



Vermont Department of Environmental Conservation

Watershed Management Division

1 National Life Drive, Main-2

Montpelier VT 05620-3522

Agency of Natural Resources

[phone] 802-490-6182

[fax] 802-828-1544

October 25, 2012

Hunter Rieseberg, Town Manager
Town of Hartford
171 Bridge Street
White River Junction, VT 05001

Re: Draft Discharge Permit #3-1185

Dear Mr Rieseberg:

We are proposing to issue you the above referenced permit. A draft of this permit is enclosed for your review and comment. The draft permit is based on the information contained in your application and requirements of State and/or Federal laws and regulations providing for the protection of water quality. If the draft permit does not correctly reflect your present operation, or if you have any questions, please contact Carol Carpenter at 490-6182.

Please note that there are significant changes proposed to the permit. These are discussed in the enclosed fact sheet to the permit. In order to facilitate the issuance of your permit in the shortest possible time, we are also placing it on the required 30-day public notice immediately. If we do not hear from you within 30 days of the date of this letter and if there is no response within 30 days which requires a public hearing or major permit modification, the permit will be sent to the Secretary of the Agency of Natural Resources or her designated representative for final approval and signature.

Sincerely,

A handwritten signature in blue ink that reads "Ernest F. Kelley".

Ernest F Kelley, Manager
Wastewater Programs

Enclosures

cc: Aldrich + Elliott

AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
1 NATIONAL LIFE DRIVE
MONTPELIER, VERMONT 05620-3522

Permit No. 3-1185
Project ID No. NS97-0316
NPDES No. VT0100978

Name of Applicant: Town of Hartford
171 Bridge Street
White River Junction, VT 05001

Expiration Date: September 30, 2017

DRAFT
DISCHARGE PERMIT

In compliance with the provisions of the Vermont Water Pollution Control Act as amended (10 V.S.A. Chapter 47) and the federal Clean Water Act, as amended (33 U.S.C. §1251 et seq), the Town of Hartford, Vermont (hereinafter referred to as the "permittee") is authorized by the Secretary of the Vermont Agency of Natural Resources (Agency), to discharge from the *Quechee Wastewater Treatment Facility* to the Ottauquechee River in accordance with the following general and special conditions.

This permit shall become effective on the date of signing.

David K Mears, Commissioner
Department of Environmental Conservation

By: _____
Peter LaFlamme, Director
Watershed Management Division

I. SPECIAL CONDITIONS

A. EFFLUENT LIMITS

1. Until September 30, 2017, the permittee is authorized to discharge from S/N 001 - outfall, the Quechee Wastewater Treatment Facility, to the Ottauquechee River, an effluent whose characteristics shall not exceed the values listed below **from June 1 through September 30:**

DISCHARGE LIMITATIONS							
Effluent Characteristic	Monthly Average	Weekly Average	Maximum Day	Monthly Average	Weekly Average	Maximum Day	Instantaneous Maximum
 (lbs / day) (Concentration)			
Flow (Annual Avg)				0.475 MGD			
Biochemical Oxygen Demand, 5-day, 20° C ^(a)	25	37.5		10 mg/l	15 mg/l	20 mg/l	
Total Suspended Solids ^(a)	25	37.5		10 mg/l	15 mg/l	20 mg/l	
Total Phosphorus ^(a)	2.5			1.0 mg/l			
Total Nitrogen (TKN and nitrate/nitrite)	See Special Condition I.A.3.			Monitor only, mg/l			
Settleable Solids							1.0 ml/l
<i>Escherichia coli</i> Bacteria							77/100 ml
pH				Between 6.5 and 8.5 Standard Units			
Toxicity Testing				See Special Condition I.B.			
Annual constituents monitoring				See Special Condition I.F.3.			

(a) The permittee shall comply with the mass limitations or the concentration limitations, whichever is more restrictive.

2. Until September 30, 2017, the permittee is authorized to discharge from S/N 001 - outfall, the Quechee Wastewater Treatment Facility, to the Ottauquechee River, an effluent whose characteristics shall not exceed the values listed below **from October 1 through May 31:**

DISCHARGE LIMITATIONS							
Effluent Characteristic	Monthly Average	Weekly Average	Maximum Day	Monthly Average	Weekly Average	Maximum Day	Instantaneous Maximum
	(lbs / day)	(Concentration)	
Flow (Annual Avg)				0.475 MGD			
Biochemical Oxygen Demand, 5-day, 20° C ^(a)	75	113		30 mg/l	45 mg/l	50 mg/l	
Total Suspended Solids ^(a)	75	113		30 mg/l	45 mg/l	50 mg/l	
Total Phosphorus ^(a)	2.5			1.0 mg/l			
Total Nitrogen (TKN and nitrate/nitrite)	See Special Condition I.A.3.			Monitor only, mg/l			
Settleable Solids							1.0 ml/l
<i>Escherichia coli</i> Bacteria							77/100 ml
pH				Between 6.5 and 8.5 Standard Units			
Toxicity Testing				See Special Condition I.B.			
Annual constituents monitoring				See Special Condition I.F.3.			

(a) The permittee shall comply with the mass limitations or the concentration limitations, whichever is more restrictive.

3. **Total Nitrogen:**

Total Nitrogen is the sum of Total Kjeldahl Nitrogen and Nitrite/Nitrate (NO_x).

The permittee shall operate the facility to meet a Total Nitrogen (TN) interim limitation of **39.6 pounds per day, annual average**.

The Total Nitrogen pounds per day, annual average, shall be based on the sum of the Total Monthly Pounds of TN discharged for the calendar year and shall be calculated as follows:

1. Determine the Total Monthly TN in pounds:
Total Monthly TN pounds = (Monthly Average TN concentration x Total Monthly flow) x 8.34
2. Calculate the TN, pounds per day, annual average:
(Sum of the Total Monthly TN pounds for each month of the calendar year)/365 days

Annually, the permittee shall submit a report to the Agency as an attachment to the December Discharge Monitoring Report form (WR-43), that documents the annual nitrogen discharge load in pounds per day from the facility, summarizes activities related to optimizing nitrogen removal efficiencies, and tracks trends relative to the previous year.

The Department reserves the right to reopen and amend this permit to include an alternate TN limitation based on future monitoring data, results of nitrogen optimization, and/or the final Long Island Sound TMDL.

4. The effluent shall not have concentrations or combinations of contaminants including oil, grease, scum, foam, or floating solids which would cause a violation of the water quality standards of the receiving waters.
5. The discharge shall not cause visible discoloration of the receiving waters.
6. The monthly average concentrations of BOD₅ and total suspended solids in the discharge shall not exceed 15 percent of the monthly average concentrations of BOD₅ and total suspended solids in the influent into the permittee's wastewater treatment facilities. For the purposes of determining whether the permittee is in compliance with this condition, samples from the discharge and the influent shall be taken with appropriate allowance for detention times. See Part I, Special Conditions, Paragraph G.2., Effluent Monitoring.
7. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the permitted flow limitation, the permittee shall submit to the permitting authority projected loadings and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
8. Any action on the part of the Agency of Natural Resources in reviewing, commenting upon or approving plans and specifications for the construction of

wastewater treatment facilities shall not relieve the permittee from the responsibility to achieve effluent limitations set forth in this permit and shall not constitute a waiver of, or act of estoppel against any remedy available to the Agency, the State of Vermont or the federal government for failure to meet any requirement set forth in this permit or imposed by state or federal law.

9. The permittee shall clean the quartz sleeves of the ultraviolet light disinfection system at a frequency which assures that effective disinfection is maintained and shall replace the ultraviolet light disinfection lamps **as necessary to maintain compliance with the *E. coli* bacteria limitation**. The dates and a description of the ultraviolet light disinfection system maintenance activities shall be included on the monthly monitoring report.

B. TOXICITY TESTING

1. The permittee shall complete the following Whole Effluent Toxicity testing:
 - a. One two-species (*Pimephales promelas* and *Ceriodaphnia dubia*) acute/chronic Whole Effluent Toxicity (WET) test, conducted on a 24-hour composite effluent sample taken during the month of August or September 2013.

The results shall be submitted by October 31, 2013.

- b. One two-species (*Pimephales promelas* and *Ceriodaphnia dubia*) acute Whole Effluent Toxicity (WET) test, conducted on a 24-hour composite effluent sample taken during the month of January or February 2015.

The results shall be submitted by March 31, 2015.

2. The permittee shall complete one toxic pollutant scan *on the same sample* as the winter 2015 WET test. Toxic pollutants include the parameters listed in 40 CFR Part 122, Appendix J, Table 2.

The results of toxic pollutant scan shall be submitted to the Department by March 31, 2015.

Based upon the results of these tests or any other tests conducted on this discharge, this permit may be amended to include effluent limitations, or to require additional testing, or to require a Toxicity Reduction Evaluation.

Whole Effluent Toxicity tests shall be conducted in accordance with the Methods recommended by EPA: Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA-821-R-02-012, or the most recent edition) and Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA-821-R-02-013, or the most recent edition).

C. DISSOLVED OXYGEN INSTREAM MONITORING

During the months of **August and September 2013 and 2014**, the permittee shall monitor dissolved oxygen in the Ottawaquechee River. The sampling location shall be at the boat ramp approximately 0.4 miles downstream from the Quechee WWTF outfall. Sampling shall occur once daily, Monday through Friday, and the results submitted as attachments to the September 2013 and September 2014 DMRs.

The Department reserves the right to reopen and amend this permit to include additional monitoring or to require a dissolved oxygen effluent limitation.

D. WASTE MANAGEMENT ZONE

In accordance with 10 V.S.A. Section 1252, this permit hereby establishes a waste management zone that extends from the outfall of the Quechee Wastewater Treatment Facility in the Ottawaquechee River downstream one mile.

E. REAPPLICATION

If the permittee desires to continue to discharge after the expiration of this permit, the permittee shall reapply on the application forms then in use at least 180 days before this permit expires.

Reapply for a Discharge Permit by: March 31, 2017.

F. OPERATING FEES

This discharge is subject to operating fees. The permittee shall submit the operating fees in accordance with the procedures provided by the Secretary.

G. MONITORING AND REPORTING**1. Sampling and Analysis**

The sampling, preservation, handling, and analytical methods used shall conform to regulations published pursuant to Section 304(g) of the Clean Water Act, under which such procedures may be required. Guidelines establishing these test procedures have been published in the Code of Federal Regulations, Title 40, Part 136 (Federal Register, Vol. 56, No. 195, July 1, 1999 or as amended).

Samples shall be representative of the volume and quality of effluent discharged over the sampling and reporting period. All samples are to be taken during normal operating hours. The permittee shall identify the effluent sampling location used for each discharge.

2. Effluent Monitoring

The permittee shall monitor and record the quality and quantity of discharge(s) S/N 001 - outfall, the Quechee Wastewater Treatment Facility, according to the following schedule and other provisions until September 30, 2017.

PARAMETER	MINIMUM FREQUENCY OF ANALYSIS	SAMPLE TYPE
Flow	Continuous	Daily Total
BOD ₅	2 x monthly ⁽¹⁾	24-hour composite
TSS	2 x monthly ⁽¹⁾	24-hour composite
Total Phosphorus	2 x monthly ⁽¹⁾	24-hour composite
Total Kjeldahl Nitrogen (TKN)	2 x monthly ⁽²⁾	24-hour composite
Nitrate/Nitrite Nitrogen (NO _x)	2 x monthly ⁽²⁾	24-hour composite
Settleable Solids	1 x daily	grab ⁽³⁾
<i>Escherichia coli</i> Bacteria	2 x monthly	grab ⁽³⁾
pH	1 x daily	grab ⁽³⁾

⁽¹⁾ Monitoring shall be monthly for BOD, TSS, and Total Phosphorus during the months of October through May.

⁽²⁾ Monitoring shall be monthly for TKN, and NO_x during the months of October through February.

⁽³⁾ Grab samples shall be collected in an alternating manner to be representative of each SBR cell discharge. (For example, on Monday the sample shall be collected as cell #1 discharges, on Tuesday the sample shall be collected as cell #2 discharges, etc.).

3. Annually, by December 31, the permittee shall monitor S/N 001 and submit the results, including units of measurement, as an attachment to the Discharge Monitoring Report form (WR-43) for the month in which the samples were taken for the following parameters:

- Temperature
- Ammonia (as N)
- Dissolved Oxygen
- Oil & Grease
- Total Dissolved Solids

Grab samples shall be used for temperature, ammonia, dissolved oxygen, and oil & grease. Total Dissolved Solids shall be composite sample. Samples shall be representative of the seasonal variation in the discharge.

4. Influent Monitoring

The permittee shall monitor the quality of the influent according to the following schedule and other provisions.

PARAMETER	MINIMUM FREQUENCY OF ANALYSIS	SAMPLE TYPE
Influent Flow	Daily	Daily Total, Min/Max
Influent BOD ₅	1 x monthly	8-hour composite, minimum (1)
Influent TSS	1 x monthly	8-hour composite, minimum (1)

- (1) Composite samples for BOD₅ and TSS shall be taken during the hours of 6:00 A.M. to 6:00 P.M., unless otherwise specified. Eight hours is the minimum period for the composite.

5. Reporting

The permittee is required to submit monthly reports of monitoring results on form WR-43. Reports are due on the 15th day of each month, beginning with the month following the effective date of this permit.

If, in any reporting period, there has been no discharge, the permittee must submit that information by the report due date.

Signed copies of these, and all other reports required herein, shall be submitted to the Secretary at the following address:

Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
1 National Life Drive – Main 2
Montpelier, Vermont 05620-3522

All reports shall be signed:

- a. In the case of corporations, by a principal executive officer of at least the level of vice president, or his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the permit form originates;
- b. In the case of a partnership, by a general partner;

- c. In the case of a sole proprietorship, by the proprietor;
- d. In the case of a municipal, State, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

In addition to the monitoring and reporting requirements given above, daily monitoring of certain parameters for operational control are required by the Agency. Operations reports (reporting form WR-43) shall be submitted monthly.

6. Recording of Results

The permittee shall maintain records of all information resulting from any monitoring activities required, including:

- a. The exact place, date, and time of sampling;
- b. The dates and times the analyses were performed;
- c. The person(s) who performed the analyses;
- d. The analytical techniques and methods used including sample collection handling and preservation techniques;
- e. The results of all required analyses;
- f. The records of monitoring activities and results, including all instrumentation and calibration and maintenance records;
- g. The original calculation and data bench sheets of the operator who performed analysis of the influent or effluent pursuant to requirements of Section I.(A) of this permit.

The results of monitoring requirements shall be reported (in the units specified) on the Vermont reporting form WR-43 or other forms approved by the Secretary.

7. Additional Monitoring

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form WR-43. Such increased frequency shall also be indicated.

H. DRY WEATHER FLOWS

Dry weather flows of untreated municipal wastewater from any sanitary or combined sewers are not authorized by this permit and are specifically prohibited by State and Federal laws and regulations.

I. OPERATION, MANAGEMENT, AND EMERGENCY RESPONSE PLAN

The permittee shall implement the Operation, Management and Emergency Response Plans for the wastewater treatment facility, sewage pump/ejector stations, stream crossings, and sewage collection system as approved by the Agency.

J. EMERGENCY ACTION - ELECTRIC POWER FAILURE

The permittee shall indicate in writing to the Secretary **within 30 days after the effective date of this permit** that the discharge shall be handled in such a manner that, in the event the primary source of electric power to the waste treatment facilities (including pump stations) fails, any discharge into the receiving waters will attempt to comply with the conditions of this permit, but in no case shall the wastes receive less than primary treatment (or in the case of ultraviolet light disinfection systems, not less than secondary treatment) plus disinfection.

The permittee shall either provide an alternative source of power for the operation of its treatment facilities, or demonstrate that the treatment facility has the capacity to store the wastewater volume that would be generated over the duration of the longest power failure that would have affected the facility in the last five years, excluding catastrophic events.

The alternative power supply, whether from a generating unit located at the plant site or purchased from an independent source of electricity, must be separate from the existing power source used to operate the waste treatment facilities. If a separate unit located at the plant site is to be used, the permittee shall certify in writing to the Secretary when the unit is completed and prepared to generate power.

The determination of treatment system storage capacity shall be submitted to the Watershed Management Division upon completion.

K. SEWER ORDINANCE

The permittee shall have in effect a sewer use ordinance acceptable to the Secretary which, at a minimum, shall

1. Prohibit the introduction by any discharger into the permittee's sewerage system or treatment facilities of any pollutant which:
 - a. is a toxic pollutant in toxic amounts as defined in standards issued from time to time under Section 307(a) of the Clean Water Act;
 - b. creates a fire or explosion hazard in the permittee's treatment works;
 - c. causes corrosive structural damage to the permittee's treatment works, including all wastes with a pH lower than 5.0;
 - d. contains solid or viscous substances in amounts which would cause obstruction to the flow in sewers or other interference with proper operation of the permittee's treatment works; or
 - e. in the case of a major contributing industry, as defined herein, contains an incompatible pollutant, as further defined herein, in an amount or concentration in excess of that allowed under standards or guidelines issued from time to time pursuant to Sections 304, 306, and/or 307 of the Clean Water Act.

2. Require 45 days prior notification to the permittee by any person or persons of a:
 - a. proposed substantial change in volume or character of pollutants over that being discharged into the permittee's treatment works at the time of issuance of this permit;
 - b. proposed new discharge into the permittee's treatment works of pollutants from any source which would be a new source as defined in Section 306 of the Clean Water Act if such source were discharging pollutants; or
 - c. proposed new discharge into the permittee's treatment works of pollutants from any source which would be subject to Section 301 of the Clean Water Act if it were discharging such pollutants.
3. Require any industry discharging into the permittee's treatment works to perform such monitoring of its discharge as the permittee may reasonably require, including the installation, use, and maintenance of monitoring equipment methods, to keep records of the results of such monitoring, and to report the results of such monitoring to the permittee. Such records shall be made available by the permittee to the Secretary upon request.
4. Authorize the permittee's authorized representatives to enter into, upon, or through the premises of any industry discharging into the permittee's treatment works to have access to and copy any records, to inspect any monitoring equipment or method required under subsection 3 above, and to sample any discharge into the permittee's treatment works.

The permittee shall notify the Secretary of any discharge specified in subsection 2 above within 30 days of the date on which the permittee is notified of such discharge. This permit may be modified accordingly.

II. GENERAL CONDITIONS

A. MANAGEMENT REQUIREMENTS

1. Facility Modification / Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such a violation may result in the imposition of civil and/or criminal penalties pursuant to 10 V.S.A. Chapters 47, 201, and/or 211. Any anticipated facility expansions or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new permit application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such

changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

In addition, the permittee shall provide notice to the Secretary of the following:

- a. any new introduction of pollutants into the treatment works from a source which would be a new source as defined in Section 306 of the Clean Water Act if such source were discharging pollutants;
- b. except for such categories and classes of point sources or discharges specified by the Secretary, any new introduction of pollutants into the treatment works from a source which would be subject to Section 301 of the Clean Water Act if such source were discharging pollutants; and
- c. any substantial change in volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into such works at the time of issuance of the permit.

The notice shall include:

- i. the quality and quantity of the discharge to be introduced into the system, and
- ii. the anticipated impact of such change in the quality or quantity of the effluent to be discharged from the permitted facility.

2. Noncompliance Notification

In the event the permittee is unable to comply with any of the conditions of this permit due, among other reasons, to:

- a. breakdown or maintenance of waste treatment equipment (biological and physical-chemical systems including, but not limited to, all pipes, transfer pumps, compressors, collection ponds or tanks for the segregation of treated or untreated wastes, ion exchange columns, or carbon absorption units),
- b. accidents caused by human error or negligence, or
- c. other causes such as acts of nature,

the permittee shall notify the Secretary within 24 hours of becoming aware of such condition or by the next business day and shall provide the Secretary with the following information, in writing, within five (5) days:

- i. cause of non-compliance
- ii. a description of the non-complying discharge including its impact upon the receiving water;

- iii. anticipated time the condition of non-compliance is expected to continue or, if such condition has been corrected, the duration of the period of non-compliance;
- iv. steps taken by the permittee to reduce and eliminate the non-complying discharge; and
- v. steps to be taken by the permittee to prevent recurrence of the condition of non-compliance.

3. Operation and Maintenance

All waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

- a. The permittee shall, at all times, maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.
- b. The permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance, and testing functions required to insure compliance with the conditions of this permit; and
- c. The operation and maintenance of this facility shall be performed only by qualified personnel. The personnel shall be certified as required under the Vermont Water Pollution Abatement Facility Operator Certification Regulations.

4. Quality Control

The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at regular intervals to ensure accuracy of measurements, or shall ensure that both activities will be conducted.

The permittee shall keep records of these activities and shall provide such records upon request of the Secretary.

The permittee shall demonstrate the accuracy of the flow measurement device weekly and report the results on the monthly report forms. The acceptable limit of error is $\pm 10\%$.

The permittee shall analyze any additional samples as may be required by the Agency of Natural Resources to ensure analytical quality control.

5. Bypass

The diversion or bypass of facilities (including pump stations) necessary to maintain compliance with the terms and conditions of this permit is prohibited, except where

authorized under the terms and conditions of an Emergency Pollution Permit issued pursuant to 10 V.S.A. §1268.

6. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to waters of the State resulting from non-compliance with any condition specified in this permit, including accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, and shall be submitted to Department representatives upon request. This period shall be extended during the course of unresolved litigation regarding the discharge of pollutants or when requested by the Secretary.

8. Solids Management

Collected screenings, sludges, and other solids removed in the course of treatment and control of wastewaters shall be stored, treated and disposed of in accord with 10 V.S.A., Chapter 159 and with the terms and conditions of any certification, interim or final, transitional operation authorization or order issued pursuant to 10 V.S.A., Chapter 159 that is in effect on the effective date of this permit or is issued during the term of this permit.

9. Emergency Pollution Permits

Maintenance activities, or emergencies resulting from equipment failure or malfunction, including power outages, which result in an effluent which exceeds the effluent limitations specified herein, shall be considered a violation of the conditions of this permit, unless the permittee immediately applies for, and obtains, an emergency pollution permit under the provisions of 10 V.S.A., Chapter 47, §1268. The permittee shall notify the Department of the emergency situation by the next working day.

10 V.S.A., Chapter 47, §1268 reads as follows:

"When a discharge permit holder finds that pollution abatement facilities require repairs, replacement or other corrective action in order for them to continue to meet standards specified in the permit, he may apply in the manner specified by the secretary for an emergency pollution permit for a term sufficient to effect repairs, replacements or other corrective action. The permit may be issued without prior public notice if the nature of the emergency will not provide sufficient time to give notice; provided that the secretary shall give public notice as soon as possible but in any event no later than five days after the effective date of the emergency pollution

permit. No emergency pollution permit shall be issued unless the applicant certifies and the secretary finds that:

- (1) there is no present, reasonable alternative means of disposing of the waste other than by discharging it into the waters of the state during the limited period of time of the emergency;
- (2) the denial of an emergency pollution permit would work an extreme hardship upon the applicant;
- (3) the granting of an emergency pollution permit will result in some public benefit;
- (4) the discharge will not be unreasonably harmful to the quality of the receiving waters;
- (5) the cause or reason for the emergency is not due to wilful or intended acts or omissions of the applicant."

Application shall be made to the Secretary of the Agency of Natural Resources, Department of Environmental Conservation, 1 National Life Drive, Montpelier, VT 05620-3522.

B. RESPONSIBILITIES

1. Right of Entry

The permittee shall allow the Secretary or authorized representative, upon the presentation of proper credentials:

- a. to enter upon the permittee's premises in which an effluent source or any records required to be kept under terms and conditions of the permit are located;
- b. to have access to and copy any records required to be kept under the terms and conditions of the permit;
- c. to inspect any monitoring equipment or method required in the permit; or
- d. to sample any discharge of pollutants.

2. Transfer of Ownership or Control

This permit is not transferable without prior written approval of the Secretary. All application and operating fees must be paid in full prior to transfer of this permit. In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall provide a copy of this permit to the succeeding owner or controller and shall send written notification of the change in ownership or control to the Secretary. The permittee shall also inform the

prospective owner or operator of their responsibility to make an application for transfer of this permit.

This request for transfer application must include at a minimum:

- a. a properly completed application form as provided by the Secretary and the applicable processing fee.
- b. A written statement from the prospective owner or operator certifying:
 - i. The conditions of the operation that contribute to, or affect, the discharge will not be materially different under the new ownership.
 - ii. The prospective owner or operator has read and is familiar with the terms of the permit and agrees to comply with all terms and conditions of the permit.
 - iii. The prospective owner or operator has adequate funding to operate and maintain the treatment system and remain in compliance with the terms and conditions of the permit.
- c. The date of the sale or transfer.

The Secretary may require additional information dependent upon the current status of the facility operation, maintenance, and permit compliance.

3. Confidentiality

Pursuant to 10 V.S.A. §1259(b):

“Any records, reports or information obtained under this permit program shall be available to the public for inspection and copying. However, upon a showing satisfactory to the secretary that any records, reports or information or part thereof, other than effluent data, would, if made public, divulge methods or processes entitled to protection as trade secrets, the secretary shall treat and protect those records, reports or information as confidential. Any records, reports or information accorded confidential treatment will be disclosed to authorized representatives of the state and the United States when relevant to any proceedings under this chapter.”

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. violation of any terms or conditions of this permit;
- b. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

- c. a change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

5. Toxic Effluent Standards

If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under §307(a) of the Federal Clean Water Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, then this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under 10 V.S.A. §1281.

7. Other Materials

Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:

- a. They are not:
 - i. designated as toxic or hazardous under provisions of Sections 307 and 311, respectively, of the Clean Water Act, or
 - ii. known to be hazardous or toxic by the permittee, except that such materials indicated in (a) and (b) above may be discharged in certain limited amounts with the written approval of, and under special conditions established by, the Secretary or his designated representative, if the substances will not pose any imminent hazard to the public health or safety;
- b. The discharge of such materials will not violate applicable water quality standards; and
- c. The permittee is not notified by the Secretary to eliminate or reduce the quantity of such materials entering the watercourse.

8. Navigable Waters

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

9. Civil and Criminal Liability

Except as provided in, "Bypass" (Part II.A., paragraph 5.), "Emergency Action - Electric Power Failures" (Part I, paragraph J.), and "Emergency Pollution Permits" (Part II.A., paragraph 9.), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Civil and criminal penalties for non-compliance are provided for in 10 V.S.A. Chapters 47, 201, and 211.

10. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by §510 of the Clean Water Act.

11. Property Rights

Issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

12. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

13. Authority

This permit is issued under authority of 10 V.S.A. §§ 1258 and 1259 of the Water Pollution Control Act, the Vermont Water Pollution Control Permit Regulations, and Section 402 of the Clean Water Act, as amended. 10 V.S.A. §1259 states that: "No person shall discharge any waste, substance, or material into waters of the State, nor shall any person discharge any waste, substance, or material into an injection well or discharge into a publicly owned treatment works any waste which interferes with, passes through without treatment, or is otherwise incompatible with those works or would have a substantial adverse effect on those works or on water quality, without first obtaining a permit for that discharge from the Secretary".

14. Definitions

For purposes of this permit, the following definitions shall apply.

The Act - The Vermont Water Pollution Control Act, 10 V.S.A. Chapter 47

Annual Average - The highest allowable average of daily discharges calculated as the sum of all daily discharges (mg/l, lbs or gallons) measured during a calendar year divided by the number of daily discharges measured during that year.

Average - The arithmetic means of values taken at the frequency required for each parameter over the specified period.

The Clean Water Act - The federal Clean Water Act, as amended.

Composite Sample - A sample consisting of a minimum of one grab sample per hour collected during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportionally to flow over that same time period.

Daily Discharge - The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.

For pollutants with limitations expressed in pounds the daily discharge is calculated as the total pounds of pollutants discharged over the day.

For pollutants with limitations expressed in mg/l the daily discharge is calculated as the average measurement of the pollutant over the day.

Grab Sample - An individual sample collected in a period of less than 15 minutes.

Incompatible Substance (Pollutant) - Any waste being discharged into the treatment works which interferes with, passes through without treatment, or is otherwise incompatible with said works or would have a substantial adverse effect on these works or on water quality. This includes all pollutants required to be regulated under the Federal Clean Water Act.

Instantaneous Maximum - A value not to be exceeded in any grab sample.

Major Contributing Industry - One that: (1) has a flow of 50,000 gallons or more per average work day; (2) has a flow greater than five percent of the flow carried by the municipal system receiving the waste; (3) has in its wastes a toxic pollutant in toxic amounts as defined in standards issued under Section 307(a) of the Clean Water Act; or (4) has a significant impact, either singly or in combination with other contributing industries, on a publicly owned treatment works or on the quality of effluent from that treatment works.

Maximum Day (maximum daily discharge limitation) - The highest allowable "daily discharge" (mg/l, lbs or gallons).

Mean - The mean value is the arithmetic mean.

Monthly Average - (Average monthly discharge limitation) - The highest allowable average of daily discharges (mg/l, lbs or gallons) over a calendar month, calculated

as the sum of all daily discharges (mg/l, lbs or gallons) measured during a calendar month divided by the number of daily discharges measured during that month.

NPDES - The National Pollutant Discharge Elimination System.

Secretary - The Secretary of the Agency of Natural Resources

State Certifying Agency Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
1 National Life Drive
Montpelier, Vermont 05620-3522

Weekly Average - (Average weekly discharge limitation) - The highest allowable average of daily discharges (mg/l, lbs or gallons) over a calendar week, calculated as the sum of all daily discharges (mg/l, lbs or gallons) measured during a calendar week divided by the number of daily discharges measured during that week.

AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
1 NATIONAL LIFE DRIVE
MONTPELIER, VERMONT 05620-3522

FACT SHEET
(October 2012)

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

NPDES NO: VT0100978
PERMIT NO: 3-1185
PROJECT ID NO: NS97-0316

NAME AND ADDRESS OF APPLICANT:

Town of Hartford
171 Bridge Street
White River Junction, VT 05001

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Quechee Wastewater Treatment Facility
Route 4, Izzo Place
Hartford, Vermont

RECEIVING WATER: Ottauquechee River

CLASSIFICATION: Class B with a waste management zone. Class B waters are suitable for bathing and recreation, irrigation and agricultural uses; good fish habitat; good aesthetic value; acceptable for public water supply with filtration and disinfection. A waste management zone is a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings.

I. Proposed Action, Type of Facility, and Discharge Location

The above named applicant applied on March 15, 2010 with a revised application submitted on May 29, 2012 to the Vermont Department of Environmental Conservation for renewal of the permit to discharge into the designated receiving water. At this time the Department has made a tentative decision to reissue the discharge permit. The facility is engaged in the treatment of municipal wastewater. The discharge is from the outfall of the Town of Hartford's Quechee Wastewater Treatment Facility to the Ottauquechee River.

II. Description of Discharge

This permit authorizes an increase in the discharge from 0.300 MGD to 0.475 MGD of treated and disinfected municipal wastewater from the Quechee WWTF to the Ottauquechee River. The discharge is a continuous year round discharge.

A quantitative description of the discharge in terms of significant effluent parameters is based on state and federal laws and regulations, the discharge permit application, and the recent self-monitoring data.

The complete application, draft permit, and other information used in the development of this permit are on file and may be inspected at the VTDEC, Watershed Management Division, 1 National Life Drive, Main 2, Montpelier, VT. Copies will be made at a cost based on the current Secretary of State Official Fee Schedule for Copying Public Records from 8:00 AM to 4:30 PM, Monday through Friday. The draft permit and fact sheet may also be viewed on the Division's website at <http://www.anr.state.vt.us/dec/waterq/ww/htm/notices.htm>

III. Limitations and Conditions

The effluent limitations of the permit, the monitoring requirements, and any implementation schedule (if required), may be found on the following pages of the permit:

Effluent Limitations:	Pages 2 and 3 of 20
Monitoring Requirements:	Pages 5 through 7 of 20

IV. Permit Basis and Explanation of Effluent Limitation Derivation

History and Summary:

The Town of Hartford owns and operates the Quechee Wastewater Treatment Facility. Because the Ottauquechee River downstream of the discharge is water quality limited for dissolved oxygen due to the close proximity of Dewey's Mills Dam, a tertiary treatment facility was constructed in the early 1970's in order to meet tertiary (summertime) BOD, and TSS limitations, and total phosphorus limitations. That facility consisted of a facultative lagoon system, clarifier, polishing filter, and chlorine disinfection. An upgraded and expanded facility, which was completed in late 2010, consists of sequential batch reactors (SBR) for secondary treatment, filtration, and an ultraviolet light disinfection system.

The facility serves the Village of Quechee and the Quechee Lakes area bordered by the White River to the north, Pomfret to the West, Hartland to the south, and White River Junction to the east. The forty miles of collection system includes ten lift stations which connect to the Main Pump Station. Most of the system is comprised of asbestos cement pipe except the newer PVC sections.

Receiving Water:

The Ottauquechee River downstream of the Quechee WWTF discharge is a Class B water and designated as Cold Water Fish Habitat (see Appendix A, Vermont Water Quality Standards). A one mile Waste Management Zone has been established in the river below the WWTF outfall pursuant to 10 V.S.A., Section 1252.

Summer 7Q10 flow of the Ottauquechee River at the point of discharge is 20.7 cfs, resulting in an in-stream waste concentration of 0.034 using the design flow of the expanded facility (0.475 MGD). The hardness of the Ottauquechee River is estimated to be 77 mg/l CaCO₃ at the point of discharge using 2010 downstream data. The above data is utilized to determine compliance with Vermont's aquatic biota based metals criteria as specified in Section 3-01 B.10.c. and Appendix C of the Vermont Water Quality Standards.

Antidegradation Discussion: see attachment

Flow - The effluent flow limitation is increased from 0.300 to 0.475 MGD, annual average, representing the facility's new design flow. The facility maintains a constant discharge.

Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS) – The 'summertime' (June through September) BOD and TSS mass limitations are 25 lbs/day, monthly average, and 37.5 lbs/day, weekly average, and are unchanged from the previous permit. The 'wintertime' (October through May) BOD and TSS mass limitations are 75 lbs/day, monthly average, and 113 lbs/day, weekly average, and are unchanged from the previous permit. These mass limitations are based on concentration limitations and the previously permitted flow from the WWTF (0.300 MGD). These limitations are unchanged with the completion of the upgrade and expansion project.

The 'summertime' BOD and TSS effluent concentration limits are 10 mg/l, monthly average, and 15 mg/l, weekly average. The 'wintertime' BOD and TSS effluent concentration limits are 30 mg/l, monthly average, and 45 mg/l, weekly average. The 'summertime' limitations are based on the tertiary design of the previous treatment system. The 'wintertime' limitations are set in accordance with the limitations specified for secondary treatment in 40 CFR Part 133.102. These effluent limitations are unchanged with the completion of the upgrade and expansion project. The permittee must comply with the mass limitation or the concentration limitation, whichever is more restrictive. As a result, the anti-backsliding provisions of 40 CFR 122.44 are met.

In addition, the current permit contains a 20 mg/l maximum day 'summertime' BOD and TSS limitation and a 50 mg/l, maximum day, 'wintertime' BOD and TSS limitation. These are limitations which the Agency implements to supplement the federal technology based limitations to prevent a gross one-day permit effluent violation to be offset by multiple weekly and monthly sampling events which would enable a discharger to comply with the weekly average and monthly average permit limitations. These limitations are unchanged with the completion of the upgrade and expansion project.

The 'summertime' sampling frequency for BOD and TSS is twice per month and once per month in the 'wintertime' and are unchanged from the previous permit.

pH - The pH limitation remains at 6.5 - 8.5 Standard Units as specified in Section 3-01 B.9. in the Vermont Water Quality Standards. Monitoring remains at daily.

Settleable Solids - The limitation of 1.0 ml/l instantaneous maximum and daily monitoring remain unchanged from the previous permit. This numeric limit was established in support of the narrative standard in Section 3-01 B.5. of the Vermont Water Quality Standards.

Total Phosphorus – Because of potential dissolved oxygen water quality violations in the Dewey's Mills impoundment, a tertiary treatment facility was constructed (1970's) to meet permit limitations of 1.0 mg/l, monthly average and 2.5 lbs/day, monthly average. The upgraded facility also is a tertiary facility (advanced treatment followed by filtration). These limits are unchanged from the previous permit. Monitoring remains at twice monthly during the months June through September and monthly during the "winter" months.

Total Nitrogen - EPA, in a November 10, 2011 letter to the Agency indicated that Vermont must establish total nitrogen limitations in permits such that the total nitrogen load from all facilities in the Connecticut River watershed is consistent with the requirements of the Long Island Sound Total Maximum Daily Load (TMDL).

The proposed permit includes an interim Total Nitrogen limit of 39.6 pounds per day, annual average. This limit is based on a concentration limit of 10 mg/l which was the design engineer's performance specification confirmed in an October 2, 2012 letter to the Agency. Existing data collected over the past two years as well as a recent literature search indicates that the facility is able to meet this limit.

The permit includes a reopener provision for TN as follows:

"The Department reserves the right to reopen and amend this permit to include an alternate TN limitation based on future monitoring data, results of nitrogen optimization and/or the final Long Island Sound TMDL."

In addition, at EPA's request, monitoring will be required for Total Kjeldahl Nitrogen and Nitrate/Nitrite (NO_x) Nitrogen. The sum of TKN and Nitrate/Nitrite shall be calculated in order to determine Total Nitrogen. Weekly monitoring is required March through September and monthly from October through February.

E. coli Bacteria - The *E. coli* limitation is 77 colonies/100 ml as specified in Section 3-04 B.3., Vermont Water Quality Standards. Monitoring is proposed to be changed from monthly to twice monthly consistent with similarly sized facilities with UV disinfection.

Whole Effluent Toxicity (WET) and Priority Pollutant Testing - 40 CFR Part 122.44(d)(1) requires the Department to assess whether the discharge causes, has the reasonable potential to cause, or contribute to an excursion above any narrative or numeric water quality criteria. Whole Effluent Toxicity testing is being required in accordance with the 1994 Vermont Toxic Discharge Control Strategy. The intent of the WET testing is to confirm the results of the WET testing conducted by the Town in September 2008. Those results indicated that this discharge did not have the potential to cause an instream toxic impact. Confirmation that those findings are still valid is required by the Vermont Toxic Discharge Control Strategy at permit renewal.

The proposed permit includes one two-species acute/chronic WET test in August or September 2013 and one two-species acute WET test in January or February 2015. In addition, the permit includes one toxic pollutant scan *on the same sample* as the winter 2015 WET test. Toxic pollutants include the parameters listed in 40 CFR Part 122, Appendix J, Table 2.

If the results of these tests indicate a reasonable potential to cause an instream toxic impact, the Department may require additional testing, establish a WET limit, or require a Toxicity Reduction Evaluation.

Dissolved Oxygen Instream Monitoring – The permit includes a seasonal monitoring requirement for dissolved oxygen. During the months of August and September 2013 and 2014, instream D.O. is required to be measured once daily (Monday through Friday only) at the boat ramp location approximately 0.4 miles downstream of the outfall and just upstream of the impoundment. (See attached Reasonable Potential Determination for further discussion.)

Additional Monitoring - For all facilities with a design flow of greater than 0.1 MGD, 40 CFR § 122.21(j), Application for a permit, requires the submittal of effluent monitoring data for those parameters identified in Condition I.G.3. of the permit.

Samples must be collected once annually during various seasons (i.e. include each of the four quarters during the permit period) and the results submitted by December 31 of each year.

Waste Management Zone - As defined under 10 V.S.A. §1251(16), a waste management zone is “a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings. Throughout the receiving waters, water quality criteria must be achieved but increased health risks exist due to the authorized discharge”.

The previous permit established a waste management zone in the Ottauquechee River beginning at the outfall of the Quechee WWTF and extending downstream for one mile pursuant to 10 VSA, Section 1252 b.-c. The Department has evaluated whether the existing one mile waste management zone is sufficient to accommodate the increased discharge (0.475 MGD) utilizing the Departments “Mathematical Model for WMZ Length Determination”. Based on that evaluation the Department has concluded that the

existing waste management zone can accommodate the increased discharge, therefore the draft permit proposes to maintain the existing one mile waste management zone in the Ottauquechee River.

Electric Power Failure - Within 30 days of the effective date of the permit, the permittee must submit to the Department, updated documentation addressing how the discharge will be handled in the event of an electric power outage. The effluent must receive a minimum of primary treatment (or in the case of ultraviolet light disinfection systems, not less than secondary treatment) plus disinfection.

Operation, Management, and Emergency Response Plans - As required by the revisions to 10 V.S.A. Section 1278, promulgated in the 2006 legislative session, Condition I.I. has been included in the proposed permit. This condition requires that the permittee implement the Operation, Management and Emergency Response Plans, as approved by the Agency, for the wastewater treatment facility, sewage pump/ejector stations, stream crossings, and collection system.

V. Procedures for Formulation of Final Determinations

The public comment period for receiving comments on this draft permit is from October 29 through November 28, 2012 during which time interested persons may submit their written views on the draft permit. All written comments received by 4:30 PM on November 28, 2012 will be retained by the Department and considered in the formulation of the final determination to issue, deny or modify the draft permit. The period of comment may be extended at the discretion of the Department.

Written comments should be sent to:

Vermont Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
1 National Life Drive - Main 2
Montpelier, VT 05620-3522

Comments may also be faxed to: 802-828-1544 or submitted by e-mail using the e-mail comment provisions included at <http://www.anr.state.vt.us/dec/waterq/ww/htm/notices.htm>

Any interested person or groups of persons may request or petition for a public hearing with respect to this draft permit. Any such request or petition for a public hearing shall be filed within the public comment period described above and shall indicate the interest of the party filing such request and the reasons why a hearing is warranted.

The Department will hold a hearing if there is significant public interest in holding such a hearing. Any public hearing brought in response to such a request or petition will be held in the geographical area of the proposed discharge or other appropriate area, at the discretion of the Department and may, as appropriate, consider related groups of draft

permits. Any person may submit oral or written statements and data concerning the draft permit at the public hearing. The Department may establish reasonable limits on the time allowed for oral statements and may require the submission of statements in writing. All statements, comments, and data presented at the public hearing will be retained by the Department and considered in the formulation of the final determination to issue, deny, or modify the draft permit.



Quechee
WTF

Google earth



Town of Hartford
Quechee Wastewater Treatment Facility
142 Izzo Place, Hartford, VT

Antidegradation Policy (WQS Section 1-03), Interim Antidegradation Implementation Procedure (10/12/2010), and Discharge Policy (WQS Section 1-04)

Section 1-03.B.1. of the Vermont Water Quality Standards (and Section VII.F. of the Interim Antidegradation Procedure) require that the existing uses of the receiving waters be protected and maintained and the Secretary must consider the following factors in making a determination:

- a. Aquatic biota and wildlife that utilize or are present in the waters;
- b. Habitat that supports existing aquatic biota, wildlife, or plant life;
- c. The use of the waters for recreation or fishing;
- d. The use of the water for water supply, or commercial activity that depends directly on the preservation of an existing high level of water quality; and
- e. with regarding to the factors considered under paragraphs (a) and (b) above, evidence of the use's ecological significance in the functioning of the ecosystem or evidence of the use's rarity.

These factors have been considered in conjunction with this discharge and it has been determined that the existing uses of the receiving water will be maintained. The existing waste management zone is appropriately sized for the proposed flow increase (from 0.300 to 0.475 MGD).

Section 1-03.C.2 of the Vermont Water Quality Standards requires that higher quality water be protected and the risk minimized to existing and designated uses. In addition, a limited reduction in the existing higher quality of the waters may only be allowed if:

- a. the adverse economic and social impacts on the people of the state specifically resulting from the maintenance of the higher quality of the waters would be substantial and widespread;
- b. these adverse impacts would exceed the environmental, economic, social, and other benefits of maintaining the higher water quality; and
- c. there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources, and all cost effective and reasonable accepted agricultural practices and best management practices, as appropriate for nonpoint source control, consistent with state law.

The Quechee Wastewater Treatment Facility provides sewage treatment for close to 2000 users. In 2010, there was a major upgrade to sequencing batch reactor (SBR) technology and now the Town is seeking an expansion of the facility. Except for the volume of the discharge (flow), the permitted pollutant limitations in this discharge will not change from those currently permitted and there will be no measurable change in the quality of the receiving water. Given the improvements in technology (aerated lagoon to SBR technology with filtration and UV disinfection) the quality of the effluent will improve significantly, including higher removal capabilities even for other trace pollutants (i.e. ammonia) and pollutants which may be associated with particulates/solids (i.e. metals). In addition, since the method of disinfection has been changed from chlorine to

ultraviolet disinfection, a toxic pollutant has been eliminated from the discharge.

Section VII. of the Interim Antidegradation Implementation Procedure applies to NPDES permits. Specifically, Section VII. E. Tier 2 – Protection of High Quality Waters applies to this application for a flow increase. The expanded and upgraded facility will utilize superior treatment technology and will continue to meet the existing permitted pollutant limits (with the exception of chlorine which has been eliminated from the discharge and replaced by UV disinfection). In addition, the existing one mile waste management zone can accommodate the increase in flow, therefore the protection of high quality waters is being maintained. Also, because there is no reduction to the high quality waters, an assessment of cumulative impacts and a socio-economic justification test are not necessary.

Per Section 1-04.A of the Vermont Water Quality Standards (*Discharge Criteria*), new discharges of wastes may be allowed only when all the following criteria are met:

1. The proposed discharge is in conformance with all applicable provisions of these rules including the classification of the receiving waters adopted by the Board as set forth in Chapter 4 of these rules.
2. There is neither an alternative method of waste disposal, nor an alternative location for waste disposal, that would have a lesser impact on water quality including the quality of groundwater, or if there is such an alternative method or location, it would be clearly unreasonable to require its use.
3. The design and operation of any waste treatment or disposal facility is adequate and sufficiently reliable to ensure the full support of uses and to ensure compliance with these rules and with all applicable state and federal treatment requirements and effluent limitations.
4. Except as provided for in 10 V.S.A. §1259(d) and (f), the discharge of wastes other than nonpolluting wastes and stormwater runoff is prohibited in Class A waters regardless of the degree of treatment provided.
5. Except as provided for in 10 V.S.A. §1259, the discharge of wastes that, prior to treatment, contained organisms pathogenic to human beings into waters is prohibited.
6. The receiving waters will have sufficient assimilative capacity to accommodate the proposed discharge.
7. Assimilative capacity has been allocated to the proposed discharge consistent with the classification set forth in Chapter 4 of these rules.
8. The discharge of wastes to the thermocline or hypolimnion of any lake in manner that may prevent full support of uses is prohibited.
9. The discharge of sewage into Class B waters shall not pose more than a negligible risk to public health. Compliance with this criterion shall include as assessment of both the level and reliability of treatment achieved and the impact of the discharge on the water quality of the receiving waters.

The Agency finds that these criteria have been met. Specifically,

1. The discharge conforms with the classification of the receiving water.
2. Due to the volume of water and site limitations, infiltration or spray irrigation is not a feasible alternative for disposal of this wastewater. Therefore, the only alternative is to discharge the wastewater to waters of the State.
3. Based on the current design of the facility, the pollutants will not result in any measurable

change in the receiving water and will ensure full support of all uses. (In fact, the use of chlorine will no longer be utilized for disinfection by the facility thus removing a toxic pollutant from the discharge.)

4. The discharge is not to a Class A water.
5. The discharge, prior to treatment, does contain organisms pathogenic to humans but the discharge will continue to receive adequate disinfection and this discharge can be accommodated in the existing one mile waste management zone.
6. Because there is no increase in permitted pollutants, adequate assimilative capacity exists to accommodate this discharge.
7. See 6. above.
8. This facility does not discharge to a lake.
9. The design of the facility's disinfection system was reviewed by the Department and it has been determined that the level and reliability of treatment meets or exceeds its ability to meet the *E coli* water quality standard and permitted effluent limitation.

**Agency of Natural Resources
Department of Environmental Conservation**

**Watershed Management Division
Building 10 North
802-338-4816**

MEMORANDUM

To: Pete LaFlamme, Director, WSMD

From: Neil Kamman, Manager, Monitoring, Assessment and Planning Program

Cc: Rick Levey, MAPP
Carol Carpenter, Wastewater Program

Date: October 22, 2012

Subject: MAPP Evaluation of the Reasonable Potential Determination for the Quechee WWTF Facility

MAPP has completed evaluation of the draft permit limits for the Quechee WWTF facility in Quechee, Vermont, following the draft procedure outlining WWM-WSMD roles and responsibilities prepared during 2010. This memo provides MAPP's concurrence with the permit limits set forth by the draft permit for Quechee WWTF facility prepared by the Wastewater Management Section (WWM).

Facility:

Quechee Wastewater Treatment Facility
Permit No. 3-1185
NPDES No. VT0100978

Hydrology for Quechee Wastewater Treatment Facility used in this evaluation:

Design Flow: 0.475 MGD = 0.736 CFS
7Q10 = 20.7 CFS
LMM = 70.79 CFS
IWC-7Q10 = 0.034 (<1%)
IWC-LMM = 0.010 (<1%)

Receiving Water:

Ottauquechee River, Quechee, VT
Facility Location: Lat 43.64552 Long. 072.41573 (NAD 83)

The Ottauquechee River downstream of the Quechee WWTF discharge is a Class B water and designated as Cold Water Fish Habitat (see Appendix A, Vermont Water Quality Standards). A one mile Waste Management Zone has been established in the river below the WWTF outfall pursuant to 10 V.S.A., Section 1252.

WQD Ambient Chemistry Data for the Ottauquechee River above and below the Quechee Wastewater Treatment Facility:

There is ambient chemistry data available from the VTDEC 2010 Wastewater Treatment Facility Study that characterized the water quality and chemistry above and below 20 wastewater facilities in Vermont (VTDEC 2011). Data is also available below the Quechee outfall from the Ottauquechee River Partnership (ORG).

Results of water chemistry measures for the VTDEC 2010 wastewater study for the following parameters: pH, dissolved oxygen, turbidity, alkalinity, conductivity, color, chlorides, sulfates, and nutrients: total phosphorus (TP), dissolved phosphorus (TDP), total nitrogen (TN), nitrate + nitrite (NOX) and ammonia (NH₃) are summarized in **Table 1**. Water samples from this study were also tested for total metals **Tables 2 & 3** provide results for the following metals: calcium, magnesium, sodium, potassium, aluminum, antimony, arsenic, beryllium, cadmium, chromium, copper, manganese, nickel, iron, lead, selenium, silver, thallium, zinc and total hardness.

Water quality measures from the Ottauquechee River Partnership are presented in **Table 4** and included: chloride, E. coli, total nitrogen (TN) and turbidity.

TP values were well below the VTDEC Proposed Nutrient Criteria for Lakes and Wadeable Streams (VTDEC 2009) for total phosphorus. Proposed criteria for warm-water medium gradient streams (WWMG) such as this section of the Ottauquechee River are 0.044 mg/l –TP. TP values observed above and below the outfall were very similar, the highest value observed was 0.0142 mg/l – TP. TN values were also very similar above and below the outfall; the highest value observed was 0.37 mg/l –TN. This correlated with high turbidity (7/07/11 ORG data) as well indicating a high flow event. The TN value observed is well below the proposed nutrient criteria of 0.75 mg/l-TN for medium sized high gradient streams (MHG), TN criteria for WWMG streams have not been proposed.

There were no exceedances of the metal analytes listed in **Tables 2 & 3** above or below the outfall; most of the target analyte metals above and below the outfall were below the detection limit.

E. coli measurements (4 samples) acquired by the ORG in 2011 are shown in **Table 4**. These data, while insufficient for listing purposes under the Vermont Assessment and Listing Methodology, indicate occasional exceedances of the Vermont water quality criterion of 77 *E. coli*/100ml. The geometric mean concentration is 58 *E. coli*/100ml based on four samples. At the design flow IWC of 3.4%, the maximum possible increase in *E. coli*, conservatively assuming a consistent concentration of 76 *E. coli*/100ml, is 3 *E. coli*/100ml, resulting in a geometric mean of 60 *E. coli*/100ml. MAPP supports the inclusion of bi-monthly monitoring for *E. coli* bacteria in the permit.

Table 1: Concentrations of surface-water chemistry above and below the Quechee Wastewater Treatment Facility. (River Mile 5.7 and 5.9 refer to stations below and above outfall respectively).

Date	River Mile	Water Temp C	pH	Alk mg/L	Cond umhos	Color	DO mg/L	DO %	Turb NTU	TP ug/L	TDP ug/L	Chloride mg/L	TSO4 mg/L	TN mg-N/L	TNOX mg-N/L	TNH3 mg-N/L
8/20/2010	5.7	21.13	7.92	72.9	221	15	5.9	68.9	1.67	13.8	6.25	20.6	6	0.26	0.09	<0.05
	5.9	20.86	7.81	72.7	219	12.5	7.6	87.1	1.81	13.8	8.45	19.5	6.09	0.24	0.09	<0.05
9/16/2010	5.7	15.1	7.94	72.9	234	20	-	-	1.05	14.2	8.32	23.5	7.01	0.31	0.18	<0.05
	5.9	14.2	7.42	75.1	234	17.5			0.76	14.1	7.57	21.7		0.3	0.19	<0.05
11/16/2010	5.7	6.9	7.98	53.3	146	12.5	7.7	64.6	0.46	8.27	6.03	8.69	6.26	0.2	0.13	<0.05
	5.9	6.9	7.98	53.2	146	10	8.6	72.3	0.35	8.47	6.17	8.1	6.18	0.18	0.13	<0.05

Table 2: Concentrations of surface-water metal chemistry above and below the Hartford- Quechee Wastewater Treatment Facility. (River Mile 5.7 and 5.9 refer to stations below and above outfall respectively).

Date	River Mile	Total Calcium (mg/L)	Total Magnesium (mg/L)	Total Potassium (mg/L)	Total Sodium (mg/L)	Total Aluminum (ug/L)	Total Arsenic (ug/L)	Total Cadmium ug/L	Total Silver (ug/L)
8/20/2010	5.7	24	3.56	1.4	13.4	27	<1	<1	<1
	5.9	23.9	3.56	1.21	12.6	23.5	<1	<1	<1
9/16/2010	5.7	25.6	3.87	1.51	15.3	16.8	<1	<1	<1

Table 3: Concentrations of surface-water metal chemistry above and below the Hartford- Quechee Wastewater Treatment Facility. (River Mile 5.7 and 5.9 refer to stations below and above outfall respectively).

Date	River Mile	Total Antimony ug/L	Total Chromium ug/L	Total Copper ug/L	Total Iron ug/L	Total Lead ug/L	Total Manganese ug/L	Total Nickel ug/L	Total Selenium ug/L	Total Zinc ug/L	Total Hardness mg/L
8/20/2010	5.7	< 10	< 5	< 10	162	< 1	62.7	< 5	< 5	< 50	74.5
	5.9	< 10	< 5	< 10	159	< 1	59.4	< 5	< 5	< 50	74.2
9/16/2010	5.7	< 10	< 5	< 10	114	< 1	25.7	< 5	< 5	< 50	80
	5.9	< 10	< 5	< 10	110	< 1	20.9	< 5	< 5	< 50	84

Table 4: Concentrations of surface-water chemistry below the Quechee Wastewater Treatment Facility; Ottaquechee River Partnership Monitoring Data -Location OTR 70.

Date	Chloride mg/L	E. Coli Mpn/100 ml	Total Nitrogen mg-N/L	Turbidity (NTU)
7/07/2011	15.8	1300	0.37	7.29
7/21/2011	21.8	22	0.34	1.7
7/21/2011 (Duplicate)	22.6	28	0.32	1.7
8/04/2011	21.2	38	0.26	1.56
8/18/2011	13.9	111	0.13	1.74

Dissolved Oxygen:

Because of potential dissolved oxygen water quality violations in the Dewey's Mills impoundment, dissolved oxygen modeling was conducted by VHB Pioneer in 2010 in order to assess the Quechee Wastewater Treatment Facility's impact, if any, on water quality during summer low flow conditions. The models predicted slight decreases in the DO concentration from the Quechee WWTF facility to the Dewey Mills dam and beyond. The results were compared to the minimum dissolved oxygen levels required by the VWQS, showing the current discharge rates would comply with standards. The Vermont Water Quality Standards specifies that dissolved oxygen concentrations in cold water fish habitat waters should be no less than 6.0 mg/l and 70 percent saturation for this reach of river. The modeling results at design flow 0.475 MGD predicted 6.93 mg/l dissolved oxygen.

Limited dissolved oxygen data collected during the VTDEC 2010 Wastewater study presented in Table 1 did show DO and percent saturation slightly below VWQS below the outfall during the August 20th sampling event. DO decreased from 7.6 mg/l above the facility to 5.9 mg/l below the outfall. Percent saturation decreased from 87.1 above the facility to 68.9 below the outfall. Input values used in the DO model were modified to include these ambient measurements to make certain that the modeled instream DO downstream of the facility is not consistently below 70%/6 mg/L. While this criteria is satisfied, MAPP supports WWM's inclusion of instream monitoring for DO during summer low flow as part of the permit. Instream DO monitoring is proposed to occur daily (Monday through Friday) at a site (boat ramp) located just above the impoundment during the months of August and September for the first two years of the permit term.

Biological Assessments:

The receiving waters of this warm water moderate gradient reach are non-wadeable; as such biological assessments have not been conducted above or below the outfall.

Total Nitrogen:

Total Nitrogen - EPA, in a November 10, 2011 letter to the Agency indicated that Vermont must establish total nitrogen limitations in permits such that the total nitrogen load from all facilities in the Connecticut River watershed is consistent with the requirements of the Long Island Sound Total Maximum Daily Load (TMDL).

The proposed permit includes an interim Total Nitrogen limit of 39.6 pounds per day, annual average. This limit is based on a concentration limit of 10 mg/l which was the design engineer's performance specification confirmed in an October 2, 2012 letter to the Agency. Existing data collected over the past two years as well as a recent literature search indicate that the facility is able to meet this limit.

In addition, at EPA's request, monitoring will be required for Total Kjeldahl Nitrogen and Nitrate/Nitrite (NOx) Nitrogen. The sum of TKN and Nitrate/Nitrite shall be calculated in order to determine Total Nitrogen. Weekly monitoring is required March through September and monthly from October through February.

Instream Nitrogen Concentrations were calculated using the low monthly median flow (LMM) of 70.7 CFS at design flow of 0.736 CFS (0.475MGD) and assuming effluent nitrogen concentration of 10.0 mg/l. The calculated nitrogen concentration at these conditions was 0.10 mg/l, which suggests a very minor augmentation of instream ambient nitrogen concentrations in receiving waters.

Total Phosphorus:

Because of potential dissolved oxygen water quality violations in the Dewey's Mills impoundment, a tertiary treatment facility was constructed (1970's) to meet permit limitations of 1.0 mg/l, monthly average and 2.5 lbs/day, monthly average. The upgraded facility also is a tertiary facility (advanced

treatment followed by filtration). These limits are unchanged from the previous permit. Monitoring remains at twice monthly during the months June through September and monthly during the "winter" months.

Instream Phosphorus Concentrations were calculated using the low monthly median flow (LMM) of 70.7 CFS at design flow of 0.736 CFS (0.475 MGD) and assuming effluent phosphorus concentration of 1.0 mg/l. The calculated phosphorus concentration at these conditions attributable to discharge was 0.0102 mg/l. This calculated concentration is very close to the highest TP concentrations observed below the Quechee outfall during the 2010 wastewater study, which was 0.0142 mg/l-TP.

Whole Effluent Toxicity (WET) and Priority Pollutant Testing:

Whole Effluent Toxicity (WET) and Priority Pollutant Testing - 40 CFR Part 122.44(d)(1) requires the Department to assess whether the discharge causes, has the reasonable potential to cause, or contribute to an excursion above any narrative or numeric water quality criteria. Whole Effluent Toxicity testing is being required in accordance with the 1994 Vermont Toxic Discharge Control Strategy. The intent of the WET testing is to confirm the results of the WET testing conducted by the Town in September 2008. Those results indicated that this discharge did not have the potential to cause an instream toxic impact. Confirmation that those findings are still valid is required by the Vermont Toxic Discharge Control Strategy at permit renewal.

The proposed permit includes one two-species acute/chronic WET test in August or September 2013 and one two-species acute WET test in January or February 2015. In addition, the permit includes one toxic pollutant scan on the same sample as the winter 2015 WET test. Toxic pollutants include the parameters listed in 40 CFR Part 122, Appendix J, and Table 2.

If the results of these tests indicate a reasonable potential to cause an instream toxic impact, the Department may require additional testing, establish a WET limit, or require a Toxicity Reduction Evaluation.

General Considerations:

The Town of Hartford owns and operates the Quechee Wastewater Treatment Facility. Because the Ottawaquechee River downstream of the discharge is water quality limited for dissolved oxygen due to the close proximity of Dewey's Mills Dam, a tertiary treatment facility was constructed in the early 1970's in order to meet tertiary (summertime) BOD, and TSS limitations, and total phosphorus limitations. That facility consisted of a facultative lagoon system, clarifier, polishing filter, and chlorine disinfection. An upgraded and expanded facility, which was completed in late 2010, consists of sequential batch reactors (SBR) for secondary treatment, filtration, and an ultraviolet light disinfection system.

The hardness of the Ottawaquechee River is estimated to be 77 mg/l CaCo₃ at the point of discharge using 2010 downstream data. The above data is utilized to determine compliance with Vermont's aquatic biota based metals criteria as specified in Section 3-01 B.10.c. and Appendix C of the Vermont Water Quality Standards. Due to the high dilution of the receiving waters and the domestic nature of this discharge there are no concerns for metals exceeding criteria.

Conclusion:

After review of all available information it has been determined that there is not a reasonable potential for the discharge to cause or contribute to a water quality violation, and as such, the development of a WQBEL's will not be necessary. Given the relatively small volume of this discharge and the high dilution (IWC @7Q10 <1%) the Monitoring, Assessment and Planning Program opinion is that this discharge will not cause, have a reasonable potential to cause, or contribute to an instream toxic impact or instream excursion above the water quality criteria.



Vermont Department of Environmental Conservation

Watershed Management Division
1 National Life Drive, Main-2
Montpelier VT 05620-3522

Agency of Natural Resources

[phone] 802-490-6182

[fax] 802-828-1544

October 25, 2012

Mary E Hill, Town Clerk
Town of Hartford
171 Bridge Street
White River Junction, VT 05001

Dear Ms Hill:

Enclosed is a copy of a public notice regarding the public comment period for the issuance of a **draft discharge permit authorizing the discharge of municipal wastewater from the Quechee Wastewater Treatment Facility**. Please post in a public place for disseminating this information to the local officials and residents. We are also sending copies of this notice to other local officials and interested persons who have asked to be included on our mailing list.

Sincerely,

A handwritten signature in blue ink that reads "Ernest F. Kelley".

Ernest F Kelley, Manager
Wastewater Programs

Enclosures

AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
1 NATIONAL LIFE DRIVE
MONTPELIER, VERMONT 05620-3522

NOTICE: DRAFT DISCHARGE PERMIT

PUBLIC NOTICE NUMBER: 3-1185

PUBLIC COMMENT PERIOD: October 29 - November 28, 2012

PERMITTEE INFORMATION

PERMITTEE NAME: Town of Hartford

PERMITTEE ADDRESS: 171 Bridge Street
White River Junction, VT 05001

PERMIT NUMBER: 3-1185

PROJECT ID NUMBER: NS97-0316

DISCHARGE INFORMATION

NATURE: Tertiary treated municipal wastewater

VOLUME: 0.475 MGD, annual average

RECEIVING WATER: Ottauquechee River

EXPIRATION DATE: September 30, 2017

DESCRIPTION: This is a draft discharge permit proposed for issuance to the Town of Hartford for a discharge from the Quechee Wastewater Treatment Facility to the Ottauquechee River. The permit proposes a hydraulic increase from 0.300 to 0.475 MGD. The draft permit does not authorize any discharge increase in permitted pollutant loadings. This is a permit renewal.

TENTATIVE DETERMINATIONS

Tentative determinations regarding effluent limitations and other conditions to be imposed on the pending Vermont permit have been made by the State of Vermont Agency of Natural Resources (VANR). The limitations imposed will assure that the Vermont Water Quality Standards and applicable provisions of the Federal Clean Water Act, PL 92-500, as amended, will be met.

FURTHER INFORMATION

The complete application, proposed permit, and other information are on file and may be inspected by appointment at 1 National Life Drive – Main 2, Montpelier, Vermont. Copies, obtained by calling 802-490-6182, will be made at a cost based upon the current Secretary of State Official Fee Schedule for Copying Public Records from 7:45 a.m. to 4:30 p.m., Monday through Friday. The draft permit and fact sheet may also be viewed on the Division's website at <http://www.vtwaterquality.org/wastewater.htm>

PUBLIC COMMENTS/PUBLIC HEARINGS

Written public comments on the proposed permit are invited and must be received on or before the close of business day (4:30 pm) **November 28, 2012** to the Agency of Natural Resources, Department of Environmental Conservation, Watershed Management Division, 1 National Life Drive – Main 2, Montpelier, Vermont 05620-3522. Comments may also be faxed to 802-828-1544 or submitted by e-mail using the e-mail comment provisions included at <http://www.vtwaterquality.org/wastewater.htm>

All comments received by the above date will be considered in formulation of the final determinations. During the notice period, any person may submit a written request to this office for a public hearing to consider the proposed permit. The request must state the interest of the party filing such request and the reasons why a hearing is warranted. A hearing will be held if there is a significant public interest (including the filing of requests or petitions for such hearing) in holding such a hearing.

FINAL ACTION/RIGHTS TO APPEAL TO THE ENVIRONMENTAL COURT

At the conclusion of the public notice period and after consideration of additional information received during the public notice period, the VANR will make a final determination to issue or to deny the permit. Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Court within 30 days of the date of the decision. The appellant must attach to the Notice of Appeal, the entry fee of \$250.00, payable to the state of Vermont.

The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Court; and must be signed by the appellant or their attorney. In addition, the appeal must give the address or location and the description of the property, project or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal.

The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings.

For further information, see the Vermont Rules for Environmental Court Proceedings, available on line at www.vermontjudiciary.org. The address for the Environmental Court is: 2418 Airport Road, Suite 1, Barre, VT 05641-8701 (Tel. 802-828-1660).

David K Mears, Commissioner
Department of Environmental Conservation