilities experience wet weather flows far exceeding the standard for nonexcessive I/I, particularly in wet months, indicating that these facilities are receiving high levels of inflow and wet weather infiltration.

Figure 1. CRPCD Daily Maximum Flow Compared to Nonexcessive I/I Standard

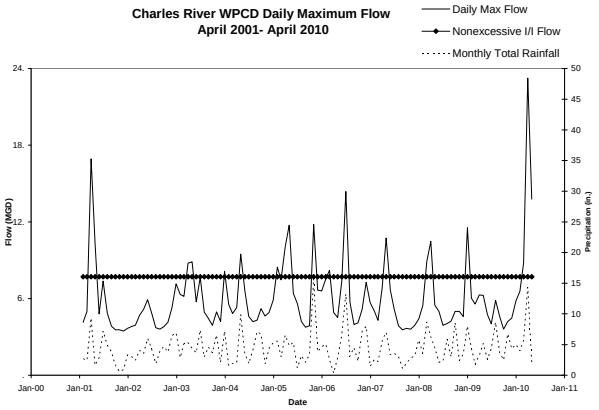
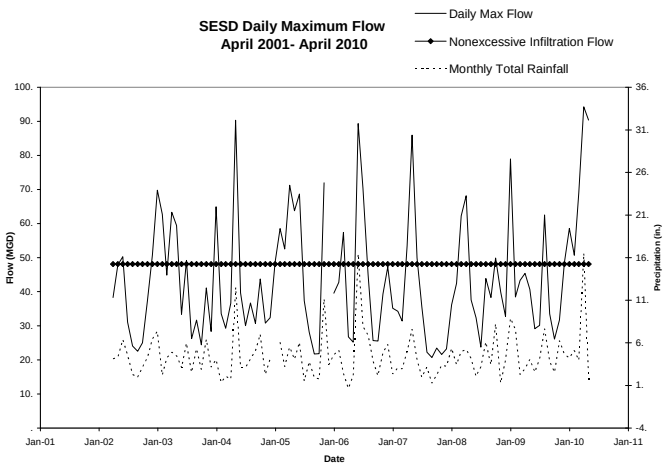


Figure 2. SESD Daily Maximum Flow Compared to Nonexcessive I/I Standard



Figures 3 and 4 shows the Average Monthly Flows for the CRPCD and SESD, which exceed the nonexcessive infiltration standard for all but the driest months. This indicates that these systems experience high levels of groundwater infiltration into the system even during dry weather.

Figure 3. CRPCD Monthly Average Flow Compared to Nonexcessive Infiltration Standard

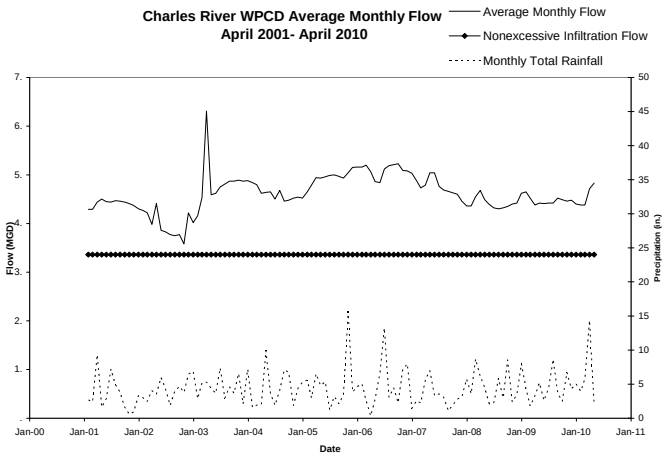
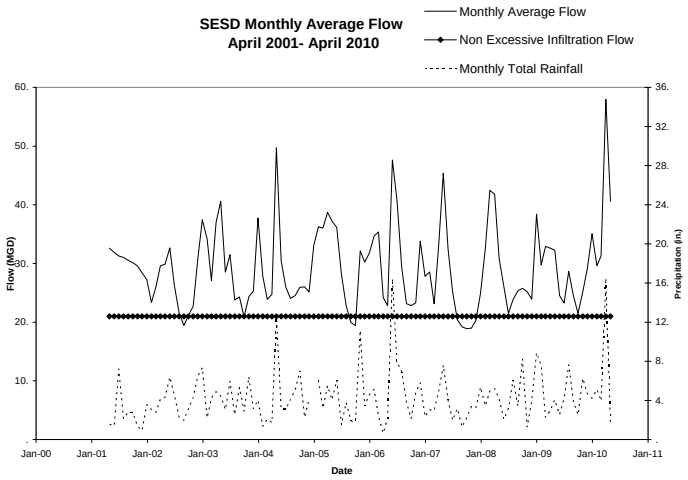


Figure 4. SESD Monthly Average Flow Compared to Nonexcessive Infiltration Standard



II. Flow Trends

Figures 5 and 6 show the trend in Maximum Daily Flows over the period during which these regional facilities have been responsible for implementing cooperative I/I reduction programs with the satellite collection systems. The Maximum Daily Flow reflects the highest wet weather flow for each month. The trend over this time period has been of increasing Maximum Daily Flow, indicating that I/I has not been reduced in either system despite the permit requirements.

Figure 5. CRPCD Daily Maximum Flow Trend

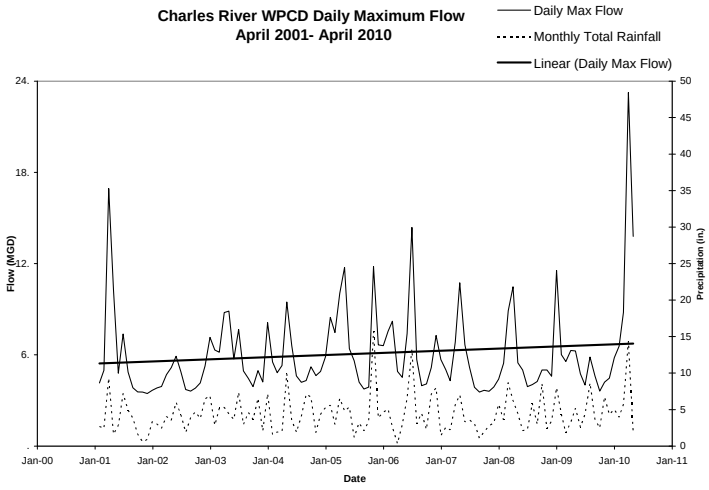
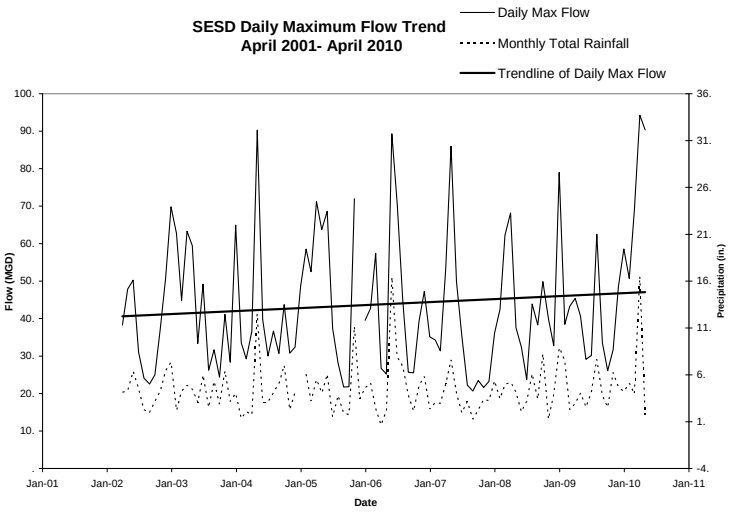


Figure 6. SESD Daily Maximum Flow Trend



III. Violations Associated with Wet Weather Flows

Both the CRPCD and SESD have experienced permit violations that appear to be related to I/I, based on their occurrence during wet weather months when excessive I/I standards are exceeded. Figure 7 shows violations of CRPCD's effluent limits for CBOD (concentration) and TSS (concentration and percent removal). Twelve of the sixteen violations occurred during months when daily maximum flows exceeded the EPA standard.

Figure 7. CRPCD CBOD and TSS Effluent Limit Violations

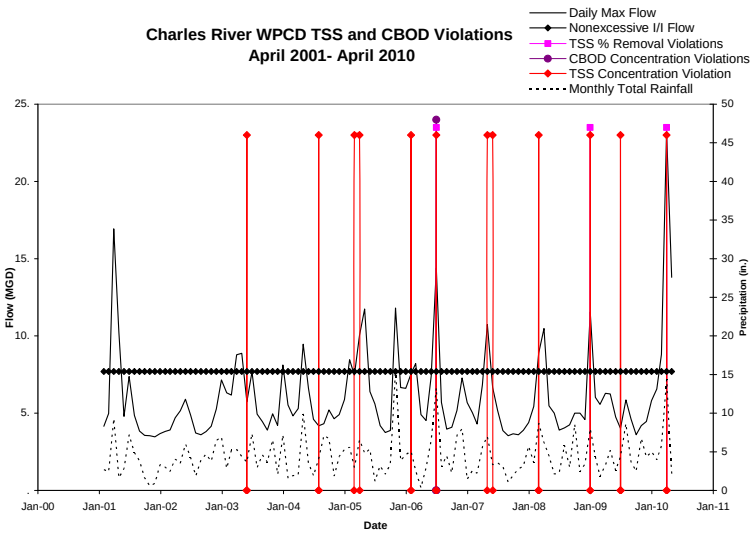
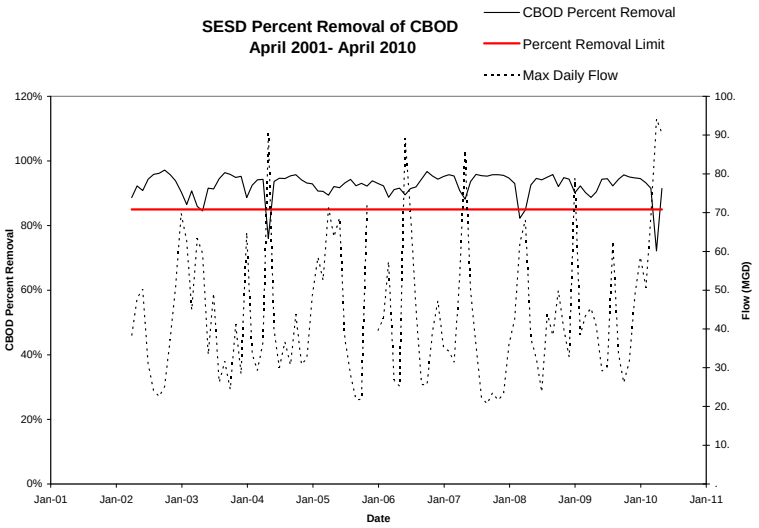


Figure 8 shows SESD's results for removal of CBOD, in percentage, as compared to maximum daily flow. SESD had three permit violations where CBOD removal fell below 85%, all during months with high Maximum Daily Flows.

Figure 8. SESD CBOD Percent Removal



In addition, both of these regional POTWs have experienced SSOs within the municipal satellite collection systems. In the SESD system, Beverly, Danvers, Marblehead and Peabody have reported SSOs between 2006 and 2008, based on data provided by MassDEP. In the CRPCD system, both Franklin and Bellingham have reported SSOs between 2006 and 2009.

Exhibit C

List of municipal satellite collection systems that have had SSOs

Exhibit D

Form of Regional Administrator's waiver of permit application requirements for municipal satellite collection systems

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

Re: Waiver of Permit Application and Signatory Requirements for [Municipal Satellite Sewage Collection System]

Dear _____:

Under NPDES regulations, all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed. Where the Region has "access to substantially identical information," the Regional Administrator may waive permit application requirements for new and existing POTWs. *Id.* Pursuant to my authority under this regulation, I am waiving NPDES permit application and signatory requirements applicable to the above-named municipal satellite collection systems.

Although EPA has the authority to require municipal satellite collection systems to submit individual permit applications, in this case I find that requiring a single permit application executed by the regional POTW treatment plant owner/operator will deliver "substantially identical information," and will be more efficient, than requiring separate applications from each municipal satellite collection system owner/operator. Municipal satellite collection system owners/operators are expected to consult and coordinate with the regional POTW treatment plant operators to ensure that any information provided to EPA about their respective entities is accurate and complete. In the event that EPA requires additional information, it may use its information collection authority under CWA § 308. 33 U.S.C. § 1318.

This notice reflects my determination based on the specific facts and circumstances in this case. It is not intended to bind the agency in future determinations where a separate permit for municipal satellites would not be duplicative or immaterial.

If you have any questions or would like to discuss this decision, please contact [EPA Contact] at [Contact Info].

Sincerely,

Regional Administrator

NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES
WATER DIVISION
P.O. BOX 95
CONCORD, NEW HAMPSHIRE 03302-0095

U.S. ENVIRONMENTAL PROTECTION AGENCY-REGION 1
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT (THE "ACT"), AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT, AND ISSUANCE OF A STATE SURFACE WATER PERMIT UNDER NH RSA 485-A:13, I(a).

PUBLIC NOTICE PERIOD: May 20, 2020 – June 18, 2020

PERMIT NUMBER: **NH0100790**

PUBLIC NOTICE NUMBER: NH-011-20

NAME AND MAILING ADDRESS OF APPLICANT:

City of Keene
City Hall
580 Main Street
Keene, New Hampshire 03431

NAMES AND MAILING ADDRESSES OF CO-PERMITTEES

Town of Marlborough
Board of Selectmen
P.O. Box 487
Marlborough, NH 03455

Town of Swanzey
Swanzey Sewer Commission
P.O. Box 10009
Swanzey, NH 03446

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Keene Wastewater Treatment Plant
420 Airport Road
Swanzey, NH 03446

RECEIVING WATER: **Ashuelot River, Class B**

PREPARATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) have cooperated in the development of a draft permit for the City of Keene, which discharges sanitary and industrial wastewater. The municipalities of Marlborough and Swanzey are co-Permittees for certain parts of the Permit. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., Chapter 485-A of the New Hampshire Statutes: Water Pollution and Waste Disposal, and the New Hampshire Surface Water Quality

Regulations, Env-Wq 1700 et seq. EPA has formally requested that the State certify the draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

The draft permit and explanatory fact sheet may be obtained at no cost at http://www.epa.gov/region1/npdes/draft_permits_listing_nh.html or by contacting:

George Papadopoulos
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1579
Papadopoulos.George@epa.gov

The administrative record containing all documents relating to this draft permit including all data submitted by the applicant may be inspected at the EPA Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of the draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **June 18, 2020**, to the address or email address listed above. Any person, prior to such date, may submit a request in writing to EPA and NHDES for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

THOMAS E. O'DONOVAN, P.E., DIRECTOR
WATER DIVISION
NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES

KEN MORAFF, DIRECTOR
WATER DIVISION
U.S. ENVIRONMENTAL PROTECTION
AGENCY - REGION I