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September 5, 2014

U.S. Environmental Protection Agency – Region 1
1 Congress Street, Suite 1100
Mail Code CIP
Boston, MA 02114

Attention: Ms. Susan Murphy

**Reference: Bridgewater Wastewater Treatment Facility
Draft NPDES Permit MA0100641**

Dear Ms. Murphy,

On behalf of the Town of Bridgewater, we have reviewed the Draft NPDES Permit for our existing Wastewater Treatment Plant (WWTP). The Draft NPDES Permit includes five new items of concern to us which we question and that require additional explanation and justification from EPA as follows:

1. The pH range change to 6.5-8.3 as described on page 2 of 18 of the draft permit and page 8 of the Fact Sheet.
2. The Total Phosphorus limit of 200 micro-grams per liter ($\mu\text{g/l}$) average monthly and report maximum day as described on page 2 of 18 of the draft permit and page 8 of the Fact Sheet.
3. The Total Nitrogen limit of 60 pounds per day (lbs/day) average monthly and report maximum day as described on page 3 of 18 of the draft permit, and 5 milligrams per liter (mg/l) average monthly as described on page 5 of 18 of the draft permit and page 12 of the Fact Sheet. We note that the 5 mg/l limit is not listed in Table A.1 of the draft permit, but indicates report only.
4. The new total residual chlorine measurement frequency of 3 times/day as listed on page 2 of 18 of the draft permit.
5. The implied requirement that we have dedicated collection system staff as indicated on page 8 of 18 under C.1. Maintenance Staff, item C.5. Collection System a.(1) and item C.5 Collection System b.(3) on page 10 of 18 in the draft permit.
6. The need for footnote 10 on page 5 of 18 in the permit and our exception to the wording in this footnote.

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Item 1: Our existing permit has a pH limit range of 6.0-8.3 which has been met consistently. The new pH limit range in the draft permit is 6.5-8.3 and references both MA SWQS 314 CMR 4, and 40 C.F.R 133.102(c). The 40 C.F.R 133.102(c) sets the rate at 6.0-9.0. The previous permit required the effluent pH to be within the range of 6.0-8.3. Ferric chloride is used at the WWTP to assist in the removal of phosphorus. Ferric is utilized as it is a non-aluminum based coagulant that has proven effective in the removal of phosphorus. One of the effects of using coagulants (including ferric chloride) is that it will reduce the pH of the effluent. The new draft permit also establishes a lower effluent phosphorous limit, which could result in the use of additional ferric chloride. The use of additional ferric chloride will further suppress the pH. *Therefore, we request that the permit pH range be set at 6.0-8.3 as listed in our existing permit for the Bridgewater WWTP.*

Item 2: The new total phosphorous limit of 200 ug/l has been greatly reduced from the previous limit of 1 mg/l in our existing permit. In the A.1 table of the permit, seasonal limits for nitrogen are listed, however the total phosphorous does not appear to be limited to the summer months. *We are requesting that the new phosphorous limit apply to the summer months (May 1 – October 31) only.*

Item 3: The new total nitrogen limit is listed at 60 lbs/day in Table A.1 of the permit, however other locations indicate an effluent limit of 5 mg/L monthly average. This new total nitrogen limit will be a challenging limit to meet at our WWTP especially when combined with the stringent limit for phosphorous. *We are requesting confirmation that the new limit is the 60 lbs/day mass balance limit only as listed in Table A.1 or is the new limit also a 5 mg/L concentration based limit? Please refer to additional questions related to this total nitrogen limit indicated below.*

Item 4: Our existing permit requires a total residual chlorine grab sample measurement frequency of 1 time/day which we have been able to implement and have demonstrated consistent compliance with our total residual chlorine limit. The new total residual chlorine measurement frequency of 3 times/day included in the draft permit imposes a staffing hardship on the Town especially for Saturdays, Sundays and holidays. To achieve our current permit requirement, we have a trained laboratory staff person come to the WWTP for a limited overtime period on weekends and holidays to check the chlorination/dechlorination system and to conduct a total residual chlorine test on one grab sample and then leave for the day. If this testing frequency is changed to 3 times per day, this staff person would have to work a full day on Saturdays, Sundays and Holidays along with the extra time it will take to test 3-times per day during weekdays. Also, based on our excellent operations history, we do not see the need for an alarm per footnote 7 on page 4 of 8 of the permit which would require that a costly automated low-level chlorine residual analyzer system be installed. *Therefore, we request that the total residual chlorine grab sample measurement frequency be set at 1 time/day as listed in our existing permit for the Bridgewater's WWTP and we request that the alarm system requirement in footnote 7 be deleted from the permit.*

Item 5: Our existing permit includes requirements for proper operation and maintenance of the sewer system which have been successful for the Town of Bridgewater. The implied requirement that we have dedicated collection system staff as indicated on page 8 of 18 under C.1. Maintenance Staff, item C.5. Collection System a.(1) and item C.5 Collection System b.(3) on page 10 of 18 in the draft permit would impose a staffing hardship on the Town. As a small 1.44 mgd plant, we have staff that fill multiple rolls. A crew may be doing pump station inspections in the morning and cleaning out a tank at the WWTP in the afternoon. If there is a sewer plug or pipeline collapse, it's all hands on deck and staff the normally work at the plant work on a problem in the collection system until it is resolved. We need to keep this flexibility since the size of our facility does not warrant a separate collection system crew. *Therefore, we request that the wording be changed to clarify that staff dedicated solely to operation of the collection system is not required similar to the wording in our existing permit for the Bridgewater WWTP.*

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Item 6: The draft permit does not include a limit for nitrogen from November 1st to March 31st. Therefore, we question the need for footnote 10 on page 5 of 18 in the permit. If EPA determines that even though there is no winter limits for nitrogen, we take exception to the following wording in footnote 10: "All available treatment equipment in place at the facility shall be operated unless equal or better performance can be achieved in a reduced operating mode."

This statement appears to give EPA and MassDEP the authority to dictate to our licensed and experienced wastewater operators how our facility shall be operated and may have the unintended consequence of a violation being issued when a regulator visits our facility and believes that a particular piece of equipment should be operational even though it does not improve nitrogen removal especially during the time when there is no numerical limit. *Therefore, we request that footnote #10 be eliminated or that the wording be changed to clarify that our operations staff, not EPA or MassDEP, have full operating responsibility and will determine what equipment should be operational and what equipment should not.*

Additional comments/Questions

We are aware that many positive performance changes have occurred at WWTPs in the Taunton River Estuary after much of the sampling data and related calculations were completed as referenced in the Fact Sheet. Also, since that time, it is reported that the water quality in Mount Hope Bay has improved significantly due to the CSO deep tunnel project in Fall River and other improvement projects tributary to the area. Given the significant cost burden that the proposed nutrient limits will imposed on the Town of Bridgewater and other communities with WWTPs in the Taunton River Estuary, it makes sense to us that current data which reflects water quality improvements that have been made should be used by EPA to re-calculate nitrogen and phosphorus loads before the new limits are imposed. We would also assert that a TMDL study with current data for the Taunton River Estuary is warranted and should be completed before the new limits are imposed.

We share the concerns expressed by another permittee⁽¹⁾ with a WWTP in the Taunton River Estuary which are:

- That it is not scientifically possible to reliably predict the degree of nitrogen control required to ensure compliance with appropriate standards using old data and the methodology employed by EPA.
- That the conditions governing dissolved oxygen (DO) concentrations in Mount Hope Bay differ significantly from those in the Taunton River. This could impact the degree of nitrogen removal required by the Town of Bridgewater and other municipal WWTPs that discharge to the Taunton River Basin.
- That EPA has failed to account for existing treatment improvements that are affecting the dissolved oxygen values in the Taunton River by using old outdated data.
- That EPA has failed to provide a cause and effect demonstration that nutrients are the actual cause of low DO conditions in the Taunton River as required by state and federal law.
- The assertion that the total nitrogen (TN) endpoint to derive the TN effluent limit is not scientifically defensible.
- That TN is the wrong parameter to regulate for DO control in short detention systems such as the Taunton River.
- That EPA's analysis is based on outdated information (a reoccurring theme).
- The assertion that the EPA has ignored the conceptual model of significant factors that affect DO and have not demonstrated that they are occurring in the Taunton River.

*The Town believes that the above concerns should be resolved and any necessary study and related modeling be completed before we can accept the nutrient limits included in the draft permit.*¹

¹ City of Taunton Comments to Draft Permit prepared by the Town and Hall & Associates

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Conclusion

It is the position of the Town of Bridgewater that for our WWTP, the extremely stringent effluent phosphorous and nitrogen limits proposed in the draft permit have not been adequately explained or supported by proper site-specific scientific methods to show why they are needed to protect water quality in the Taunton River Basin.

It is the position of the Town of Bridgewater that we be allowed time to conduct upstream sampling in the Town River so that more accurate mass balance calculations can be completed. The EPA encourages the facility to provide more site-specific sampling data as stated on page 10 of the Fact Sheet for the Bridgewater WWTP.

It is the position of the Town of Bridgewater that the total nitrogen and phosphorus permit limits for the major WWTPs in Taunton, Brockton and Somerset which represent 80% of the total direct wastewater flow to the Taunton River Estuary be implemented, water quality assessed, and maximum loading limits recalculated before the total nitrogen and phosphorus permit limits are established for the Bridgewater WWTP which represents less than 4% of the total direct wastewater flow to the Taunton River Estuary along with the other small WWTP contributors.

It is the position of the Town of Bridgewater that the EPA should allow us time to complete the CWMP process that is currently underway for our Town before new permit limits are established. Our CWMP may indicate that the Town needs an increase in plant flow to meet future growth which could impact the scientific determination of appropriate total nitrogen and phosphorus permit limits for our WWTP.

At the present time, the total nitrogen and phosphorus limits included in the draft permit cannot be achieved at our facility. This fact needs to be incorporated into the CWMP process so appropriate upgrade alternatives can be evaluated, cost estimates prepared and a recommended plan approved by the Town and the MEPA process.

The Bridgewater WWTP was designed to provide biological treatment with the ability to nitrify using a rotating biological contactor (RBC) process. While the facility consistently meets effluent limits for BOD and ammonia nitrogen, the nature of the process design makes the facility inherently unsuited to adapting for denitrification. Specifically, the lack of additional or flexible process tankage at the WWTP eliminates the ability to optimize the existing process for total nitrogen removal; and this constraint combined with the limitations of the existing WWTF site make adapting this facility for total nitrogen removal to be far more invasive than may be possible for other facilities.

Without recognition of the specifics of the Bridgewater WWTP, the proposed total nitrogen limits in our draft permit are the same as the limit proposed for several other (larger) plants in the Taunton Basin, while smaller plants are not being issued nitrogen limits at all. Considering the significant variation in plant capabilities, the Town observes that exploring a basin approach to addressing nitrogen may be more applicable, possibly including options such as nutrient trading (where some facilities that are more readily adapted to denitrification can more efficiently remove a greater part of the nitrogen load. We request that EPA explore this broader approach to nitrogen control in the basin before issuing the formal nitrogen limits proposed.

Also, we know that the resulting WWTP upgrade will have a very significant cost. Therefore, the Town requests time to complete our CWMP and evaluate the total cost of the project to ensure that it will not place an unreasonable financial burden on households in our community. The EPA's Interim Economic Guidance for Water Quality Standards document will be used to complete this determination.

Therefore, based on the information described above, we respectfully request that the draft permit be withdrawn or put on hold until an appropriate time when the items described above are completed.

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Bridgewater, along with our Engineers (Stantec Consulting Services Inc. and Weston & Sampson) are available to meet to discuss the proposed permit and the new effluent limits at your convenience.

In the meantime, Bridgewater will take additional actions at our WWTP to ensure that the effluent meets applicable standards and contains as little phosphorous and nitrogen as reasonably achievable.

Thank you for your consideration. We look forward to your response.

Sincerely,

Jonas Kazlauskas
Water & Sewer Superintendent
Bridgewater, MA

CC: Michael Dutton, Bridgewater Town Manager
Bridgewater Water & Sewer Commissioners
David Ferris, Director – MassDEP
David Burns, Mass DEP
Stephen Calabro, P.E., Stantec Consulting Services
Kent Nichols, P.E., Weston and Sampson