

Response to Comments on the Draft National Pollutant Elimination System General Permit for the Discharge of Wastewater from Certain Publicly Owned Treatment Works Treatment Plants and Other Treatment Works Treating Domestic Sewage in the Commonwealth of Massachusetts (NPDES Permit No. MAG580000) and in the State of New Hampshire (NPDES Permit No. NHG580000)

A Notice of Availability of the Draft National Pollutant Discharge Elimination System (“NPDES”) General Permit for the Discharge of Wastewater from Certain Publicly Owned Treatment Works Treatment Plants (“POTW Treatment Plants”) and Other Treatment Works Treating Domestic Sewage in the Commonwealth of Massachusetts (NPDES Permit No. MAG580000) and in the State of New Hampshire (NPDES Permit No. NHG580000) was published in the Federal Register on November 4, 2010 and the public comment period extended through December 6, 2010. Unless noted otherwise, the two general permits are hereafter referred to as the “POTW GP” or the “POTW General Permit”.

Following a review of the comments received, EPA has made a final decision to issue the POTW GP. In accordance with the provisions of 40 CFR § 124.17, this document briefly describes and responds to the comments received on the draft permit, and explains any provisions of the final permit which have been changed from the draft as well as the reasoning supporting those changes. Any clarifications that EPA considers necessary are also included in this document. A copy of the final permit may be obtained by calling or writing Meridith Timony, United States Environmental Protection Agency, 5 Post Office Square-Suite 100, Mail Code OEP06-1, Boston, Massachusetts 02109-3912; Telephone: (617) 918-1533. Copies of the final permit and the response to comments may also be obtained from the EPA Region I website at <http://www.epa.gov/region1/npdes/potw-gp-2010.html>.

A. Comments received from Paul J. Diodati, Director, Commonwealth of Massachusetts, Division of Marine Fisheries, dated December 6, 2010.

Comment 1:

The Division of Marine Fisheries (Marine Fisheries) reviewed the above referenced draft NPDES permit pertaining to certain publicly owned treatment works treatment plants and other treatment works treating domestic sewage in the Commonwealth of Massachusetts. The draft permit fecal coliform effluent limitations for discharges to SA marine waters includes a maximum daily concentration of 43 cfu/100 ml. The National Shellfish Sanitation Program standard of 43 cfu/100 ml changed several years ago to 28 cfu/100 ml. EPA has consistently adopted the new standard with new and renewal NPDES permits. Accordingly we recommend the maximum daily discharge limitation for fecal coliform be revised to 28 cfu/100 ml.

Response 1:

EPA inadvertently included a maximum daily fecal coliform bacteria limitation for Massachusetts discharges to Class SA waters designated for shellfishing of 43 cfu/100 ml in the draft General Permit. As correctly noted in the above comment, a maximum daily fecal coliform bacteria limit of 28 cfu/100 ml would reflect the most current water quality criteria for Class SA waters designated for shellfishing found in the Massachusetts Water Quality Standards at 314 CMR § 4.05(4)(a)(4). Therefore, the maximum daily fecal coliform bacteria limitation for discharges to Class SA waters designated for shellfishing in Part I.B. of the final General Permit has been revised from 43 cfu/100 ml to 28 cfu/100 ml.

B. Comments received from Dennis Messier, Plant Manager, Newington Sewer Commission, Town of Newington, New Hampshire, dated December 2, 2010.

Comment 1:

We have received and reviewed the draft POTW General Permit and Fact Sheet, which were advertised for public comment on November 4, 2010 (Federal Register Vol. 75, No. 213). We provide the following comments:

There are a number of items in the draft POTW General Permit and Fact Sheet which would change our current permit requirements (e.g. WET testing frequency, WET testing limits, fecal vs. total coliform testing, enterococci testing frequency). The draft POTW General Permit/Fact Sheet is virtually the same as the 2005 General Permit/2004 Fact Sheet for New Hampshire marine discharges. Similarly, the influent flows and loads received at our facility are virtually unchanged from that time as well. Given that the basis for the permit appears unchanged, we request that our permit limits and testing frequencies be maintained as they are in the existing permit.

Response 1:

The Newington Wastewater Treatment Facility is classified as a major facility, and employs a treatment technology other than sand filtration or lagoons (i.e., “other”). Table F, Monitoring Requirements, of the draft POTW GP specifies that the effluent discharged from a major facility which uses a treatment technology other than sand filtration or lagoons is to be monitored for whole effluent toxicity (WET) and enterococci at a frequency of twice/year and once/week, respectively. These monitoring frequencies are identical to those in the POTW GP that was issued in 2005 and expired on September 22, 2010 (the “expired POTW GP or the “expired General Permit”).

WET limits are determined in part by calculating a dilution factor for each outfall, which is based on the available dilution in the receiving water at the point of discharge and the design flow of the facility. Dilution factors for New Hampshire POTWs discharging to

tidal waters are calculated using the Cornell Mixing Zone Expert System (CORMIX) modeling. The procedures followed by NHDES in calculating dilution factors for tidal discharges cap the dilution factor at 100, even when the modeling results indicate a dilution factor greater than 100. This is to account for factors not addressed by the modeling analysis, such as the possibility that pollutant levels may build up over multiple tidal cycles. The modeling results for the Newington WWTF outfall suggest that the dilution factor is greater than 100. Therefore, as indicated in Part II.B. of the draft General Permit, an acute (LC₅₀) limit of $\geq 50\%$ would apply to the Newington discharge, which is consistent with the approach taken in establishing the WET limit under the expired POTW GP that was issued to the Newington WWTF.

As noted in Part II.B., footnote 11, of the draft POTW GP, the permittee is to indicate in the Notice of Intent requesting permit coverage which bacteria limits (fecal coliform bacteria or total coliform bacteria) shall apply to the discharge for which coverage is being sought (also see Part V.B.3. of the draft and final POTW GP). Therefore, the Town may elect to have the fecal coliform limits in the draft General Permit apply to the discharge, which would be identical to those in the expired General Permit.

The fecal coliform and total coliform bacteria maximum daily reporting requirements in Part II.B. of the draft Permit are new. Incorporation of these requirements is consistent with other NPDES permits issued to New Hampshire POTWs that discharge to tidal waters in accordance with the New Hampshire Water Quality Standards (Env-Wq 1703.06(b)) and the designated uses and criteria for tidal waters prescribed in the State statutes (RSA 485-A:8, V and 487:34). Specifically, RSA 485-A:8, V requires that tidal waters used for growing or taking of shellfish for human consumption shall be in accordance with the criteria recommended under the *National Shellfish Sanitation Program Manual of Operations*, United States Food and Drug Administration (FDA). Additionally, NH RSA 487:34 requires classification of shellfish waters in accordance with the FDA National Shellfish Sanitation Program (NSSP). The NSSP Guide includes standards for shellfish growing areas based on total coliform or fecal coliform. The maximum daily reporting requirement in the final POTW GP remains unchanged from the draft POTW GP.

C. Comments submitted by Julia Griffin, Town Manager, Hanover, New Hampshire, dated November 29, 2010.

Comment 1.

The Hanover, NH Water Reclamation Facility (#NHG580099) has operated under the NH General Permit program since February 9, 2006. We submitted a Notice of Intent (NOI) letter to EPA Region 1 on January 4, 2010 and received an acknowledgement letter from EPA Region 1 on March 19, 2010 informing the Town of Hanover that “the NOI was received in time, reviewed and was deemed complete, thus coverage under the current POTW GP is administratively continued until a new permit is issued, in

accordance with the Administrative Procedures Act (5 U.S.C. 558(c)) and 40 CFR § 122.6”. This statement was interpreted to mean that the Hanover Facility’s General Permit status was being continued for another permit cycle. Review of the Draft Permit as proposed conflicts with this assumption as outlined below.

Part III.I., Special Conditions – (Total Nitrogen Mass Loading). The proposed ceiling limit of 35 lbs/day would prohibit the Town of Hanover’s coverage under the General Permit program. The Town has a significant concern regarding this seemingly arbitrary limit. A new total nitrogen mass loading limit which represents such a significant departure from our Facility’s current and upgrade-designed treatment capability warrants full disclosure by the EPA, both as to how this limit was determined and whether it is a realistic value based on science and approved methods? Given the Facility’s dilution factor of 198:1, our nutrient impact would be minimal, particularly considering the distance from the referenced impaired area. This limit is also beyond the typical secondary treatment system’s achievable performance design-a treatment system which has been approved by both EPA and NHDES.

*Further, studies have been published identifying that only 3% of the nutrient loading that enters into the Long Island Sound estuary originates in NH. Of that 3%, greater than 50% is from Non-Point sources. The basis of the limit and the true impact of assigning this limit will have little noticeable environmental gain, while placing a significant and severe financial burden on municipalities that are struggling to control expenditures. Over the past few years, as the Town has designed, sought Town Meeting funding for, and implemented several critical facility upgrades, we have sought guidance and direction from both NHDES and EPA regarding nutrient regulations, but to no avail. Now, just as we are about to embark upon the final component of our Facility’s upgrade in 2011, we receive notification of the new treatment limits. The project will replace and upgrade only key critical components to keep the facility in compliance with the **existing** permit limits granted through NHDES and EPA. The imposition of an unachievable limit with the current technology this late in the game will require a completely new treatment approach without any financial support for the requirement. This requirement is tantamount to an unfunded mandate.*

I have attached an advisory letter prepared for the Town by our wastewater engineering firm, Underwood Engineers. Note the projected cost of improvements necessary to meet the new limit of \$30 million. Quite frankly, as a Town Manager who has helped to steer our Facility through two Town Meetings to gain approval for over \$11.0 million in improvements over the past 6 years, I would never succeed in gaining support for an investment of this magnitude.

Given the low impacts and natural degradation of said nutrient loading, the Town of Hanover believes that facilities north of the Massachusetts border should be exempt from the nitrogen mass loading limits at this time.

Response 1.

Note: The letter referred to in the above comment, which was prepared for the Town of Hanover by Underwood Engineers, dated November 24, 2010, is included in this Response to Comments Document as Attachment A.

The letter sent to the Town of Hanover by EPA, dated March 19, 2010, notifying the Town that their authorization to discharge from the Hanover Water Reclamation Facility under the expired POTW GP was administratively continued in accordance with the Administrative Procedures Act (5 U.S.C. 558(c)) and 40 CFR 122.6, also stated that “...upon reissuance of the POTW GP, an NOI for coverage will need to be submitted in accordance with the notification requirements of that permit”. Under the provisions of 40 CFR § 122.6(a), “the conditions of an expired permit continue in force under 5 U.S.C. 558(c) until the effective date of a new permit”. Part III.L.3. of the expired POTW GP, under which the Town is currently operating, sets forth requirements for permittees whose permit coverage was administratively continued, including “..any permittee authorized for general permit coverage prior to the expiration date will automatically remain covered by the continued general permit until the earlier of...reissuance of this general permit, at which time the permittee must comply with the Notice of Intent conditions of the new permit to maintain authorization to discharge...”. Therefore, in accordance with 40 CFR § 122.6 and Part III.L.3. of the expired (administratively continued) POTW General Permit, if the Town wishes to be covered under the reissued permit, it must submit an NOI for coverage that conforms to the notification requirements of the final POTW GP. The notification requirements in the final POTW GP remain unchanged from the draft POTW GP. Alternatively, the Town may choose to submit an application for an individual permit to EPA and the State. The Town is reminded that an NOI for coverage under the reissued POTW GP or an application for an individual permit shall be submitted to EPA and NHDES within 90 days from the effective date of the reissued permit, in accordance with Part V.C. of the draft and final POTW GP.

The draft POTW GP establishes nitrogen monitoring requirements, not limits, for certain discharges to receiving waters tributary to Long Island Sound. Nitrogen limits have not been established in the draft POTW GP. As discussed in detail in Part III.F. of the fact sheet which accompanied the draft POTW GP, the total maximum daily load (TMDL) developed by the Connecticut Department of Environmental Protection (CT DEP) for addressing nitrogen-driven eutrophication impacts in Long Island Sound establishes a Waste Load Allocation (WLA) for point sources discharging nitrogen into receiving waters which are tributary to Long Island Sound (see *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound*, CT DEP 2000). The point source WLA for out-of-basin point sources (Massachusetts, New Hampshire and Vermont POTWs discharging to the Connecticut, Housatonic and Thames River watersheds) requires an aggregate 25 % reduction from the baseline total nitrogen loading estimated in the TMDL. EPA’s approach to ensuring that the aggregate nitrogen loading from out-of-basin point sources does not exceed the TMDL target of a 25 percent reduction over baseline loadings has been to incorporate

nitrogen-related conditions in NPDES permits issued to existing treatment facilities in Massachusetts and New Hampshire that discharge to the Connecticut, Housatonic and Thames River Watersheds based on the nitrogen load in the discharge for which permit coverage is being sought.

The nitrogen monitoring requirements in the final POTW GP remain unchanged from the draft POTW GP, and apply to facilities discharging less than 35 lbs/day of total nitrogen to receiving waters within the Housatonic, Thames, or Connecticut River Watersheds. These requirements are consistent with the approach taken by the Connecticut Department of Environmental Protection, which applied a threshold of 20 lbs/day (equivalent in impact to a 35 lbs/day threshold at facilities upstream in MA and NH) when imposing nitrogen controls on existing facilities. See *Nitrogen Control for Small Sewage Facilities* (CT DEP). Owners/operators of facilities discharging more than 35 lbs/day of total nitrogen to these receiving waters will be subject to requirements which are outside of the scope of the POTW GP, and will be required to apply for an individual permit.

As indicated in the letter prepared for the Town by Underwood Engineers (see Attachment A), it appears as though the Hanover Water Reclamation Facility would not be eligible for coverage under the POTW GP based on the POTW nitrogen loading estimates used in the development of the Long Island Sound TMDL and on subsequent examinations of nitrogen loading in the upper Connecticut River Basin (see *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound*, CTDEP, 2000. Also see Deacon, Jeffrey R., Smith, Thor E., Johnston, Craig M., Moore, Richard B., Weidman, Rebecca M., and Blake, Laura J., 2006. *Assessment of Total Nitrogen in the Upper Connecticut River Basin in New Hampshire, Vermont, and Massachusetts, December 2002 – September 2005*. U.S. Geological Survey Scientific Investigations Report 2006-5144). EPA's current approach to addressing nitrogen loadings from New Hampshire POTWs that discharge over 35 lbs/day of total nitrogen to the Connecticut River is to require optimization of nitrogen removal using existing facilities to ensure that nitrogen loadings do not increase. A final determination as to whether the Town will be required to apply for an individual NPDES permit will be made during the process of reviewing available information relative to nitrogen in response to the NOI submitted for coverage under the POTW GP. If the available information suggests that the nitrogen load in the discharge exceeds the 35 lbs/day threshold value, EPA will inform the Town by certified mail that the discharge is not eligible for coverage under the POTW GP and that an application for individual permit will need to be submitted.

D. Editorial comments were submitted by the Massachusetts Department of Environmental Protection (MassDEP) on the draft permit and fact sheet. The changes made to the final permit in response to these suggestions are addressed first. Fact sheets are written to support the draft permit, and are not revised as part

of the final permit decision. EPA does not believe that any of the editorial suggestions submitted on the fact sheet necessitate any changes to the final permit. However, responses to significant comments are noted below in this Response to Comments document, which becomes part of the administrative record.

1. Changes Made to the final POTW GP from the draft POTW GP

Part I.A., Footnote 12: The reference to Standard Methods for the Examination of Water and Wastewater, 20th edition, has been changed to “the most currently approved version of Standard Methods for the Examination of Water and Wastewater”.

Part I.A., Footnote 15; Part II.A, Footnote 13; and Part III.I. (Special Conditions): The calculation of total nitrogen shall be based on the average monthly flow, not the design flow.

Part I.A., Footnote 17; and Part I.B, Footnote 21: The following statement has been added, “A receiving water control must be run when an alternate dilution water is used. The receiving water control shall be analyzed for hardness, alkalinity, pH, ammonia, total organic carbon, specific conductance; and total aluminum, cadmium, chromium, copper, lead, nickel, and zinc and the results included in the WET test report that is submitted to EPA and MassDEP”.

Part I.B., Footnote 18: The reference to Class B waters has been removed.

Part I.B., Footnote 20: The inland silverside, *Menidia beryllina* (*M. beryllina*), was inadvertently omitted as a test species for marine acute WET tests. Therefore, Part II.B., Footnote 20, of the final permit requires marine acute WET tests be conducted using both the inland silverside, *M. beryllina* and the mysid shrimp, *Mysidopsis bahia* (*M. bahia*).

Part IV.C.: Added “discharges to an Area of Critical Environmental Concern (ACEC) in Massachusetts” and “discharges to a receiving water within the Housatonic, Connecticut, or Thames Rivers watersheds when the nitrogen load in the discharge is greater than 35 lbs/day” to the list of discharges excluded from coverage under the POTW GP.

Part IV.D.2.: The reference to Attachment F has been changed to Attachment E.

Part IV.D.3.: The reference to Part C, Step 3, of Attachment D, has been changed to Part III, Step 3.

Part V.B.2.: The reference to MASSDEP’s Permit Renewal Application form “BRP-07” has been changed to “BRP WM 07”

Part VII.A.: Administrative Requirements, Notice of Termination: “Phone number” has been added to the list of information that is to be submitted along with a Notice of Termination of discharge

2. Clarification of the Fact Sheet

Part II.C.: The list of discharges eligible for coverage under the POTW GP should have included Massachusetts facilities that discharge to Class A receiving waters.

Part III.C.: The correct citation for the water quality criteria for pH for Class SA waters is 314 CMR 4.05(4)(a)(3).

Part III.D.: The correct citations for the water quality criteria for bacteria for Class A and Class B waters are 314 CMR 4.05(3)(a)(4) and 314 CMR 4.05(3)(b)(4)(b), respectively. The correct citations for the water quality criteria for bacteria for Class SA and Class SB waters are 314 CMR 4.05(4)(a)(4) and 314 CMR 4.05(4)(b)(4), respectively.

Part III.D.: “Total coliform bacteria” was inadvertently included in the list of indicator organisms under “*Calculating Monthly Average Discharges of Bacteria in Massachusetts*”.

Part III.E.: The Massachusetts Water Quality Regulations at 314 CMR 4.05(5)(c) were inadvertently referred to in this section.

Part III.E.: The reference to Attachment C should have been Appendix C.

Part III.H.: The correct date for the *Massachusetts Water Quality Standards Implementation Policy for Mixing Zones* is January 8, 1993.

Part IV.C.: The correct citation to the proper operation and maintenance, and mitigation requirements in the draft POTW GP is Part VIII.

E. The United States Department of the Interior, Fish and Wildlife Service, offered two editorial comments on Attachment D of the draft POTW GP. The following changes have been made to Attachment D of the final POTW GP in response to these comments:

Page 2: The sections of the Connecticut River in which the federally-listed endangered dwarf wedgemussel (*Alasmidonta heterodon*) is found identifies two overlapping sections (from Haverhill to Lyme, NH and from Haverhill to Piermont, NH). The section of the Connecticut River from Haverhill to Piermont, NH has been removed from Attachment D of the final POTW GP.

Page 11: The URLs for “ESA Section 7 Consultations” and the “U.S. Fish and Wildlife Service New England Field Office” identified in Part V., U.S. Fish and Wildlife Service Offices were incorrect. The following correct URLs have been included in Attachment D of the final POTW GP:

ESA Section 7 Consultations: <http://www.fws.gov/endangered/what-we-do/faq.html>

U.S. Fish and Wildlife Service New England Field Office:

http://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm

E. Additional Changes to the final POTW GP

1. The language in Part III.H.6. of the final POTW GP has been changed from “The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen vector attraction reduction (land application and surface disposal) at the following frequency” to “The sludge shall be monitored for pollutant concentrations (all Part 503 methods), pathogen reduction and vector attraction reduction (land application and surface disposal) at the following frequency”
2. The requirement to include a plan for addressing overflows and back-ups in the Collection System Operation and Maintenance Plan submitted in accordance with Part II.D.(5) of the General Permit was inadvertently omitted from the draft POTW GP. This requirement has been incorporated into the language in Part II.D.5.(b) of the final POTW GP as follows: “Identification of known and suspected overflows and back-ups, including combined manholes, a description of the cause of the identified overflows and back-ups, and a plan for addressing the overflows and back-ups consistent with the requirements of the General Permit”.
3. Attachment A of the draft POTW GP (Acute Toxicity Test Procedure and Protocol) has been updated in the final POTW GP to reflect the most current protocol.

**Attachment
A**

**Underwood
Engineers, Inc.**

Civil-Environmental

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1544-02

November 24, 2010

Mr. Peter Kulbacki, P.E.
Director of Public Works
Town of Hanover
194 Lebanon Street
Hanover, NH 03755

Re: NPDES Permit No. NHG580099
Hanover, New Hampshire

Dear Mr. Kulbacki:

This letter is in response to our recent conversation concerning the General Permit condition that is being proposed that would apply to the Hanover Water Reclamation Facility; specifically, the Total Nitrogen limit of 35 lb/day.

At the design flow of the Hanover WRF at 2.3 MGD, that Total Nitrogen limit would require an effluent concentration of 1.8 mg/L Total Nitrogen. This is an extremely tight limit and considered in formal EPA publications as being beyond the "limit of technology". Translated in simple terms, it is an extremely difficult effluent concentration to achieve, and may not be possible even with Best Available Technology.

In addition to being difficult to achieve, the modifications required to achieve an effluent concentration that low are extremely expensive. In a document recently published by NHDES, for the Kittery (ME) wastewater treatment facility, which is of a similar size and type as the Hanover facility, the cost to achieve a 3.0 mg/L effluent Total Nitrogen is in the range of \$30M.

In presentations made in technical sessions of the New England Water Environment Association conferences, detailed evaluations of the impact of Nitrogen on Long Island Sound indicate that point source contributions to the Connecticut River from New Hampshire constitute approximately 3% of the Total Nitrogen load delivered to Long Island Sound. Given the number of New Hampshire treatment facilities that discharge to the Connecticut River, the Hanover facility therefore contributes no more than 1 to 2% of the Total Nitrogen load to the Long Island Sound. The cost effectiveness of such a limit being applied to Hanover is clearly questionable.

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Mr. Peter Kulbacki, P.E.
November 24, 2010

The application of a mass loading limit to all facilities discharging to the Connecticut River under the General Permit Program clearly penalizes larger facilities. A mass loading of 35 lb/day can easily be met at a small facility in the range of 300,000 gpd with little, if any, Total Nitrogen removal while at a larger facility, such as Hanover, an extremely high level of Total Nitrogen removal is required.

Given the minimal impact of New Hampshire treatment facilities on the Total Nitrogen load to the Long Island Sound documented by several studies, we recommend that Hanover urge that the draft permit language be changed to make New Hampshire treatment facility discharges to the Connecticut River exempt from the 35 lb/day Total Nitrogen limit.

If you'd like specifics for the references I've cited above, please let me know. We'd be glad to discuss this with you in further detail.

Very truly yours,

UNDERWOOD ENGINEERS, INC.



Edward L. Rushbrook, P.E.
Senior Project Manager

cc: Kevin MacLean – Town of Hanover
Don Ware – Town of Hanover
David Mercier – UEI
Frank Underwood – UEI