UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
BOSTON, MA 02109-3912

VIA EMAIL

December 22, 2023

Robert Ward, Director of Public Works
City of Haverhill – Haverhill Water Treatment Plant
131 Amesbury Road
Haverhill, MA 01830-2801

Re: Modification to the Authorization to discharge under the 2023 NPDES Potable Water Treatment Facilities General Permit (PWTFGP) – Authorization No. MAG640084 for the Haverhill Water Treatment Plant in Haverhill, MA

Dear Robert Ward:

The Town of Haverhill (the Permittee) requested a modification to the conditions of the Haverhill Water Treatment Plant's (the Facility) authorization to discharge under the National Pollutant Discharge Elimination System (NPDES) Potable Water Treatment Facilities General Permit (PWTFGP or General Permit), dated December 1, 2023. The U.S. Environmental Protection Agency (EPA) met with the Permittee on December 11, 2023, and discussed the changes in follow-up emails dated December 11, 2023. This letter details the Permittee's request, EPA's approval of the request, and the justification for that approval.

The Town of Haverhill requested changes to its flow limitations due to its history of discharging above the 1.0 MGD flow limit during system maintenance under its previous authorization. The PWTF GP allows certain facilities to have flow limitations above 1.0 MGD on a case-by-case basis. *See* Footnote 5 in Part III.A of the General Permit. In addition, increased discharges are not authorized under the General Permit. *See* Part III.C. Authorizing such discharges would initiate an antidegradation review by Massachusetts Department of Environmental Protection and is more appropriately handled through the individual permit process. In order to accommodate the Permittee's request and not violate the terms of the General Permit, EPA must ensure that an increase in the pollutants discharged, and the total flow limit allowed to be discharged is not increased.

In accommodating the flow limit request, EPA considered the fact that the Permittee does not discharge continuously but discharges less than 12 times per month through each of its outfalls. It is in the "Emergency and Infrequent Dischargers" category. Furthermore, the Permittee is only requesting flow increases at two of its outfalls, Outfall 002 and Outfall 003. Therefore, EPA can accommodate the flow limit request by reallocating flow and water quality-based pollutant loads among the five outfalls to ensure that the authorization doesn't allow an increase in the total load discharged from the Facility. Since the discharge is not continuous, this is a conservative approach to ensuring pollutant loads are not increased.

As described in Section 2.3 of the General Permit's Fact Sheet, flow limitations are used to regulate the quantity or load of water-quality based pollutants. Unlike technology-based effluent limitations that have their own basis, separate from effluent flow. The only pollutant with water-quality based effluent limitations (WQBELs) in the Facility's original authorization is Total Residual Chlorine (TRC). An average monthly effluent limitation of 110 µg/L and a maximum daily effluent limitation of 190 µg/L. The following calculations were used to derive the corresponding concentration-based effluent limit necessary to hold the load of TRC constant while allowing for the requested increase in effluent flow.

Load of TRC authorized:

- Average Monthly Load = 110 µg/L * 1.0 MGD * 8.34 (conv. factor) = 917.4 lb/day.
- Maximum Daily Load = 190 µg/L * 1.0 MGD * 8.34 (conv. factor) = 1,584.6 lb/day

Increasing the flow limit and holding the load constant, the concentration-based limits become:

- Average Monthly Limit:
  - 917.4 lb/day = [Average Monthly Limit µg/L] * 1.4 MGD * 8.34
  - Average Monthly Limit = 79 µg/L
- Maximum Daily Limit:
  - 1,584.6 lb/day = [Maximum Daily Limit µg/L] * 1.4 MGD * 8.34
  - Maximum Daily Limit = 136 µg/L

EPA has determined that these changes to effluent flow and TRC limits are consistent with the terms of the General Permit and do not permit an increased discharge from the Facility. Therefore, EPA is granting the Permittee's request for modified flow limits and is issuing this modification to the terms of the Permittee's authorization to discharge.

The changes to the effluent limitations can be found at the end of this letter in Part III.A, highlighted in bold. This modification shall take effect on January 1, 2024. If you have additional questions, please contact Nathan Chien at chien.nathan@epa.gov or (617) 918-1649.

Sincerely,

Weitzler, Ellen
Digitally signed by Weitzler, Ellen
Date: 2023.12.22 08:39:15 -05'00'

Ellen Weitzler, Supervisor
Industrial and Municipal Permits Section
Water Division, EPA Region 1

cc: Xiaodan Ruan, MassDEP (xiaodan.ruan@state.ma.us)
John D'Aoust, City of Haverhill (jdaoust@haverhillwater.com)
Zachary Eichenwald, CDM Smith (eichenwaldzt@cdmsmith.com)

Part III. General Permit Requirements

A. Effluent Limitations and Monitoring Requirements

1. Emergency and Infrequent Dischargers

Emergency dischargers are defined as those facilities that only discharge in case of an emergency (e.g., rare hydrologic event, treatment system failure, etc.). Infrequent dischargers are those facilities that discharge less than once per month or less than twelve times per year.

During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge wastewaters from potable water treatment facilities to the receiving water in the Permittee's authorization letter through **Outfalls 001, 002, 003, 004, and 005**, unless the waters are restricted as noted in Section I.C. The discharge and receiving water shall be limited and monitored as detailed below and further specified in the facility's authorization letter. Permit conditions for all outfalls are the same**, unless indicated otherwise in the table below**.

Effluent Characteristic	**Effluent Limitation**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Effluent Flow[5] **Outfall 001** **Outfall 002** **Outfall 003** Outfall 004 **Outfall 005**	Report MGD (*all outfalls*)	**0.6 MGD** **1.4 MGD** **1.4 MGD** 1.0 MGD **0.6 MGD**	Continuous	Recorder or Estimate
TSS	30 mg/L	50 mg/L	1/Discharge Event	Composite
pH Range[6]	6.5 – 8.3 S.U.		1/Discharge Event	Grab
Total Residual Chlorine[7,8] Outfall 001 **Outfall 002** **Outfall 003** Outfall 004 Outfall 005	 110 µg/L **79 µg/L** **79 µg/L** 110 µg/L 110 µg/L	 190 µg/L **136 µg/L** **136 µg/L** 190 µg/L 190 µg/L	1/Discharge Event	Grab
Total Aluminum[9]	---	Report µg/L	1/Discharge Event	Composite

Footnotes:

1. All samples shall be collected in a manner to yield representative data. A routine sampling program shall be developed in which samples are taken at the same location prior to the discharge mixing with other waste streams and entering the receiving waterbody. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and the State of any additional testing above that required herein, if

testing is in accordance with 40 CFR Part 136. Any change in sampling location from the one specified in the NOI shall be reviewed in writing by EPA and the State.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.

4. A "grab" sample is an individual sample collected in a period of less than 15 minutes. When possible, composite samples shall be taken for those parameters identified in the table. A "composite" sample is a composite of at least four (4) grab samples collected at approximately equal intervals on a flow weighted basis during the time at which the discharge is entering the receiving water over an interval representative of the process (e.g., a backwash cycle).

5. The daily maximum flow limit allowed by this General Permit shall be no greater than 1.0 MGD. Also report monthly average and maximum daily flow in MGD.

6. The pH shall be within the following range based on State and waterbody classification: Massachusetts (Class A and B): 6.5 – 8.3 S.U. and the discharge shall not cause a change in pH of the receiving water more than 0.5 S.U. outside of the natural background conditions.

   The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

7. Limits and monitoring for total residual chlorine (TRC) are only required for discharges that have been previously chlorinated or contain residual chlorine. The maximum daily and average monthly concentrations of TRC allowed in the effluent are based on the appropriate water-quality criterion, listed below:
   - Freshwater acute (for maximum daily limitations) = 19 µg/L
   - Freshwater chronic (for average monthly limitations) = 11 µg/L

- Marine acute (for maximum daily limitations) = 13 µg/L
- Marine chronic (for average monthly limitations) = 7.5 µg/L

8. TRC analysis must be completed using a test method in 40 CFR Part 136 that achieves a minimum level no greater than 20 µg/L.

9. Monitoring for Total Aluminum is only required for facilities that use and discharge an aluminum-based chemical (e.g., aluminum-based coagulant or product for algal control).