

AGENCY OF NATURAL RESOURCES  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
WATERSHED MANAGEMENT DIVISION  
ONE NATIONAL LIFE DRIVE, MAIN BUILDING, 2<sup>ND</sup> FLOOR  
MONTPELIER, VT 05620-3522

FACT SHEET  
(AUGUST 2016)

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

**PERMIT NO:** 3-1211  
**PIN:** NS95-0163  
**NPDES NO:** VT0100277

**NAME AND ADDRESS OF APPLICANT:**

Town of Putney  
PO Box 233  
Putney, VT 05346

**NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:**

Putney Wastewater Treatment Facility  
21 Treatment Plant Road  
Putney, Vermont

**RECEIVING WATER:** Sackett's Brook

**CLASSIFICATION:** Class B with a waste management zone. Class B waters are suitable for swimming and other forms of water-based recreation, and irrigation of crops and other agricultural uses without treatment; good aesthetic value; aquatic biota and wildlife sustained by high quality aquatic habitat; suitable for boating, fishing, and other recreational uses; 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 Vermont Agency of Natural Resources (Agency) received a renewal application for the permit to discharge into the designated receiving water from the above-named applicant on July 6, 2011. At this time the Agency 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 Putney Wastewater Treatment Facility to Sackett's Brook.

## II. Description of 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.

## 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:	Page 2
Monitoring Requirements:	Pages 6-8

## IV. Receiving Water

The receiving water for this discharge is Sackett's Brook, a designated Cold Water Fish Habitat. At the point of discharge, the river has a contributing drainage area of 13.5 square miles. The summer 7Q10 flow of the river is 1.21 cubic feet per second (CFS) and the summer Low Median Monthly flow is 3.65 CFS. The instream waste concentration at the summer 7Q10 flow is 0.113 and the instream waste concentration at the summer Low Median Monthly flow is 0.041.

## V. Permit Basis and Explanation of Effluent Limitation Derivation

### ***History and Summary:***

The Town of Putney owns the Putney Wastewater Treatment Facility. The Facility provides secondary treatment using an extended aeration activated sludge process followed by chlorination and dechlorination. Effluent is discharged to Sackett's Brook, at the deepest section of the stream, through a 6" outfall pipe. There are four pump stations within the collection system.

The facility was constructed in 1975 and upgraded in 2006. The upgrade included modifications to the aeration system in the oxidation ditch, installation of a secondary clarifier, construction of new chlorine contact chambers, and improvements to the sludge pumping system.

### ***Antidegradation Discussion:***

See attachment.

**Flow** – Based on the conditions of the current permit the effluent flow limitation is 0.1 MGD, annual average, which reflects the new design capacity from the facility upgrade. The facility maintains a continuous discharge.

**Biochemical Oxygen Demand (BOD<sub>5</sub>)** – The effluent limitations for BOD<sub>5</sub> remain unchanged from the current permit. The monthly average (30 mg/L) and weekly average (45 mg/L) reflect the minimum level of effluent quality specified for secondary treatment in 40 CFR Part 133.102. In addition, the permit contains a 50 mg/L, maximum day, BOD<sub>5</sub> limitation. This is the Agency standard applied to all such discharges pursuant to 13.4 c. of the Vermont Water Pollution Control Permit Regulations. The Agency implements the limit 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. The mass limits for the facility are calculated using the concentration limitations outlined above and the flow of the wastewater treatment facility *prior* to the upgrade (0.080 MGD) and are thus unchanged from the current permit. The mass limitations are 20 lbs/day, monthly average, and 30 lbs/day, weekly average. The BOD<sub>5</sub> monthly monitoring requirement is unchanged from the current permit.

**Total Suspended Solids (TSS)** - The effluent limitations for TSS remain unchanged from the current permit. The monthly average (30 mg/L) and weekly average (45 mg/L) reflect the minimum level of effluent quality specified for secondary treatment in 40 CFR Part 133.102. In addition, the permit contains a 50 mg/L, maximum day, TSS limitation. This is the Agency standard applied to all such discharges pursuant to 13.4 c. of the Vermont Water Pollution Control Permit Regulations. The Agency implements the limit 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. The mass limits for the facility are calculated using the concentration limitations outlined above and the flow of the wastewater treatment facility *prior* to the upgrade (0.080 MGD) and are thus unchanged from the current permit. The mass limitations are 20 lbs/day, monthly average, and 30 lbs/day, weekly average. The TSS monthly monitoring requirements are unchanged from the current permit.

**Total Phosphorus (TP)** – This draft permit contains a phosphorous mass effluent limit of 4.17 total pounds, monthly average. In considering the increase in design flow due to the facility upgrade, the Agency reviewed whether the increased flow was consistent with the Antidegradation Policy contained in the Vermont Water Quality Standards. The proposed mass limit identifies the total phosphorous loading attributable to the Facility prior to the upgrade; maintaining the phosphorus load at, or below, levels of pre-upgrade will protect the water quality and minimize the risk to existing and designated uses.

**Total Nitrogen (TN)** – On November 10, 2011, a letter from the EPA (Region I) to the Vermont Agency of Natural Resources indicated that Vermont must establish TN limitations in permits such that the TN load from all facilities in the Connecticut River watershed is consistent with the requirements of the Long Island Sound Total Maximum Daily Load (TMDL).

Section I.B in this permit requires the Permittee have a qualified consultant develop and submit a Nitrogen Removal Optimization Plan by December 31, 2016. The plan shall be provided to the Agency before implementation. Additionally, an annual report will be due to the Agency documenting the pounds of TN discharged as well as removal optimization and efficiencies; the first annual report shall be submitted by January 15, 2018, as an attachment to the December 2017 DMR WR-43 report. Finally, this Condition contains as clause that allows the Agency to reopen the permit to include a wasteload allocation for this facility based on the LIS TMDL.

TN is a calculated value based on Total Kjeldahl Nitrogen (TKN) and Nitrate/Nitrite (NO<sub>x</sub>) Nitrogen. Monthly monitoring will be required for TKN and NO<sub>x</sub>. The sum of TKN and NO<sub>x</sub> shall be used to derive TN.

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

***Escherichia coli*** - The *E. coli* limitation is 77 colonies/100 mL as specified in Section 3-04 B.3, of the 2011 Vermont Water Quality Standards. Monthly monitoring remains the same as in the current permit.

**Total Residual Chlorine** – The Total Residual Chlorine limits of 1.0 mg/l instantaneous max is based on meeting the instream water quality acute and chronic chlorine criteria (0.019 mg/l and 0.011 mg/l respectively) in the Vermont Water Quality Standards for the protection of aquatic biota. Monitoring requirement remains daily.

**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.

**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 draft permit retains the existing waste management zone that extends downstream from the outfall for approximately 1 mile through Sackett’s Brook, terminating in the Connecticut River.

**Instream Monitoring** – The most recent biological assessments conducted above and below the Facility outfall in 2012 meet Class B water quality standards for aquatic biota and aquatic habitat uses for Medium High Gradient streams. However, the assessment below the outfall indicates a moderate level of nutrient enrichment, which can be attributed to the Putney Wastewater Treatment Facility. In addition, instream water chemistry data collected by the Agency show that TP is significantly and consistently higher below the outfall than above the outfall.

Therefore, several nutrient response conditions shall be monitored to ensure continued compliance with the narrative standard presented in § 3-01.B.2 of the Vermont Water Quality Standards. If the results of this monitoring indicate a reasonable potential to cause an instream excursion above the water quality criteria, the Agency may reopen and amend this permit to include additional effluent limitations and/or additional monitoring requirements.

**Whole Effluent Toxicity (WET) Testing** - 40 CFR Part 122.44(d)(1) requires the Agency to assess whether the discharge causes, or has the reasonable potential to cause or contribute to an excursion above any narrative or numeric water quality criteria. The goal of the Vermont Toxic Discharge Control Strategy is to assure that the state water quality standards and receiving water classification criteria are maintained. The draft permit includes a requirement to conduct a two-species WET test in August of September of 2020. If the results of this test indicate a reasonable potential to cause an instream toxic impact, the Agency may require additional WET testing, establish a WET limit, or require a Toxicity Reduction Evaluation.

**Monitoring and Reporting** – The draft permit requires the Permittee to submit all monitoring data using an Agency-approved DMR form (WR-43). The Permittee shall submit all monitoring data using an electronic reporting system designated by the Agency once directed to do so by the Agency.

**Operation, Management, and Emergency Response Plans** - As required by the revisions to 10 V.S.A. Section 1278, promulgated in the 2006 legislative session, Section I.H has been included in the draft permit. This condition requires that the Permittee implement the Operation, Management and Emergency Response Plan for the wastewater treatment facility, sewage pump/ejector stations, and stream crossings as approved by the Agency on January 13, 2009, and for the wastewater collection system as approved by the Agency on September 21, 2010.

**Electric Power Failure** - Within 30 days of the effective date of the permit, the Permittee must submit to the Agency 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 and dechlorination.

**Noncompliance Notification** – As required by the passage of 10 V.S.A. §1295, promulgated in the 2016 legislative session, Section II.A.2 has been included in the proposed permit. This condition requires the Permittee to provide public notification of untreated discharges from wastewater facilities. The Permittee is required to post a public alert within one hour of discovery, and submit to the Agency specified information regarding the discharge within 12 hours of discovery.

## VI. Procedures for Formulation of Final Determinations

The public comment period for receiving comments on this draft permit is from **August 15 through September 15, 2016** during which time interested persons may submit their written views on the draft permit. All written comments received by 4:30 PM on **September 15, 2016** will be retained by the Agency 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 Agency.

Written comments should be sent to:

Agency of Natural Resources  
Department of Environmental Conservation  
Watershed Management Division  
One National Life Drive, Main Building, 2<sup>nd</sup> Floor  
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.watershedmanagement.vt.gov/>

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 Agency 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 Agency 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 Agency 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 Agency and considered in the formulation of the final determination to issue, deny, or modify the draft permit.

The complete application, draft permit, and other information are on file and may be inspected by appointment on the 2<sup>nd</sup> floor of the Main Building at One National Life Drive, Montpelier, Vermont. Copies may be obtained by calling 802-828-1535 from 7:45 AM to 4:30 PM Monday through Friday, and will be made at a cost based upon the current Secretary of State Official Fee Schedule for Copying Public Records. The draft permit and fact sheet may also be viewed on the Watershed Management Division's website at <http://www.watershedmanagement.vt.gov/>

Town of Putney  
Putney Wastewater Treatment Facility  
21 Treatment Plant Road, Putney, VT

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

Due to the proposed increase in total discharge from 0.080 to 0.100 MGD at the Putney Wastewater Treatment Facility, the Department has determined the need to conduct an analysis to document attainment of the Antidegradation Policy contained in the applicable VWQS. This analysis is conducted relative to the increased flow proposed in the draft Permit.

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 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 of 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 consider 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 extends downstream from the outfall for approximately 1 mile through Sackett's Brook, terminating in the Connecticut River. The discharge will sufficiently achieve the necessary 20:1 dilution upon entering the Connecticut River. Therefore, the existing waste management zone is appropriately sized for the flow increase from 0.080 to 0.100 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 water 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 high 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 managements practices, as appropriate for nonpoint source control, consistent with state law.

The volume of discharge from the Putney Wastewater Treatment Facility will increase from the previous permit. Mass limits for biochemical oxygen demand and total suspended solids will be maintained at prior permitted levels. Given the increase in flow, the concentrations of these pollutants within the discharge will decline. A mass limit for total phosphorous will be imposed to prevent further acceleration of eutrophication, or the stimulation of growth of aquatic biota in a manner that prevents the full support of designated uses.

Given these effluent limitations, the Facility completed an upgrade in 2006, which included improvements to the oxidation ditch aeration system, installation of a secondary clarifier, construction of new chlorine contact chambers, and improvements to the sludge pumping system. These improvements will allow the Facility to effectively and reliably produce an effluent quality which conforms with the established effluent limitations. The provisions of §1-03.C.2 are not applicable here.

Per §1-04.A. of the Vermont Water Quality Standards (*Discharge Criteria*), new discharges of wastes may be allowed only when all of 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 Secretary as set forth in Chapter 4 of the Vermont Water Quality Standards.
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 the 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 an 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 Class B receiving water. Further, insofar as the effluent concentrations are being held constant despite augmented flows, the instream mixed concentration of wastewater pollutants will be reduced.
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 wastewater to waters of the State.
3. Based on the current design of the facility, the pollutants discharged by this facility will not result in any measurable change in the receiving water and will ensure full support of all uses.
4. The discharge is not to a Class A water.
5. The discharge will enter the existing one-mile waste management zone and receive adequate disinfection.
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 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.