AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
ONE NATIONAL LIFE DRIVE, DAVIS BUILDING, 3RD FLOOR
MONTPELIER, VT 05620-3522

FACT SHEET FOR DRAFT PERMIT
(May 2022)

Permit Number: **3-1285**
PIN: **RU95-0265**
NPDES Number: **VT0100871**

Facility Name:	**Rutland WWTF**	
Facility Address:	**10 Greens Hill Lane** **Rutland, VT 05701**	
Facility Coordinates:	Lat: **43.6038**	Long: **-72.9938**
Classification:	**Grade V Domestic** **Major**	
Receiving Water	**Otter Creek**	

I. Facility and Proposed Action

Applicant's wastewater treatment facility ("facility" or "WWTF") is engaged in the treatment of municipal wastewater in Rutland, Vermont. A map of facility location, outfalls, and receiving water is provided in Attachment A.

On 12/18/2007, the Secretary of the Vermont Agency of Natural Resources (the "Secretary") received Applicant's renewal application for the permit to discharge into the designated receiving water. The facility's previous permit (the "current permit") was issued on 11/7/2002.

The current permit has been administratively continued, pursuant to 3 V.S.A. § 814, as the applicant filed a complete application for permit reissuance within the prescribed time period per the Vermont Water Pollution Control Permit Regulations (VWPCPR) § 13.5(b).

At this time, the Secretary has made a tentative decision to reissue the discharge permit.

II. Statutory and Regulatory Authority

Congress enacted the Clean Water Act (CWA or Act), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specified permitting sections of the Act, one of which is § 402. CWA §§ 301(a), 402(a). Section 402 establishes one of the CWA's principal permitting programs, the National Pollutant Discharge Elimination System (NPDES). Under this section of the Act, the U.S. Environmental Protection Agency (EPA) may "issue a permit for the discharge of any pollutant, or combination of pollutants" in accordance with certain conditions. CWA § 402(a). The State of Vermont has been approved by the EPA to administer the NPDES Program in Vermont. NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. CWA § 402(a)(1) - (2).

Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits: "technology-based" limitations and "water quality-based" limitations. CWA §§ 301, 303, 304(b); 40 C.F.R. Parts 122, 125, 131. Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant-reducing technology available and economically achievable for the type of facility being permitted. CWA § 301(b). As a class, WWTFs must meet performance-based requirements based on available wastewater treatment technology. CWA § 301(b)(1)(B). The performance level for WWTFs is referred to as "secondary treatment." Secondary treatment is comprised of technology-based requirements expressed in terms of BOD5, TSS, and pH; 40 C.F.R. Part 133.

Water quality-based effluent limits, on the other hand, are designed to ensure that state water quality standards are achieved, irrespective of the technological or economic considerations that inform technology-based limits. Under the CWA, states must develop water quality standards for all water bodies within the state. CWA § 303. These standards have three parts: (1) one or more "designated uses" for each water body or water body segment in the state; (2) water quality "criteria," consisting of numerical concentration levels and/or narrative statements specifying the amounts of various pollutants that may be present in each water body without impairing the designated uses of that water body; and (3) an antidegradation provision, focused on protecting high quality waters and protecting and maintaining water quality necessary to protect existing uses. CWA § 303(c)(2)(A); 40 C.F.R. § 131.12.

A permit must include limits for any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) that is or may be discharged at a level that causes or has "reasonable potential" to cause or contribute to an excursion above any water quality standard, including narrative water quality criteria. See 40 C.F.R. § 122.44(d)(1). An excursion occurs if the projected or actual instream concentration exceeds the applicable criterion. A NPDES permit must contain effluent limitations and conditions in order to ensure that the discharge does not cause or contribute to water quality standard violations.

Receiving stream requirements are established according to numerical and narrative standards adopted under state law for each stream classification. When using chemical-specific numeric criteria from the State's water quality standards to develop permit limits, both the acute and chronic aquatic life criteria are used and expressed in terms of maximum allowable instream pollutant concentrations. Acute aquatic life criteria are generally implemented through maximum daily limits and chronic aquatic life criteria are generally implemented through average monthly limits.

Where a state has not established a numeric water quality criterion for a specific chemical pollutant that is present in the effluent in a concentration that causes or has a reasonable potential to cause a violation of narrative water quality standards, the permitting authority must establish effluent limits in one of three ways: based on a "calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use"; on a "case-by-case basis" using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, in certain circumstances, based on an "indicator parameter." 40 C.F.R. § 122.44(d)(1)(vi)(A-C).

The state rules governing Vermont's NPDES permit program are found in the Vermont Water Pollution Control Permit Regulations (Environmental Protection Rule, Chapter 13).

III. Permit Limit and Condition Formulation

A. Reasonable Potential Determination

In determining whether this permit has the reasonable potential to cause or contribute to an impairment, the Secretary has considered:

1) Existing controls on point and non-point sources of pollution as evidenced by the Vermont surface water assessment database;

2) Pollutant concentration and variability in the effluent as determined from the permit application materials, monthly discharge monitoring reports (DMRs), or other facility reports;

3) Receiving water quality based on targeted water quality and biological assessments of receiving waters, as applicable, or other State or Federal water quality reports;

4) Toxicity testing results based on the Vermont Toxic Discharge Control Strategy, and compelled as a condition of prior permits;

5) Available dilution of the effluent in the receiving water, expressed as the instream waste concentration. In accordance with the applicable Vermont Water Quality Standards (Environmental Protection Rule, Chapter 29A), available dilution for rivers and streams is based on a known or estimated value of the lowest average flow which occurs for seven (7) consecutive days with a recurrence interval of once in ten (10) years (7Q10) for aquatic life and human health criteria for non-carcinogens, or at all flows for human health (carcinogens only) in the receiving water. For nutrients, available dilution for stream and river discharges is assessed using the low median monthly flow computed as the median flow of the month containing the lowest annual flow. Available dilution for lakes is based on mixing zones of no more than 200 feet in diameter, in any direction, from the effluent discharge point, including as applicable the length of a diffuser apparatus; and

6) All effluent limitations, monitoring requirements, and other conditions of the draft permit.

The Reasonable Potential Determination for this facility is attached to this Fact Sheet as Attachment A.

B. Anti-Backsliding

Section 402(o) of the CWA provides that certain effluent limitations of a renewed, reissued, or modified permit must be at least as stringent as the comparable effluent limitations in the current permit. EPA has also promulgated anti-backsliding regulations which are found at 40 C.F.R. § 122.44(l). Unless applicable anti-backsliding exemptions are met, the limits and conditions in the reissued permit must be at least as stringent as those in the current permit.

IV. Facility Information

A. History

The City of Rutland owns and operates the Rutland wastewater treatment facility. The facility receives and treats wastewater from the City of Rutland, areas within the Town of Rutland, Menden, Killington and Clarendon. Treatment is activated sludge extended aeration. Treated wastewater is disinfected with chlorine and then dechlorinated prior to discharging.

The City has four Combined Sewer Overflow (CSO) discharge points within the collection system. Work has been completed over the past several years to reduce the area of combined sewer system thereby reducing the volume of untreated CSO water discharged.

The City was issued a 1272 Order on May 5, 2018 requiring the City to prepare a Long Term Control Plan (LTCP) to reduce the number and volume of CSO discharges and to bring any discharges into compliance with the Vermont Water Quality Standards.

B. Pretreaters

The following pretreaters are permitted under the NPDES program to discharge to the facility.

Pretreater	Discharge Activity	Permit ID	Expiration Date
Bodycote Surface Technology, Inc.	Metal Plating/Finishing	3-1572	3/31/2027
General Electric - Columbian Ave	Combined Waste	3-0306	12/31/2022
General Electric - Windcrest Road	Combined Waste	3-1270	12/31/2022
STO Corporation	Rinsewater from Process	3-1301	9/30/2023

C. Receiving Water Classification -

Discharge point 001 discharges to the OTTER CREEK.

All uses Class B with a waste management zone. Class B waters are suitable for swimming and other primary contact recreation; irrigation and agricultural uses; aquatic biota and aquatic habitat; good aesthetic value; boating, fishing, and other recreational uses; and suitable for public water source with filtration and disinfection or other required treatment. A waste management zone is a specific reach of Class B(1) or B(2) waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings.

D. Receiving Water Description

The Otter Creek downstream of the Rutland WWTF discharge is a Class B (2) water and is designated as Cold Water Fish Habitat. At the point of discharge, the river has a contributing drainage area of 307 square miles. The existing permitted waste management zone (WMZ) begins at the outfall of the WWTF and extends downstream 2.10 mile pursuant to 10 V.S.A., Section 1252.

E. Waste Management and Mixing Zones

A Waste Management Zone (WMZ) is a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that contained organisms pathogenic to human beings prior to treatment. Throughout the receiving waters, water quality criteria must be achieved but increased health risks exist in a WMZ due to the authorized discharge.

The Secretary may establish a WMZ as part of the issuance of a discharge permit as described in 10 V.S.A. § 1252. The model used to determine the WMZ is based upon three precepts of domestic wastewater treatment facility discharges: 1) the use of coliform bacteria as an indicator of pathogenic organisms; 2) despite proper operation and maintenance disinfection failures may occur; and 3) a reasonably sized waste management segment provides a "buffer zone" downstream of the wastewater discharge in which contact recreation is not recommended. If a disinfection failure should occur at the WWTF, the time of travel through this zone will provide time during which some pathogen die-off will occur and may also allow time for public notification. A WMZ is not a Mixing Zone.

This facility currently has a 2.10 mile WMZ.

Mixing Zone. A Mixing Zone is a length or area within Class B waters required for the dispersion and dilution of waste discharges adequately treated to meet federal and state treatment requirements and within which it is recognized that specific water uses or water quality criteria associated with the assigned classification for such waters may not be realized. A mixing zone shall not extend more than 200 feet from the point of discharge and must meet the terms of 10 V.S.A. § 29A-204. For a mixing zone to be applicable to a discharge it must be authorized within the discharge permit. The Secretary has made the determination that conditions due to discharges of waste within any mixing zone shall:

a. not result in a significant increase in public health risk when evaluated using reasonable assumptions about exposure pathways;

b. not constitute a barrier to the passage or movement of fish or prevent the full support of aquatic biota, wildlife, and aquatic habitat uses in the receiving waters outside the mixing zone;

c. not kill organisms passing through;

d. protect and maintain the existing uses of the waters;

e. be free from materials in concentrations that settle to form objectionable deposits;

f. be free from floating debris, oil, scum, and other material in concentrations that form nuisances;

g. be free from substances in concentrations that produce objectionable color, odor, taste, or turbidity; and

h. be free from substances in concentrations that produce undesirable aquatic life or result in a dominance of nuisance species. (Vermont Water Quality Standards § 29A-204(a)).

This facility currently does not have a mixing zone.

V. Monitoring

A. Flow Monitoring at Discharge Point 001

1. Flow - Monitoring Notes: Annual Average, Calculated

The draft permit maintains the annual average flow limitation. This facility maintains a constant discharge and continuous flow monitoring is required. The limit and monitoring requirements are unchanged from the current permit.

B. Conventional Pollutants Monitoring at Discharge Point 001

1. BOD, 5-Day - Monitoring Notes: Effluent Gross Value, 24 Hour Comp

The effluent limitations for BOD5 remain unchanged from the current permit. The monthly and weekly averages reflect the minimum level of effluent quality specified for secondary treatment in 40 C.F.R. Part 133.102. In addition, the draft permit contains a maximum day, BOD5 limitation pursuant to Vermont Water Pollution Control Permit Regulations § 13.4.c. The Secretary implements the limitation to supplement the federal technology-based limitations. This is designed to prevent a gross one-day permit effluent violation from being offset by multiple weekly and monthly sampling events, which would enable a discharger to comply with the weekly average and monthly average permit limitations. Mass limits are calculated using the concentration limits outlined above. The BOD5 seasonal monitoring requirement have been changed from the current permit to be in line with other seasonal limits in the State.

2. BOD, 5-Day - Monitoring Notes: Influent, 24 Hour Comp

BOD influent sampling is necessary so that the BOD percent removal parameter can be calculated.

3. BOD, 5-Day (% REMOVAL) - Monitoring Notes: Percent Removal, Calculated

The BOD5 monthly average percent removal shall not be less than 85 percent as specified in 40 C.F.R. § 133.102(a)(iii). This limit is a Technology-Based Effluent Limitation (TBEL) established by the Clean Water Act that requires WWTFs to achieve a minimum level of effluent quality. TBELs are based on available technologies to reduce discharges of pollutants into waters of the United States and are developed independently of the potential impact of a discharge on the receiving water.

4. Chlorine, Total Residual - Monitoring Notes: Effluent Gross Value, Grab

The Total Residual Chlorine (TRC) limitation is 0.04 mg/L, monthly average and 0.1 mg/l daily maximum. This limitation is changed from the current permit. Based on the Agency’s Chlorine Policy, limits of 0.04 mg/L (monthly average) and 0.1 mg/L (daily maximum) will ensure that the instream water quality criteria for chlorine of 0.019 mg/L, (acute) and 0.011 mg/L (chronic) of the Vermont Water Quality Standards is met.

Monitoring via grab sample is required daily, which is unchanged from the current permit.

5. E. Coli - Monitoring Notes: Effluent Gross Value, Grab

The instantaneous maximum E. coli limitation remains unchanged, and is based upon the limitation in the current permit and the anti-backsliding provisions of Section 402(o) of the CWA. The monitoring frequency remains unchanged at weekly.

6. pH - Monitoring Notes: Effluent Gross Value, Grab

The pH limitation remains at 6.5 - 8.5 Standard Units as specified by Vermont Water Quality Standards § 29A-303(6). Monitoring remains unchanged at daily.

7. Settleable Solids - Monitoring Notes: Effluent Gross Value, Grab

The settleable solids 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 Vermont Water Quality Standards § 29A-303(2).

8. Suspended Solids, Total (% Removal) - Monitoring Notes: Percent Removal, Calculated

As required in the current permit, the TSS monthly average percent removal shall not be less than 85 percent as specified by 40 C.F.R. §133.102(b)(3). This limit is a Technology-Based Effluent Limitation (TBEL) established by the Clean Water Act that requires WWTFs to achieve a minimum level of effluent quality. TBELs are based on available technologies to reduce discharges of pollutants into waters of the United States and are developed independently of the potential impact of a discharge on the receiving water.

9. Suspended Solids, Total - Monitoring Notes: Effluent Gross Value, 24 Hour Comp

The effluent limitations for TSS remain unchanged from the current permit. The monthly and weekly averages reflect the minimum level of effluent quality specified for secondary treatment in 40 C.F.R. Part 133.102. In addition, the draft permit contains a maximum day TSS limitation pursuant to Vermont Water Pollution Control Permit Regulations § 13.4 c. The maximum day limitation supplements the federal technology-based limitations to prevent a gross one-day permit effluent violation from being offset by multiple weekly and monthly sampling events to achieve the weekly and monthly averages. The mass limits are calculated using the concentration limits outlined above. The TSS monitoring requirements have been adjusted to match other seasonal limits in the State.

10. Suspended Solids, Total - Monitoring Notes: Influent, 24 Hour Comp

TSS influent sampling is necessary so that the TSS percent removal parameter can be calculated.

11. Ultimate Oxygen Demand - Monitoring Notes: Effluent Gross Value, Calculated

On the basis of assimilative capacity modeling completed on the receiving water, an effluent UOD limit is included in the draft permit in order to ensure compliance with the dissolved oxygen water quality criteria during critical summertime instream conditions. UOD is dependent on the quantity of Biochemical Oxygen Demand (BOD5) and Total Kjeldahl Nitrogen (TKN) in a discharge, as specified in the following equation:

UOD (lbs/day) = [(BOD5 (lbs/day) x 1.43) + (TKN (lbs/day) x 4.57)]

Calculation of the UOD concentration in the discharge is required weekly from the period of June 1 through October 31st. The sampling frequency is unchanged from the current permit, but the monitoring period has been adjusted to collect information for October. The BOD and TKN analyses used to calculate UOD must be conducted on the same effluent sample. Since receiving waters are the most sensitive to oxygen depleting wastes during periods of high water temperature and low flow, the UOD limitation is in effect from June 1 through October 31 of each year. The UOD limitation ensures compliance with the dissolved oxygen criteria during this time period as specified in the Vermont Water Quality Standards. During the other months of the year, the Biological Oxygen Demand limitation is adequate to ensure compliance with the dissolved oxygen criteria.

C. Nutrients Monitoring at Discharge Point 001

1. Nitrite Plus Nitrate Total 1 Det. - Monitoring Notes: Effluent Gross Value, 24 Hour Comp

Nitrite Plus Nitrate as Nitrogen (NOx) – Nitrite (NO2-) and Nitrate (NO3-) are oxidized forms of Nitrogen. NOx is needed to calculate Total Nitrogen (TN). To gather data on the amount of Total Nitrogen in this discharge, Nitrite (NO2-) plus Nitrate (NO3-) monitoring is proposed in the renewed permit. The proposed monitoring is once per week for the summer and once per month during the winter.The sum of Nitrite (NO2-) and Nitrate (NO3-) is represented as NOx to simplify the notation in wastewater chemistry. The x represents the number of Oxygen atoms (2 or 3) and the negative charge notation (-) is dropped. This notation is also used in atmospheric chemistry where other oxidation states are possible. NO2- + NO3- = NOxTest results are reported in terms of Nitrogen (N) because water quality standards are generally expressed in terms of Nitrogen for simplicity and consistency. This constituent (NOx) is sometimes also shown as (NO2/NO3), Nox, NOX, Nitrate/Nitrite Nitrogen, and Nitrite Plus Nitrate Total 1 Det. (As N). To gather data on the amount of NOx in this discharge and its potential impact on the receiving water, “monitor only” sampling requirement are included in the draft permit.

2. Nitrogen, Ammonia Total - Monitoring Notes: Effluent Gross Value, Grab

To gather data on the amount of TAN in this discharge and its potential impact on the receiving water, a “monitor only” sampling requirement is included in the draft permit.

3. Nitrogen, Kjeldahl Total - Monitoring Notes: Effluent Gross Value, 24 Hour Comp

TKN is the sum of nitrogen in the forms of ammonia (un-ionized (NH3) and ionized (NH4+)), soluble organic nitrogen, and particulate organic nitrogen. To gather data on the amount of TKN in this discharge and its potential impact on the receiving water, a “monitor only” sampling requirement is included in the draft permit. Sampling is required weekly during the summer and monthly during the winter.

4. Nitrogen, Total - Monitoring Notes: Effluent Gross Value, Calculated

TN is the sum of nitrate, nitrite, ammonia, soluble organic nitrogen, and particulate organic nitrogen. To gather data on the amount of Total Nitrogen (TN) in this discharge and its potential impact on the receiving water, a

"monitor only" requirement for TN has been included in this permit. TN is a calculated value based on the sum of NOx and TKN, and, shall be reported as pounds, calculated as:

Average TN (mg/L) x Total Daily Flow x 8.34

where, TN (mg/L) = TKN (mg/L) + NOx (mg/L)

Per EPA excess nitrogen (N) and phosphorus (P) are the leading cause of water quality degradation in the United States. Historically, nutrient management focused on limiting a single nutrient—phosphorus or nitrogen—based on assumptions that production is usually phosphorus limited in freshwater and nitrogen limited in marine waters. Scientific research demonstrates this is an overly simplistic model. The evidence clearly indicates management of both phosphorus and nitrogen is necessary to protect water quality. The literature shows that aquatic flora and fauna have differing nutrient needs: some are P dependent, others N dependent and others are co-dependent on these two nutrients. Like P, N promotes noxious aquatic plant and algal growth. High concentrations of P and N together cause greater growth of algae than P alone. The relative abundance of these nutrients also influences the type of species within the community. Furthermore, a high N-to-P ratio may exacerbate the growth of cyanobacteria, while elevated levels of nitrogen increase toxicity in some cyanobacteria species. Given the dynamic nature of all aquatic ecosystems, for the State to fully understand the degradation to water quality it is necessary to limit P and monitor bioavailable N (including nitrate, ammonium, and certain dissolved organic nitrogen compounds). Facilities with design flow greater than 1 MGD will complete monthly monitoring unless more frequent sampling is already required by the current permit. Facilities with design flows less than 1 MGD will complete quarterly monitoring unless more frequent sampling is already required by the current permit. Total Nitrogen monitoring is proposed at a weekly frequency during the summer since the TKN is currently required to be sampled at that frequency. Monthly winter sampling has been added for this facility.

5. Phosphorus, Total - Monitoring Notes: Annual Average, See Permit

Background:

Excess phosphorus entering Lake Champlain from a variety of sources has impaired the lake's water quality. The Lake Champlain Total Maximum Daily Load (LC TMDL), issued June 17, 2016, places a cap on the maximum amount of phosphorus from point and non- point sources that is allowed to flow into the lake while still meeting Vermont's water quality standards. The EPA developed phosphorus TMDLs for the twelve Vermont segments of Lake Champlain in collaboration with the Vermont Agency of Natural Resources, Department of Environmental Conservation and the Vermont Agency of Agriculture, Food, and Markets, and released the document titled "Phosphorus TMDLs for Vermont Segments of Lake Champlain" (June 2016). The 2016 LC TMDL specifies allowable phosphorus loads, or waste load allocations (WLA), expressed as metric tons per year (mt/yr), for each of the 59 WWTFs that discharge to the Lake Champlain watershed. The Secretary will issue discharge (NPDES) permits in accordance with the permit issuance schedule in the Lake Champlain TMDL Phase 1 Implementation Plan (Chapter 3, page 46). The Secretary will follow this schedule unless special circumstances are raised by the facility that warrant the issuance of the permit sooner (e.g., planned facility upgrades), and the Wastewater Management Program has sufficient staff capacity to handle the request.

Reductions in WLAs are targeted only to WWTFs in those lake segment watersheds where the currently permitted wastewater load represents a 10% or greater portion of the total phosphorus load to that segment from all sources (Main Lake, Shelburne Bay, Burlington Bay, St. Albans Bay) or where wastewater upgrades would meaningfully reduce the phosphorus reduction burden placed on non-wastewater (non-point) sources (Missisquoi Bay). Therefore, WWTFs discharging to the Port Henry, Otter Creek, Mallets Bay, Northeast Arm, Isle LaMotte, and the South Lake A/B lake segments were not assigned a new waste load allocation. The EPA also determined that wastewater facilities with a design flow of < 0.1 million gallons per day (MGD) would be given the same allocations as in the 2002 TMDLs due their minor contribution of phosphorus loading.

The LC TMDL establishes new annual WLAs for WWTFs with a design flow capacity of above 0.1 MGD that discharge to the Main Lake, Shelburne Bay, Burlington Bay, St. Albans Bay, and Missisquoi Bay lake segments. Specifically, WWTFs with a design flow capacity of 0.1 to 0.2 MGD were assigned WLAs based on a 0.8 mg/L effluent phosphorus concentration at permitted flow while WWTFs with design capacity of > 0.2 MGD were assigned WLAs based on a 0.2 mg/L effluent phosphorus concentration at permitted flow.

In the LC TMDL, EPA acknowledged and supported the Secretary's commitment to employ flexible approaches to implementing the WWTF WLAs including "providing a period of time for optimization to be pursued and the corresponding load reduction results to be realized, and then commencement of the process to upgrade phosphorus treatment facilities will be required when actual phosphorus loads reach 80% of the LC TMDL limits." The Wastewater Management Program maintains a tracking system for phosphorus loading from Vermont WWTFs so facilities approaching or over the 80% threshold can be identified. The 80% phosphorus load threshold is calculated by comparing the individual WWTF phosphorus WLA established in the LC TMDL to the actual phosphorus discharge load from the WWTF over last 12 months:

WWTF Annual TP Load / LC TMDL WLA x 100

There are currently WWTFs in the Lake Champlain watershed with existing discharged loads of phosphorus already at, or above, 80% of allowable loads. To ensure facilities are operating as efficiently as possible, all reissued wastewater discharge (NPDES) permits under the LC TMDL will specify a period of 12 months for optimization to be pursued and the corresponding load reduction results to be realized, prior to evaluating where a facility ranks relative to the 80% trigger. Discharge permits will specify that after the optimization period, when an existing facility reaches 80% of its WLA for phosphorus (evaluated as a rolling, 12- month load), the Permittee will have to develop and submit a projection of whether the facility will exceed its WLA during the permit term and if it is projected to do so, then the facility will be required to develop a Phosphorus Elimination/Reduction Plan (PERP) that will ensure the facility continues to comply with its WLA.

Effluent TP limits in permits are expressed as:

(1) total annual mass loads, and

(2) for facilities that currently have an existing monthly effluent concentration limit for TP in their NPDES permit, as monthly effluent concentration limits.

Phosphorus Limit in Draft Permit:

The current discharge permit for this facility includes a mass-based, effluent limit of 12420 pounds of TP per year. This annual mass limitation was based on an allocation of 5.634 metric tons established in the 2002 Lake Champlain Phosphorus TMDL. The current permit also contains an effluent TP concentration limit of 0.8 mg/L, monthly average, consistent with the annual load limit.

This proposed draft permit contains a phosphorous effluent concentration limit of 0.8 mg/l, monthly average, and a mass effluent limit of 12420 total pounds, annual limitation. The concentration effluent limitation is based on the requirements of 10 V.S.A. § 1266a. The mass annual effluent limitation is based on the LC TMDL. The LC TMDL allocated 5.634 metric tons per year or 12420 pounds per year to the Rutland WWTF.

This new, annual WLA represents a 0% reduction (-0 pounds) from the current permit and is equivalent to setting the effluent TP limit at 0.5 mg/L at the design capacity of the WWTF (8.1 MGD). To convert units of the WLA from metric tons to pounds for the annual, mass- based TP permit limit, the following equation was used and the resulting WLA rounded down to the nearest pound:

(5.634 mt/yr) (2204.62 lbs/mt) = 12420 lbs/yr

The LC TMDL includes WLAs for WWTFs expressed as total annual mass loads. Compliance with the annual limit will be calculated each month using the Running Total Annual Pounds Calculation (Condition I.H.2.c. of the permit), rather than once at the end of the calendar year. The LC TMDL does not include monthly average concentration effluent limits for WWTFs. State law (10 V.S.A. 1266a) requires that, “No person directly discharging into the drainage basins of Lake Champlain or Lake Memphremagog shall discharge any waste that contains a phosphorus concentration in excess of 0.80 milligrams per liter on a monthly average basis.” Therefore, in addition to the annual mass load effluent limitation required by the TMDL, the permit must also include a monthly average concentration limit for phosphorus. While the WLA in the TMDL was calculated based on a TP effluent concentration of 0.5 mg/L, the permit does not include 0.5 mg/L as the concentration effluent limitation because a Permittee may not need to achieve 0.5 mg/L to ensure compliance with the WLA established in the TMDL. Rather the permit includes a monthly average concentration limit for phosphorus of 0.80 mg/L to ensure compliance with state law and to recognize seasonal variations in the facility’s discharge. It is important to note that because the annual mass load and average monthly concentration limits are not mathematically consistent in the permit, meeting a 0.80 mg/L concentration limit at design flows will not result in meeting the annual mass limit.

The Permittee must comply with both limitations and, as required by the permit, must operate the facility to meet the more restrictive limitation, which may vary depending upon discharge flows at the facility. If the facility is operating at design flows, the annual mass load limitation will be the more restrictive

limitation. However, if the facility is operating at low flows, the monthly average concentration limit may be the more restrictive limitation.

Weekly sampling for total phosphorus is required between June 1 and October 31. Sampling for total phosphorus is required twice a month between November 1 and May 31.

Condition I.H.3.c. of this draft permit requires the submission of monitoring reports to the Secretary specific to tracking TP in the discharge. A report that documents the annual TP discharged from the facility, summarizes phosphorus removal optimization and efficiencies, and tracks trends relative to the previous year shall be attached to the applicable WR-43 form. The annual and monthly TP loads discharged from the facility shall also be reported electronically with other required parameters.

Analysis in Support of Phosphorus Limit:

The Secretary is using the WLA from the LC TMDL (available at https://www.epa.gov/tmdl/lake-champlain-phosphorus-tmdl-commitment-clean-water) as the water quality-based effluent limitation (WQBEL) for phosphorus for this permit because this is the first permit issued to this facility under the LC TMDL and Vermont is meeting the required milestones of the LC TMDL Accountability Framework. *In re Multiple WWTF Permit Appeals*, Docket Nos. 138-10-17 Vtec, 139-10-17 Vtec, 140-10-17 Vtec, 141-10-17 Vtec 145-10-17 Vtec, 146-10-17 Vtec, 4-1-18 Vtec, 5-1-18 Vtec, and 17-2-18 Vtec, slip op. at 32 (Vt. Super. Ct. Envtl Div. Feb. 1, 2019) (Durkin, J.) ("ANR could have looked to [the report card on implementation milestones]—all of which were completed—to confirm that TMDL implementation was proceeding as planned, and that the assumptions underlying the TMDL therefore held true").

In 2016, the EPA gave Vermont an "excellent" report card for meeting milestones by December 30, 2016. By 2017, the State had completed a majority of the milestones in the LC TMDL Accountability Framework (pages 54-59 of the LC TMDL) due by December 30, 2017 and was actively working to complete those that were outstanding, as outlined in the 2018 Vermont Lake Champlain Phosphorus Total Maximum Daily Loads Accountability Framework Report (Submitted by the State to EPA on March 7, 2018; available at: https://www.epa.gov/sites/default/files/2019-05/documents/vt-march-2018-tmdl-progress-report-to-epa.pdf). With the issuance of the "Developed Lands General Permit" (Stormwater General Permit 3-9050) in late 2020, the EPA acknowledged Vermont has successfully completed all Phase 1 Accountability Framework milestones in its September 3, 2020 Lake Champlain TMDL Implementation Final Report Card for Phase 1 Milestones (Available at: https://www.epa.gov/sites/production/files/2020-09/documents/lake-champlain-report-card-ltr-09-3-20.pdf).

With the State having completed the Phase 1 Accountability Framework milestones and EPA's affirmative reports thus far, there is no reason to believe that the assumptions upon which the WLA was developed – including that discharges in other sectors will be reduced in the future – are no longer valid. Therefore, it is appropriate to establish the phosphorus WQBEL for this facility based upon its WLA in the LC TMDL. In addition, a full assessment of Reasonable Potential was conducted as required to satisfy 40 C.F.R. § 122.44(d)(1)(vii)(B) and it was determined this facility does not have reasonable potential to cause or contribute to a violation of the VWQS for phosphorus in the receiving water.

Phosphorus Elimination and Reduction Plan:

To ensure the facility is operating as efficiently as possible for purposes of phosphorus removal, Condition I.H.3. of the permit requires that within 120 days of the permit effective date, the Permittee shall develop or update (as appropriate), and submit to the Secretary, a Phosphorus Optimization Plan (POP) to increase the WWTF's phosphorus removal efficiency by implementing optimization techniques that achieve phosphorus reductions using primarily existing facilities and equipment. The techniques to be evaluated may include operational process changes to enhance biological and/or chemical phosphorous removal, incorporation of anaerobic/anoxic zones, septage receiving policies and procedures, and side-stream management.

The facility shall have 12 months from the permit effective date to optimize removal of total phosphorus. If, after the 12-month optimization period, the WWTF's actual TP loads reach or exceed 80% of the LC TMDL WLA for the WWTF, based on the WWTF's 12-month running annual load calculated using the Phosphorus Load Calculation (Condition I.H.2.d. of the permit) the Permittee shall, within 90 days of reaching or exceeding 80% of the LC TMDL WLA for the WWTF, develop and submit to the Secretary a projection based on the WWTF's current operations and expected future loadings of whether it will exceed its WLA during the permit term.

If the facility is not projected to exceed its WLA within the permit term, the WWTF shall reassess when it is projected to reach its WLA prior to permit renewal and submit that information with its next permit application. If the facility is projected to exceed its WLA during the permit term, the Permittee shall submit a Phosphorus Elimination/Reduction Plan (PERP) within 6 months to the Secretary to ensure the WWTF continues to comply with its WLA. The PERP shall be treated as an application to amend the permit, and therefore, shall be subject to all public notice, hearing, and comment provisions, in place at the time the plan is submitted, that are applicable to permit amendments. The WWTF shall revise the PERP, if required by the Secretary.

F. Non-Conventional Pollutants Monitoring at Discharge Point 001

1. Septage Received - Monitoring Notes: Influent, Calculated

The quantities of septage received at this facility are monitored to gather information about loading as well as the availability of septage receiving facilities for the State's unsewered residents. The monthly total reporting requirement is new and the daily maximum requirement remains unchanged.

3. Discharge Special Conditions

Permit Schedule Items

A. Annual Constituent Monitoring

For all facilities with a design flow greater than 0.1 MGD, 40 CFR § 122.21(j) requires the submittal of effluent monitoring data for those parameters identified in the draft permit. Samples must be collected once annually such that by the end of the term of the permit, all quarters have been sampled at least once, and the results will be submitted by December 31 of each year.

B. CSO Annual Report

The Town of Rutland owns and operates a combined sewer system which collects both stormwater and sewage and conveys it to the WWTF for treatment. There are currently 4 combined sewer overflows remaining that do not discharge during dry weather conditions. Most recently, the Secretary issued a 1272 Order the Town of Rutland on May 18,2018 requiring the development of a Long Term Control Plan, compliance with the Nine Minimum Controls and annual reporting requirements.

The Combined Sewer Overflow Rule (CSO Rule) (Environmental Protection Rule, Chapter 34), which became effective in September 2016, supersedes the CSO Policy. The CSO Rule codifies, updates, and clarifies the technology-based and water quality-based requirements applicable to CSOs. The technology-based controls for CSOs are referred to as the “Minimum Controls” and are included in the draft permit. To ensure the remaining CSOs are brought into compliance with the Vermont Water Quality Standards, the Secretary, concurrent with issuance of this final permit, shall issue a 1272 Order to the Permittee, requiring the creation of a Long-Term Control Plan that complies with the requirements of the CSO Rule.

The following CSO monitoring requirements are included in the draft permit:

• Implementation of a precipitation monitoring system;
• Continued monitoring and reporting of overflow events utilizing tell-tales, at a minimum;
• Notification of wet-weather overflows though public alert within one hour of discovery, and submit to the Secretary specified information regarding the discharge within 12 hours of discovery; and
• A report on CSO control project(s) of the previous calendar year, due by January 31of each year.

C. Emergency Power Failure Plan

To ensure the facility can continue operations during the event of a power failure, within 90 days of the effective date of the permit, the Permittee must submit to the Secretary updated documentation addressing how the discharge will be handled in the event of an electric power outage.

D. Engineering Evaluation and Report/Asset Management Plan

An engineering evaluation condition is included in this permit. This condition requires the Permittee to conduct an in-depth inspection and report of the treatment facility to identify and repair equipment, processes,

and other possible deficiencies which may adversely affect effluent quality or proper operation. This type of evaluation is required once every 20 years.

E. Operations Management Emergency Response Plan (OMERP)

As required by the revisions to 10 V.S.A. Section 1278 the Permittee shall implement the Operation, Management, and Emergency Response Plan on file. To ensure this plan remains up-to-date, the permittee shall prepare and submit to the Agency for review and approval an Operation, Management, and Emergency Response Plan for the WWTF, sewage pump/ejector stations, stream crossings, and sewage collection system.

F. Phosphorus Optimization Plan

The Permittee shall prepare and implement a plan to optimize phosphorus removal at the facility.

G. Pollutant Scan (greater than 1 MGD)

The Toxic Pollutants Scan is codified at 40 C.F.R. § 401.15, Table 1. This requires the Permittee to conduct an effluent analysis of S/N 001 for the pollutants included in Appendix J, Table 2 of 40 C.F.R. Part 122 and submit the results to the Secretary. Based on the results of these tests or any other toxicity tests conducted, the Secretary may require additional WET testing or a Toxicity Reduction Evaluation be conducted.

H. Quality Assurance Report / Proficiency Testing

To ensure there are adequate laboratory controls and appropriate quality assurance procedures, the Permittee shall conduct an annual laboratory proficiency test for the analysis of all pollutant parameters performed within their facility laboratory and reported as required by their NPDES permit. Proficiency Test samples must be obtained from an accredited laboratory or as part of an EPA DMR-QA study. Results shall be submitted to the Secretary by December 31, annually.

I. Whole Effluent Toxicity (WET) Testing Acute/Chronic

40 C.F.R. Part 122.44(d)(1) requires the Secretary 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. Per these federal requirements, the Permittee shall conduct WET testing and toxic pollutant analyses according to the schedule outlined in the draft permit. If the results of these tests indicate a reasonable potential to cause an instream toxic impact, the Secretary may require additional WET testing, establish a WET limit, or require a Toxicity Reduction Evaluation.

VIII. General Conditions

A. Electronic Reporting

The National Pollution Discharge Elimination System (NPDES) Electronic Reporting Rule (eRule)modernized Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. The eRule requires the inclusion of electronic reporting requirements in NPDES permits that become effective after December 21, 2015. The rule requires that NPDES regulated entities that are required to submit discharge monitoring reports (DMRs), including majors and nonmajors, individually permitted or covered by a general permit, must do so electronically after December 21, 2016. The Secretary has created an electronic reporting system for DMRs and has trained facilities in its use. As of December 21, 2020, these NPDES facilities must also submit additional information electronically as specified in Appendix A in 40 C.F.R. Part 127.

B. Noncompliance Notification -
As required by 10 V.S.A. § 1295, a Noncompliance Notification has been included in the draft permit. Section 1295 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 Secretary specified information regarding the discharge within 12 hours of discovery.

C. Reopener - The draft permit includes a reopener clause whereby the Secretary reserves the right to reopen and amend the permit to implement an integrated plan to address multiple Clean Water Act obligations.

V. Final Determinations

The public comment period for receiving comments on this draft permit was originally scheduled from May 25, 2021 to June 25, 2021. A request to extend the public comment period was received on June 18, 2021. The Secretary agreed to extend the public comment period, which was revised to May 25, 2021 to July 21, 2021. All written comments received by 4:30 PM on July 21, 2021, will be retained by the Secretary and considered in the formulation of the final determination to issue, deny or modify the draft permit.

A public meeting request was received on July 21, 2021. The Secretary held a public meeting on September 2, 2021 and the comment period was extended to September 10, 2021. All written comments received by 4:30 PM on September 10, 2021, will be retained by the Secretary and considered in the formulation of the final determination to issue, deny or modify the draft permit.

The comments received are addressed in the attached Responsiveness Summary.

Vermont Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Davis 3
802-828-1535

MEMORANDUM

Prepared by: John Merrifield, Wastewater Program (WWP)
Cc: Pete LaFlamme, Director, WSMD
Rick Levey, Monitoring and Assessment Program (MAP)
Amy Polaczyk, Manager, WWP
Bethany Sargent, Manager, MAP

Date: **April 27, 2021**

Subject: Reasonable Potential Determination for the Rutland Wastewater Treatment Facility

I. Facility Information:

Rutland Wastewater Treatment Facility (WWTF)
Rutland, VT
Permit No. 3-1285
NPDES No. VT0100871
Facility Location: 43.60388, -72.9938 (NAD 83)
Approximate Outfall Location: 43.6031, -72.9948 (NAD 83)

II. Hydrology:

Receiving water: Otter Creek
Facility Design Flow: 8.100 MGD = 12.533 CFS
Estimated 7Q10[1] = 68.6 CFS
Estimated LMM[2] = 167.0 CFS
Instream Waste Concentration at 7Q10 Flow (IWC-7Q10) = 0.155 (>10%)
Instream Waste Concentration at Low Median Monthly Flow (IWC-LMM) = 0.070 (>1%)

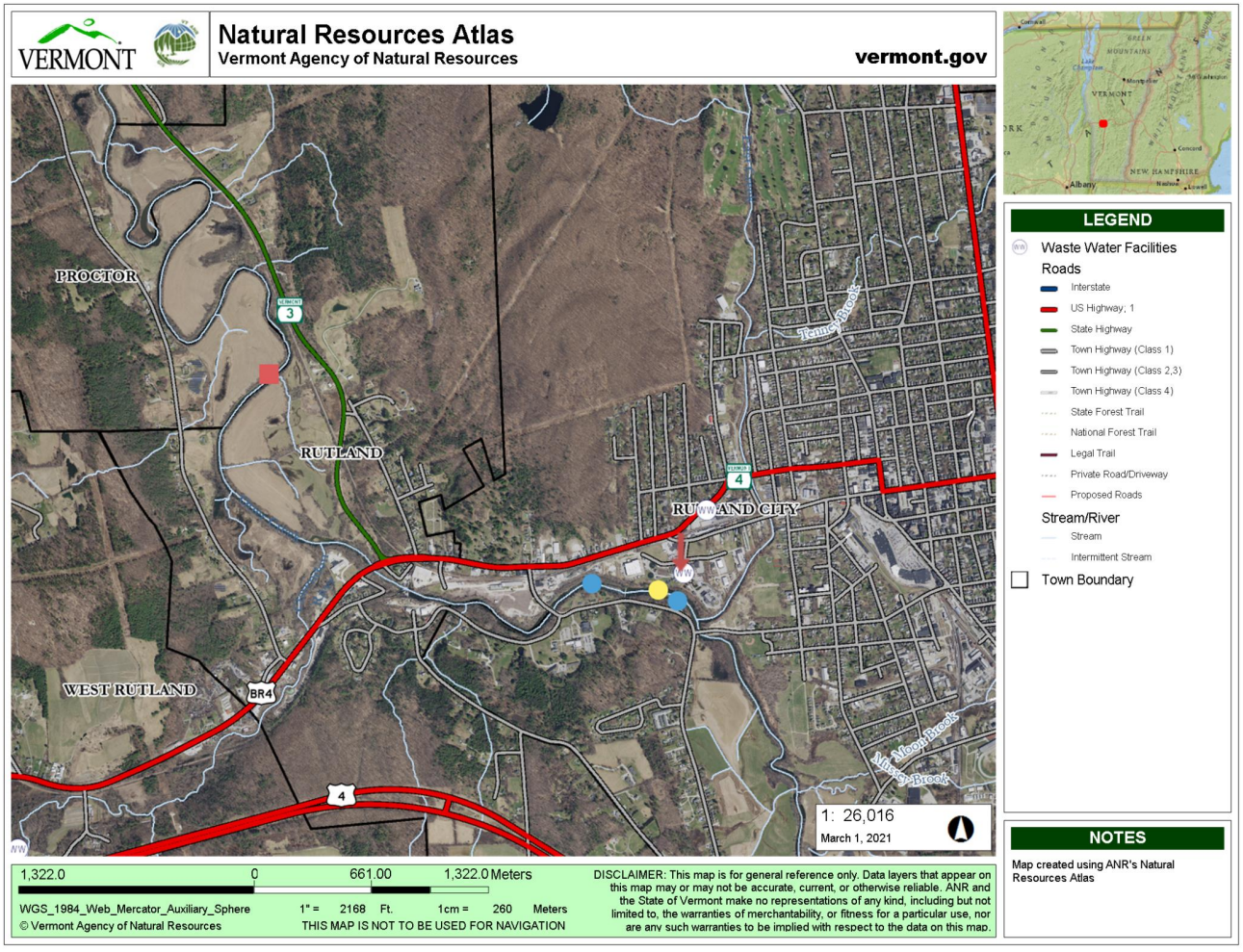
The Town of Rutland owns and operates the Rutland Wastewater Treatment Facility (WWTF) which is an is activated sludge extended aeration system. Treated wastewater is disinfected with chlorine and then dechlorinated prior to discharge..

[1] Using daily mean streamflows, the flow of the receiving water equal to the minimum mean flow for seven consecutive days, that has a 10% probability of occurring in any given year.

[2] "Low Median Monthly Flow". Using daily mean streamflows, the median monthly flow of the receiving water for that month having the lowest median monthly flow.

The Otter Creek downstream of the Rutland WWTF discharge is a Class B (2) water and is designated as Cold Water Fish Habitat. At the point of discharge, the river has a contributing drainage area of 307 square miles. The existing permitted waste management zone (WMZ) begins at the outfall of the WWTF and extends downstream 2.10 mile (Figure 1) pursuant to 10 V.S.A., Section 1252.

Figure 1. Otter Creek near the Rutland WWTF. The facility location is represented by a white dot containing "WW "and a blue arrow, the outfall location is indicated by a yellow dot, upstream sampling location at RM 71.8 and downstream monitoring locations at RM 71.5 shown by blue dots, and the end of the 2.1 long WMZ is represented by the red square. . Figure produced with the Vermont Integrated Watershed Assessment System on the VT Agency of Natural Resources Atlas (https://anrweb.vt.gov/DEC/IWIS/).



This memo is organized into the following sections:

- Summary of Effluent Data for the Rutland WWTF
- Summary of Instream Ambient Chemistry Data for the Otter Creek
- Biological Assessments upstream and downstream of the Rutland WWTF
- Assessment of Reasonable Potential of the Rutland WWTF discharge to exceed Vermont Water Quality Standards (VWQSs)

III. Effluent Data for the Rutland WWTF

Table 1a. Effluent Data for the Rutland WWTF from 3/31/2016 to 1/31/2021.

Parameter Name	Limit	Units	Min	Average	Max	Count
BOD, 5-DAY (20 DEG. C) - Weekly Average	45	mg/l	2	5.7	15	58
BOD, 5-DAY (20 DEG. C) - Daily Maximum	50	mg/l	2	5.8	15	58
BOD, 5-DAY (20 DEG. C) - Monthly Average	30	mg/l	2	4.9	11	58
BOD, 5-DAY (20 DEG. C) - Monthly Average	1701	lbs/day	61.3	217.9	766	58
BOD, 5-DAY (20 DEG. C) - Weekly Average	2552	lbs/day	61.3	286.6	1281	58
BOD, 5-DAY (20 DEG. C) - Influent Monthly Average	MO	mg/l	65	170.1	303	58
BOD, 5-DAY Percent Removal Monthly Minimum	85	%	90	96.8	99	58
SOLIDS, SUSPENDED Percent Removal Monthly Minimum	85	%	91	97.1	99.5	58
TOTAL SUSPENDED SOLIDS (TSS) - Weekly Average	45	mg/l	3	7.2	24	58
TOTAL SUSPENDED SOLIDS (TSS) - Daily Maximum	50	mg/l	3	7.6	24	58
TOTAL SUSPENDED SOLIDS (TSS) - Monthly Average	30	mg/l	2	5.8	16	58
TOTAL SUSPENDED SOLIDS (TSS) - Monthly Average	1701	lbs/day	55.3	264.6	1283.7	58
TOTAL SUSPENDED SOLIDS (TSS) - Weekly Average	2552	lbs/day	60.7	365.2	1471.2	58
TOTAL SUSPENDED SOLIDS (TSS) - Influent Monthly Average	MO	mg/l	100	233.8	469	58

Table 1b. Effluent Data for the Rutland WWTF from 3/31/2016 to 1/31/2021.

Parameter Name	Limit	Units	Min	Average	Max	Count
pH - Maximum	8.5	SU	7.2	7.7	8.1	58
pH - Minimum	6.5	SU	6	6.9	7.4	58
SETTLEABLE SOLIDS - Instant Maximum	1	ml/l	0	0.0	0.5	58
NITROGEN, KJELDAHL TOTAL (AS N) - Daily Maximum	MO	lbs/day	1.4	64.6	231.7	20
ULTIMATE OXYGEN DEMAND (UOD) - Daily Maximum	2250	lbs/day	195.6	558.3	1598	20
PHOSPHORUS, TOTAL (AS P) - Monthly Average	0.8	mg/l	0.11	0.2	0.68	58
PHOSPHORUS, TOTAL (AS P) - Monthly Average	45.4	lbs/day	4	9.8	31.1	58
E. COLI, THERMOTOL, MF, M-TEC - Monthly Maximum	77	cfu/100ml	2	11.5	68	58
FLOW, IN CONDUIT OR THRU TREATMENT PLANT - Annual Average	8.1	MGD	2.72	4.7	8.86	57
CHLORINE, TOTAL RESIDUAL - Daily Maximum	0.1	mg/l	0.01	0.04	0.08	58
SEPTAGE DISCHARGED TO TREATMENT FAC - Influent Daily Maximum	MO	lbs/day	6000	35726.3	58000	58

Whole Effluent Toxicity Data Summary:

A. Whole Effluent Toxicity (WET) Data Summary:

Whole Effluent Toxicity (WET) data for this facility is presented below in Table 1c. No WET limits were included in the previous permit.

Table 1c. Whole Effluent Toxicity Test Results for the Rutland WWTF.

	Pimephales promelas		*Ceriodaphnia dubia*	
Test Start Date	Acute		Acute	
	NOEC %	LC50 %	NOEC %	LC50 %
12/5/2007	100	>100	100	>100
8/17/2005	100	>100	100	>100

Analysis of the acute WET test data indicates that this facility's effluent did not contain toxic substances that cause acute toxicity in the receiving water at the time the samples were collected. It should be noted that while this data is the most recent available that it is from more than 10 years ago and may not reflect current the current effluent.

This facility has a 7Q10 IWC of 0.155 (>10%). This value exceeds the IWCs described in the RPD Decision Trees for facilities to have potential RP for Total Ammonia Nitrogen (TAN) toxicity and Priority Pollutant Metals toxicity.

40 CFR Part 122.44(d)(1) requires the Secretary 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.

To provide additional data for future assessments of WET reasonable potential, it is recommended that four 2-species (*Ceriodaphnia dubia* and *Pimephales promelas)* 48 hour acute/ 96 hour chronic tests be included in the draft permit, two during the summer (August/October 2022 & 2024) and two during the winter (January/February 2023 & 2025). It is also suggested that concurrent sampling for TAN, TRC and priority pollutants be conducted with each of these tests.

B. Biological Assessments and Ambient Chemistry Data for the Otter Creek upstream and downstream of the Rutland WWTF

The Otter Creek in the vicinity of the Rutland City WWTF is on the 2020 303(d) List of Impaired Waters. The problem of multiple CSOs and the pollutants E. coli, organic enrichment and sewage indicators have caused the receiving water not to meet Vermont Water Quality Standards.

Biological Assessments:
Biological assessments were conducted upstream of the facility at RM 71.8 by VTDEC on 10/4/1988 and downstream of the facility at RM 71.5 on 9/21/2020. No additional macroinvertebrate data has been collected at RM 71.8 upstream of the facility since then. Downstream data is sufficient and appropriate to illustrate that benthic assessments have met VWQS. It should be noted that data only represents the point in time when it was collected and data presented prior to 9/21/2020 is presented for historic context only. The most recent biological assessment meets VWQS for aquatic biota and aquatic habitat uses for the Class B Medium, High-Gradient stream type. Macroinvertebrate monitoring data is summarized below in Table *2*.

Table 2. Results of the Biological Monitoring for Macroinvertebrates on the Otter Creek, (RM 71.5 & RM 71.8) near the Rutland WWTF outfall.

Macroinvertebrate Site Summary - Otter Creek											
Date	Location	RM	Density	Richness	EPT Richness	PMA-O	B.I.	Oligo.	EPT/EPT + Chiro	PPCS-F	Community Assessment
10/10/1985	Below	71.5	1125	23.0	7.5	23.6	7.26	20.69	0.30	0.31	Does not meet VWQS
10/4/1988	Below	71.5	3236	39.0	15.0	55.4	5.50	0.11	0.48	0.44	Does not meet VWQS
	Above	71.8	1658	41.0	17.5	62.0	4.36	0.97	0.58	0.43	Meets VWQS
9/5/1991	Below	71.5	2472	45.0	17.0	56.2	5.54	0.00	0.58	0.43	Indeterminate
9/25/1996	Below	71.5	2472	58.0	26.0	73.2	4.96	0.49	0.65	0.61	Meets VWQS
9/28/2006	Below	71.5	5028	66.0	32.0	70.5	4.81	2.31	0.83	0.67	Meets VWQS
9/27/2016	Below	71.5	4024	49.0	25.0	57.7	5.17	0.10	0.85	0.48	Meets VWQS
9/21/2020	Below	71.5	6156	53.0	28.0	59.2	5.16	0.07	0.86	0.52	Meets VWQS
Indeterminate			≥ 250	≥ 28	≥ 15	≥ 40	≤ 5.65	≤ 14.5	≥ 0.43	≥ 0.35	
Non-Support			< 250	< 28	< 15	< 40	> 5.65	> 14.5	< 0.43	< 0.35	

C. Ambient Chemistry Data:

The most recent ambient chemistry data available from VTDEC sampling is from 9/21/2020, when surface waters were sampled upstream of the outfall at River Mile (RM) 71.8 and downstream of the outfall at RM 71.5. The upstream sampling location is 0.1 miles upstream and the downstream sampling location is 0.2 miles downstream from the WWTF outfall (Figure 1).

Data representativeness are assessed by evaluating the observed flow conditions from field sheets, whether measured or qualitatively described, at which samples were collected. Other contemporaneous streamflow data, such as the U.S. Geological Survey stream gage network, are also taken into consideration where proximal and representative of the hydrologic conditions at the time (e.g., unimpacted by artificial flow regulation). The downstream sampling location at this site is the most sensitive location, and the sampling results are determined to be representative of low flow based on a review of available streamflow observations. Thus, the data presented below are relevant for inclusion in this analysis.

Data used to evaluate in-stream chemistry is collected under low flow conditions (typically August or September) when turbidity is low and no precipitation has been observed for 3 days.

Water chemistry measures of relevant parameters for this assessment are summarized in Tables 3a and 3b.

Table 3a. Surface-water quality data upstream and downstream of the Rutland Wastewater Treatment Facility collected by VTDEC.

Visit Date	Location ID	RM	Location Name	Flow Level	Alkalinity (mg/l)	Conductivity (umho/cm)	Dissolved Inorganic Carbon (mg/l)	Dissolved Organic Carbon (mg/l)	Dissolved Oxygen (mg/l)	Dissolved Oxygen Saturation (%)	pH (None)	Temperature (deg C)	Total Ammonia Nitrogen (mg/l)	Total Chloride (mg/l)	Total Color measured using the visual method (PCU)	Total Hardness (mg/l)	Total Nitrate/Nitrite Nitrogen (mg/l)	Total Nitrogen (mg/l)	Total Phosphorus (ug/l)	Total Sulfate (mg/l)	Turbidity (NTU)
8/8/2016	500923	71.8	Otter Creek	Low		259			8.1	94.1	7.7	22.06	0.052	21.3				0.35	16.2		0.5
9/28/2016	500923	71.8	Otter Creek	Low	106	201					8	14.1	<0.05	15.1		110.455	0.05	0.24	15.1	6.48	2.77
7/8/2020	500923	71.8	Otter Creek	Low	97	270.5	23.2	3.9	7.62	95.2	7.86	23.9	0.063	23.9	17.5	109	0.104	0.36	13.7	4.11	
8/8/2016	502230	71.5	Otter Creek	Low		251			8.28	97	7.88	22.5	0.054	19.8		91.197		0.98	31.3		0.7
9/27/2016	502230	71.5	Otter Creek	Low	106	245					8.15	15.1	<0.05	25.83		117.469	1.37	1.61	29.6	7.95	2.45
7/8/2020	502230	71.5	Otter Creek	Moderate	98.8	291.5	23.8	4.2	7.69	96.1	7.79	24	0.06	27.7	17.5	107	0.622	1.72	21.2	5	
9/21/2020	502230	71.5	Otter Creek	Low		342.9			9.83	97.9	8.26	11.73			22		1.56	1.77	26		1.5

Table 3b. Surface-water metals data upstream and downstream of the Rutland Wastewater Treatment Facility collected by VTDEC.

Visit Date	Location ID	RM	Location Name	Flow Level	Total Aluminum (ug/l)	Total Antimony (ug/l)	Total Arsenic (ug/l)	Total Barium (ug/l)	Total Beryllium (ug/l)	Total Cadmium (ug/l)	Total Calcium (mg/l)	Total Chromium (ug/l)	Total Cobalt (ug/l)	Total Copper (ug/l)	Total Iron (ug/l)	Total Lead (ug/l)	Total Magnesium (mg/l)	Total Manganese (ug/l)	Total Molybdenum (ug/l)	Total Nickel (ug/l)	Total Potassium (mg/l)	Total Selenium (ug/l)	Total Silver (ug/l)	Total Sodium (mg/l)	Total Strontium (ug/l)	Total Thallium (ug/l)	Total Uranium (ug/L)	Total Vanadium (ug/l)	Total Zinc (ug/l)
8/8/2016	500923	71.8	Otter Creek	Low																									
9/28/2016	500923	71.8	Otter Creek	Low	61.74		<1			<1	27.1	<5		<10	568.5	<1	10.39	134.7		<5	1.195	<5		9.629					<50
7/8/2020	500923	71.8	Otter Creek	Low	36	<5	<1	18.9	<1	<1	27.3	<1	<1	<5	283	<1	9.99	110	<5	<1	1.21	<1	<1	15	53.7	<1	<1	<1	<10
8/8/2016	502230	71.5	Otter Creek	Low	58.17	<10	<1	16.14	<1	<1	23.55	<5	<1	<10	223	<1	7.866	59.03	<5	<5	1.641	<5	<1	12.49	43.88	<1	<1	<25	<50
9/27/2016	502230	71.5	Otter Creek	Low	40.56		<1			<1	28.87	<5		<10	468.7	<1	11.02	96.14		<5	1.702	<5		19.15					<50
7/8/2020	502230	71.5	Otter Creek	Moderate	43	<5	<1	18.6	<1	<1	26.7	<1	<1	<5	259	<1	9.76	108	<5	<1	1.38	<1	<1	16.6	53.2	<1	<1	<1	<10

IV. Assessment of Reasonable Potential of the Rutland WWTF discharge to exceed Vermont Water Quality Standards

A. ***Methodology***:

A steady-state mass balance approach was used to assess reasonable potential for the potential pollutants of concern based on the methods described in the Technical Support Document for Water Quality-based Toxics Control (TSD; EPA/505/2-90-001). The expected receiving water concentrations (RWC; C_r) of pollutants were calculated according to Equation 1 at critical conditions. If the expected receiving water concentration determined exceeds the applicable Vermont Water Quality Standard, limits must be included in the permit. Tables 4, 5 and 6 present this analysis for the Rutland WWTF.

$$\text{Equation 1.} \quad C_r = \frac{(Q_e)(C_e)+(Q_s)(C_s)}{Q_r}$$

Where:
C_r = resultant expected receiving water pollutant concentration (mg/L or ug/L)
Q_e = maximum permitted effluent flow (cfs).
C_e = critical effluent pollutant concentration (mg/L or ug/L)
Q_s = stream flow upstream of the point of discharge (cfs). Low Median Monthly flow for nutrients, 7Q10 for applying toxics criteria. When applicable, 30Q10 is used for chronic Total Ammonia Nitrogen assessments.
C_s = critical background in-stream pollutant concentration (units dependent on parameter, typically mg/L or ug/L).
$Q_r = (Q_s + Q_e)$ = resultant in-stream flow, after discharge (cfs)

NPDES regulations at §122.44(d)(1)(ii) require that permit writers consider the variability of the pollutant in the effluent when determining the need for Water Quality-Based Effluent Limits (WQBELs). EPA guidance for permit writers on how to characterize effluent concentrations of certain types of pollutants using a limited data set and accounting for variability is detailed in the TSD. The current analysis uses the TSD procedure to project a critical effluent concentration (C_{etsd}) of the 95th percentile of a lognormal distribution of observed effluent concentrations over 5 years. The 95th percentile is calculated from the effluent data set using the number of available effluent data points (n) for the measured concentration of the pollutant and the coefficient of variation (CV) of the data set to predict the critical pollutant concentration in the effluent. When less than 10 data points are available, the CV is set to 0.6. For less than 10 items of data, the uncertainty in the CV is too large to calculate a standard deviation or mean with sufficient confidence (TSD). The CV and n are used to determine the factor (TSD pg 54) that is multiplied by the maximum observed effluent concentration (C_e) to determine C_{etsd}.

$$\text{Equation 2.} \quad C_{etsd} = TSD_{factor} \times C_e$$

Where:
C_{etsd} = Effluent concentration adjusted to 95th percentile value (mg/L or ug/L)
TSD_{factor} = Factor based upon EPA TSD Table 3-2, pg 54
C_e = critical (maximum observed) effluent pollutant concentration (mg/L or ug/L)

The Instream Waste Concentration (IWC) is a measure of the effluent dilution and is also used as an estimate of the facility's potential to cause or contribute to an excursion of the VWQS. The IWC equation is the simplification of the flow portion of the mass balance equation (Equation 1) and is shown below in Equation 3:

$$\text{Equation 3.} \quad IWC = \frac{(Q_e)}{(Q_r)}$$

The critical effluent pollutant concentration (C_e) can be multiplied by the IWC to approximate the resultant receiving water concentrations (C_r).

This analysis of reasonable potential used the following data and assumptions:

- Average values of observed upstream and downstream chemical data were used for most calculations; exceptions are described below.
- Upstream pollutant concentrations (C_s) and effluent concentrations (C_e) were set equal to one half the method detection limit when data were censored at the detection limit.
- Effluent pollutant concentrations (C_{etsd}) were set to the maximum observed effluent concentrations * TSD 95th percentile multiplier over the last 5 years of data collected.
- TAN analyses were divided into summer (June 1- October 31) and winter (November 1 – May 31). Summer TAN analyses used defaults of 20ºC for coldwater fish habitat streams and 25 ºC for warmwater fish habitat streams. Winter water temperature was assumed to be 5 ºC. The highest observed downstream pH values were used for both winter and summer.
- Hardness for determining hardness-dependent metal criteria is based upon the lowest observed downstream concentration.

The spreadsheet used for these calculations is part of the permit record and available upon request.

D. Total Residual Chlorine:

The results of mass balance calculations for Total Residual Chlorine(TRC) and Total Ammonia Nitrogen (TAN) were calculated using Equation 1 and are presented in Table 4.

Table 4. Mass Balance for Total Residual Chlorine and Ammonia around the Rutland WWTF

	Chlorine	Total Ammonia Nitrogen - Summer (mg/L)	Notes
Qs (cfs)	68.57		*Estimated 7Q10 flow*
Qe (cfs)	12.533		*permitted effluent discharge*
Qr = Qs + Qe (cfs)	81.10		*Qs+Qe*
7Q10 IWC	0.155		*Qe/(Qs+Qe)*
Cs	0	0.05	*upstream pollutant concentration*
Max Observed Ce	0.080	2.700	*effluent pollutant concentration without adjustment by TSD factor*
Cetsd	0.10	10.26	*effluent pollutant concentration adjusted by TSD factor*
Number of Observations	59	2	
Min. No. of Observations for RP	10	10	
Cr = (CsQs+CeQe)/Qr	0.012	0.46	*resultant pollutant concentration in receiving water without TSD adjustment*
Cr = (CsQs+CetsdQe)/Qr	0.016	1.62	*resultant pollutant concentration in receiving water with TSD method*
VWQS Criteria (2017)			
Protection of Aquatic Biota - Acute	0.019	2.37	
Protection of Aquatic Biota - Chronic	0.011	1.30	
Exceedance Calculated?			
Protection of Aquatic Biota - Acute without TSD adjustment	NO	NO	
Protection of Aquatic Biota - Chronic without TSD adjustment	YES	NO	
Protection of Aquatic Biota - Acute with TSD adjustment	NO	NO	
Protection of Aquatic Biota - Chronic with TSD adjustment	YES	YES	
Sufficient Data to Determine RP?	YES	NO	

This facility has a reasonable potential to violate VWQS for TRC. The existing limits have been checked and should be updated to be protective of VWQS under chronic conditions. Daily sampling should continue.

TAN results are discussed in Section G below.

E. Metals

The results of mass balance calculations for Priority Pollutant metals were calculated using Equation 1 and are presented in Table 5.

Table 5. Mass Balance for Metals of Concern around the Rutland WWTF

		Metal (Total)									
	unit	Antimony	Arsenic	Cadmium	Chromium III	Copper	Lead	Nickel	Silver	Thallium	Zinc
Hardness as $CaCO_3$	mg/L	91.20									
Qe	cfs	12.53									
Cetsd	ug/L	1.5	2.5	5.0	15.0	15.0	50.0	10.0	10.0	0.5	82.0
Data Adjustment?		*	*	*	*	*	*	*	*	*	
Qs	cfs	68.6									
Cs (Average)	ug/L	2.5	0.5	0.5	1.5	3.8	0.5	1.5	0.5	0.5	15.0
Data Adjustment?		*	*	*	*	*	*	*	*	*	*
Qr = Qs+Qe	cfs	81.10									
Cr = (QeCetsd+QsCs)/Qr	ug/L	2.35	0.81	1.20	3.59	5.49	8.15	2.81	1.97	0.50	25.35
Aquatic Biota Acute criteria	ug/L	none	340	1.8	5291	13.4	90.26	434.9	3.8	none	113.3
Aquatic Biota Chronic criteria	ug/L	none	150	0.8	92.9	9.0	3.5	48.4	-	none	112.4
Does data include qualifiers?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is there sufficient effluent data?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is an acute exceedance calculated?		No	No	No	No	No	No	No	No	No	No
Is a chronic exceedance calculated?		No	No	Yes	No	No	Yes	No	No	No	No
Is there acute RP?		No	No	No	No	No	No	No	No	No	No
Is there chronic RP?		No	No	No	No	No	No	No	No	No	No

Note: * indicates that the data had a < qualifier and that 1/2 of the Method Detection Limit was used for calculation purposes. Calculations based upon data adjusted in this manner are used to recommend additional monitoring but are not used to determine Reasonable Potential. Three sets of effluent monitoring data are also required to determine Reasonable Potential.

This facility does not have RP for metals toxicity based upon currently available data. Exceedances were calculated for Cadmium and Lead, but the method detection limits used in the analyses were not sufficiently precise to confidently determine RP.

This facility has a 7Q10 IWC of 0.155 (>10%). This value exceeds the IWC described in the RPD Decision Trees for facilities to have potential RP for Metals toxicity.

40 CFR Part 122.44(d)(1) requires the Secretary 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.

To provide additional data for future assessments of metals toxicity reasonable potential, the effluent should be analyzed for the pollutants included in Appendix J, Table 2 of 40 CFR Part 122, including metals, a minimum of four times during the next permit. This analysis should be conducted concurrently with any WET testing included in the permit.

F. Nutrients

The results of mass balance calculations for Total Nitrogen and Total Phosphorus were calculated using Equation 1 are presented in Table 6.

Table 6. Mass Balance of Nutrients of Concern around the Rutland WWTF.

	Total Phosphorus (ug/l)	Total Nitrogen (mg/l)	Notes
Qs (cfs)	167.00		*Estimated LMM flow*
Qe (cfs)	12.533		*permitted effluent discharge*
Qr = Qs + Qe (cfs)	179.53		*Qs+Qe*
LMM IWC	0.0698		*Qe/(Qs+Qe)*
Cs	15.00	0.32	*upstream pollutant concentration (average)*
Ce	680	13.3	*maximum effluent pollutant concentration observed*
Cetsd	884	50.5	*effluent pollutant concentration adjusted by TSD method.*
Cr = (CsQs+CeQe)/Qr	61.4	0.9	*calculated resultant downstream pollutant concentration without TSD factor of safety*
Cr = (CsQs+CetsdQe)/Qr	75.7	3.8	*calculated resultant downstream pollutant concentration*
Stream Type	B2 Medium, High-Gradient		
Calculated Instream Contribution from Effluent without TSD method	46	0.9	*difference between observed upstream concentration and calculated resultant downstream concentration. Without TSD method*
Calculated Instream Contribution from Effluent with TSD method	61	3.5	*difference between observed upstream concentration and calculated resultant downstream concentration. With TSD Method*
VWQS Criteria (2017)		None for Streams	
Threshold Criteria	15		
Threshold Exceeded without TSD method?	Yes		
Threshold Exceeded with TSD method?	Yes		

G. Total Nitrogen:

TN is the sum of nitrate, nitrite, ammonia, soluble organic nitrogen, and particulate organic nitrogen. To gather data on the amount of Total Nitrogen (TN) in this discharge and its potential impact on the receiving water, weekly summer and monthly winter "monitor only" requirements for Nitrate/Nitrite (NOx), Total Nitrogen (TN) and Total Kjeldahl Nitrogen (TKN) are suggested for inclusion in this permit. The summer period should be changed from the current June 15-September 30 to June 1-October 31 to bring this permit into alignment with other permits. Winter time should likewise change from October 1- June 14 to November 1 – May 30.

TN is a calculated value based on the sum of NOx and TKN, and, shall be reported as pounds, calculated as:

Average TN (mg/L) x Total Daily Flow (MGD) x 8.34 = Pounds TN/day
where, TN (mg/L) = TKN (mg/L) + NOx (mg/L)

Per EPA excess nitrogen (N) and phosphorus (P) are the leading cause of water quality degradation in the United States. Historically nutrient management focused on limiting a single nutrient—phosphorus or nitrogen—based on assumptions that production is usually phosphorus limited in freshwater and nitrogen limited in marine waters. Scientific research demonstrates this is an overly simplistic model. The evidence clearly indicates management of both phosphorus and nitrogen is necessary to protect water quality. The literature shows that aquatic flora and fauna have differing nutrient needs, some are P dependent, others N dependent and others are co-dependent on these two nutrients.

Like P, N promotes noxious aquatic plant and algal growth. High concentrations of P and N together cause greater growth of algae than P alone. The relative abundance of these nutrients also influences the type of species within the community. Furthermore, a high N-to-P ratio may exacerbate the growth of cyanobacteria, while elevated levels of nitrogen increase toxicity in some cyanobacteria species. Given the dynamic nature of all aquatic ecosystems, for the State to fully understand the degradation to water quality it is necessary to limit P and monitor bioavailable N (including nitrate, ammonium, and certain dissolved organic nitrogen compounds).

Total Ammonia Nitrogen:

The results of mass balance calculations for TAN were calculated using Equation 1 and are presented above in Table 3.

This facility does not have any effluent data for winter (November 1 – May 31) ammonia and only 3 points from summer (June 1 – October 31) TAN. This is not a sufficient amount of data to determine reasonable potential.

This facility has a 7Q10 IWC of 0.155 (>10%). This value exceeds the IWC described in the RPD Decision Trees for facilities to have potential RP for TAN toxicity.

40 CFR Part 122.44(d)(1) requires the Secretary 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.

To provide additional data for future assessments of TAN reasonable potential, it is recommended that monthly monitoring with a monitor only condition be included in the next permit. This analysis should be conducted concurrently with any WET testing included in the permit.

H. Total Phosphorus:

The potential impacts of phosphorus discharges from this facility to the receiving water have been assessed in relation to the narrative criteria in §29A-302(2)(A) of the 2017 VWQS, which states:

In all waters, total phosphorous loadings shall be limited so that they will not contribute to the acceleration of eutrophication or the stimulation of the growth of aquatic biota in a manner that prevents the full support of uses.

To interpret this standard, the Secretary relies on a framework which examines TP concentrations in relation to existing numeric phosphorus criteria and response criteria in §29A-306(a)(3)(c) of the VWQS, for streams that can be assessed using macroinvertebrate biocriteria. Under this framework, a positive finding of compliance with the narrative standard can be made when nutrient criteria are attained, or when specific nutrient response variables; pH, Turbidity, Dissolved Oxygen, and aquatic life use, all display compliance with their respective criteria in the Water Quality Standards. To assist in determining whether this facility's TP discharge is in compliance with VWQS the analysis is broken into an analysis of the TP numeric standard and an analysis of the Nutrient Response Conditions needed to determine compliance with the narrative standard.

Total Phosphorus Numeric Analysis:

The TP concentrations in the Otter Creek are greater than the 2017 nutrient criteria threshold of 15 ug/L Total Phosphorus in a Class B Medium, High-Gradient stream. The calculated change in the in-stream TP concentration attributable to the Rutland WWTF is 61 ug/L. This calculation is presented above in Table 6.

Total Phosphorus Nutrient Response Conditions Analysis:

The Combined Nutrient Response Conditions for Aquatic Biota and Wildlife in Rivers and Streams at RM 71.5 on 9/21/2020 meets VWQS for pH, meets VWQS for Turbidity , meets VWQS for Dissolved Oxygen and meets VWQS for Aquatic Biota as shown below in Table 7. Therefore, the narrative standard presented in §3-01.B.2 of the VWQS is supported and the receiving waters are in compliance with VQWS for Total Phosphorus but may still be subject to limits proscribed by VSA 1266a or a Phosphorus TMDL.

Table 7. Assessment of Phosphorus Response Variables around the Rutland WWTF

Response variable (VWQS reference)	Target Value for Cold Water Fish Habitat	River-mile: 71.5 9/21/2020
pH (§3-01.B.9)	6.5-8.5 s.u.	*8.26*
Turbidity (§3-04.B.1)	< 10 NTU at low mean annual flow	*1.5*
Dissolved Oxygen (min) (§3-04.B.2)	>6 mg/L and 70% saturation	*9.83 (97.9%)*
Aquatic biota, based on macroinvertebrates.	Attaining an assessment of good, or better.	*Meets VWQS*

Total Phosphorus Reasonable Potential Determination:

The numeric criteria for TP are exceeded when calculated at this facility's full design flow and with the receiving water at LMM conditions. The narrative criteria for TP are satisfied and therefore this facility does not have reasonable potential to violate VWQS.

This facility has a monthly average limit of 45.4 pounds which would equal a maximum annual load of approximately 16,571 pounds per year.

This facility is subject to the 2016 Lake Champlain Phosphorus TMDL. That document reduces the facility's Annual Waste Load Allocation to 5.634 mt/year or 12,420 lbs/year.

This facility is subject to 10 V.S.A. 1266a, which reads "No person directly discharging into the drainage basins of Lake Champlain or Lake Memphremagog shall discharge any waste that contains a phosphorus concentration in excess of 0.80 milligrams pper liter on a monthly average basis. Discharges of less than 200,000 gallons per day, permitted on or before July 1, 1991, shall not be subject to the requirements of this subsection." Therefore, the permit must include a Total Phosphorus limit of 0.8 mg/L.

The new permit should contain an annual TP Waste Load Allocation of 12,420 pounds/year and a monthly average concentration limit of 0.8 mg/l. The monthly average limit of 45.4 lbs/day should be retained. Sampling should remain weekly.

V. Summary of Reasonable Potential Determinations

This facility has a reasonable potential to violate VWQS for TRC. The existing limits have been checked and should be updated to be protective of VWQS under chronic conditions. Daily sampling should continue. A memo with new permit limits is attached.

A. Recommended Biological and Water Quality Monitoring:

As biological monitoring results indicate attainment of aquatic biota thresholds, the stream complies with VWQS for all identified response variables, and the narrative standard presented in §29A-302(2)(A) of the VWQS is supported (as shown in *Table 6*), it is not necessary to include biomonitoring in the draft permit.

B. Recommended Effluent Monitoring:

In addition to the monitoring required in the current permit, the following monitoring is suggested for inclusion in the renewed permit to provide additional data to support future Reasonable Potential Determinations:

- To provide additional data for future assessments of WET reasonable potential, it is recommended that four 2-species (*Ceriodaphnia dubia* and *Pimephales promelas)* 48 hour acute/ 96 hour chronic tests be included in the draft permit, two during the summer (August/October 2022 & 2024) and two during the winter (January/February 2023 & 2025). It is also suggested that concurrent sampling for ammonia, TRC and priority pollutants be conducted with each of these tests.
- This facility has a reasonable potential to violate VWQS for TRC. The existing limits have been checked and should be updated to be protective of VWQS under chronic conditions. Daily sampling should continue. A memo with new permit limits is attached.
- To provide additional data for future assessments of metals toxicity reasonable potential, the pollutants included in Appendix J, Table 2 of 40 CFR Part 122, including metals, should be analyzed a

minimum of four times during the next permit. This analysis should be conducted concurrently with any WET testing included in the permit.

- To gather data on the amount of Total Nitrogen (TN) in this discharge and its potential impact on the receiving water, weekly summer and monthly winter "monitor only" requirements for Nitrate/Nitrite (NOx), Total Nitrogen (TN) and Total Kjeldahl Nitrogen (TKN) are suggested for inclusion in this permit. The summer period should be changed from the current June 15-September 30 to June 1-October 31 to bring this permit into alignment with other permits. Winter time should likewise change from October 1- June 14 to November 1 – May 30.
- To provide additional data for future assessments of TAN reasonable potential, it is recommended that monthly monitoring with a monitor only condition be included in the next permit. This analysis should be conducted concurrently with any WET testing included in the permit.
- The new permit should contain an annual TP Waste Load Allocation of 12,420 pounds/year and a monthly average concentration limit of 0.8 mg/l. The monthly average limit of 45.4 lbs/day should be retained. Sampling should remain weekly.

C. 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, with the exception of Total Residual Chlorine (TRC). New WQBELs for TRC that are protective of VWQS have been developed for inclusion in the new permit. With the exception of TRC, this discharge does not appear to cause, have a reasonable potential to cause, or contribute to an instream toxic impact or instream excursion above the water quality criteria.

Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
1 National Life Drive Davis 3
802-828-1535

MEMORANDUM

Prepared by: John Merrifield, Wastewater Program (WWP)

Cc: Amy Polaczyk, Manager, WWP
Bethany Sargent, Manager, Monitoring and Assessment Program (MAP)
Rick Levey, MAP

Date: April 27, 2021

Subject: WQBEL Permit Limit Review and Calculations for the Rutland WWTF Facility (3-1285)

I. Introduction

This memo serves as a record of the review and calculation of Water Quality Based Effluent Limits (WQBEL) and is intended to supplement the Reasonable Potential Determination memo prepared for the subject facility. The memo is broken into the following parts:

- An introduction
- A description of new or revised permit limit requirements.
- A description of the methodology used to develop WQBEL permit limits
- Narrative justifications for any new permit limits

The spreadsheet used to perform these calculations is available upon request.

II. New Permit Limits

Effluent Characteristics (Constituents)	WQBEL Discharge Limitations									
	Annual Average	Annual Limit	Monthly Average	Weekly Average	Maximum Day	Monthly Average	Weekly Average	Maximum Day	Instanteous Maximum	Sampling Frequency
		lbs/year	Mass (lbs/day)			Concentration (mg/L)				(per month)
Total Phosphorus		12420	45.4			0.8				Twice a Month (Nov. 1 - May 31) Weekly (June 1 - Oct. 31)
Total Residual Chlorine						0.04		0.1		Daily (30)
Total Nitrogen			MO			MO				Monthly (Nov. 1 - May 31) Weekly (June 1 - Oct. 31)
Total Kjeldahl Nitrogen			MO			MO				
Nitrate/Nitrite Nitrogen			MO			MO				
Total Ammonia Nitrogen			MO			MO				Monthly (1)

The constituents shown above in Table 1 were developed in order to ensure that the proposed discharge is protective of Vermont Water Quality Standards (VWQS) in the receiving water.

The following constituents were not analyzed as WQBELs: Flow, Ultimate Oxygen Demand, BOD, TSS, Settleable Solids, E. coli and pH. These constituents are either subject to TBELs or the data and analytical capacity to model as WQBELs is unavailable.

III. WQBEL calculation methodology

The Water-Quality Based Effluent Limitations (WQBELs) for pollutants of concern were assessed via the mass balance steady state model method outlined in the Chapter 4 of the EPA's Technical Support Document for Water Quality-Based Toxics Control (TSD) (page 86). Results were then compared to the current permit limit. The recommended permit limit was selected by comparing applicable Technology-Based Effluent Limits (TBELs), current WQBELs, and WQBELs calculated based on 2017 VWQS acute and chronic criteria.

The steady-state mass balance method produces a Waste Load Allocation (WLA), the critical effluent pollutant concentration based on the VWQS acute and chronic critical thresholds for the constituent(s) of concern. The method assumes complete mixing of the pollutant within the receiving water. The resulting WLA is the WQBEL for each acute and chronic VWQS criteria dilution assessed.

Per the TSD method, WLA results were used to calculate the Long-Term Average (LTA) for each criteria type using methods provided in Table 5-1 (TSD page 102). WLA multipliers are picked from the 99th percentile column. The most conservative LTA is then used to determine the Maximum Daily Limit (MDL) or Average Monthly Limit (AML) using the calculation shown in Table 5-2 (TSD page 103). The 99th percentile column is used for the MDL calculation and the 95th percentile columns are used for the AML calculation.

In this process data for the facility and receiving waters is used. When necessary values for VWQS were calculated based upon the methods described in their appendices and footnotes. Monitoring frequency are taken from the existing permit or assigned for new pollutants based upon similar facilities. In the absence of ambient receiving water data a value of 5% of the VWQS has been generally assumed for the upstream concentration. Please see the individual calculation tabs for specific analyses.

The resulting MDL and AML are compared with the existing permit limits, any applicable TBELs including TMDLs, and any legislated limits to determine the final effluent limits that are protective of quality standards. The proposed limits are entered into the spreadsheet and Table 1 (above) and a short narrative is prepared justifying the limits. Those narratives are presented in the next section.

IV. Justification of Proposed WQBELs

1. Total Residual Chlorine

A new Maximum Day limit of 0.1 mg/l and new Monthly Average limit of 0.04 mg/l has been added to the permit. It is suggested that the existing Instantaneous Maximum permit limit of 0.1 mg/l be removed. For the purposes of this permit, TRC analysis must be completed using a test method in 40 C.F.R. § 136 that achieves a minimum level no greater than 0.05 mg/L. The compliance level for TRC for the Monthly Average concentration limit is 0.05 mg/L. Samples with a TRC concentration of 0.05 mg/L and below will be considered in compliance. The previous instantaneous maximum permit limit of

0.1 mg/l was protective of of VWQS for acute toxicity but not for chronic toxicity. Daily monitoring is required and remains unchanged.

2. Total Phosphorus

This facility has been assigned an Annual Limit of 12420 lbs of Total Phosphorus in the 2016 Lake Champlain Phosphorus TMDL. This facility is subject to VSA 1266a and should retain its monthly average TP limit of 0.8 mg/l. The facility's existing monthly average limit of 45.4 lbs/day should be retained. Sampling should remain at weekly during the summer and twice a month during the winter. The summer period should be changed from the current June 15-September 30 to June 1-October 31 to bring this permit into alignment with other permits. Winter time should likewise change from October 1- June 14 to November 1 – May 31.

3. Total Ammonia Nitrogen

This facility has an IWC great enough to have potential Total Ammonia Nitrogen toxic effects in the receiving water. In order to collect data to calculate the reasonable potential for this facility to violate VWQS for Total Ammonia Nitrogen a monthly monitor only requirement has been added to the permit.

4. Total Nitrogen, Kjeldahl Nitrogen and Nitrate/Nitrite Nitrogen

To gather data on the amount of Total Nitrogen (TN) in this discharge and its potential impact on the receiving water, weekly summer and monthly winter “monitor only” requirements for Nitrate/Nitrite (NOx), Total Nitrogen (TN) and Total Kjeldahl Nitrogen (TKN) are suggested for inclusion in this permit. The summer period should be changed from the current June 15-September 30 to June 1-October 31 to bring this permit into alignment with other permits. Winter time should likewise change from October 1- June 14 to November 1 – May 31.

ATTACHMENT B

RESPONSIVENESS SUMMARY

NPDES Discharge Permit No. 3-1285

City of Rutland

Wastewater Treatment Facility

The Vermont Agency of Natural Resources (Agency) placed the above referenced permit on public notice initially from May 25, 2021 to June 25, 2021. A request to extend the public comment period was received on June 18, 2021. The Agency agreed to extend the public comment period from May 25, 2021 to July 21, 2021. A request to schedule a public meeting was received on July 21, 2021. A public meeting was scheduled on September 2, 2021 and the public comment period was extended from May 25, 2021 to September 10, 2021.

Comments on the draft permit were received during the public notice period. These comments were directed both at the Rutland Wastewater Treatment Facility (WWTF) specifically and several were noted to apply to all four National Pollution Discharge Elimination System (NPDES) permits placed on public comment concurrently (Rutland, Brandon, Wallingford FD 1 and Pittsford). The following is a summary of the comments and the Agency's responses to those comments. A copy of any or all comments received can be obtained by contacting the Agency's Watershed Management Division at (802) 828-1115.

All comments received during the comment period are attached.

COMMENT #1

Revised Public Notice, page 1, TENTATIVE DETERMINATIONS – The tentative determination in this public notice states in relevant part, "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." This proposed determination does not accurately represent the true functioning and resulting impacts to the Otter Creek and its tributaries of the Rutland WWTF. In fact, the draft Permit acknowledges that there will be violations of the Vermont Water Quality Standards and Federal Clean Water Act by the Rutland WWTF and its CSOs during the term of its operation under the proposed Permit and provides for contingency responses when those non-conforming discharges occur.

In addition, the record is clear that the Rutland WWTF and infrastructure feeding the plant direct discharge raw sewage on a regular basis. This long term and very current history evidence that this Plant cannot regularly perform to a level that supports this tentative determination. In point of fact, we have been advised that a "1272 Order" is to be issued to the Plant in the very near future, subsequent to the issuance of the final Permit. 1272 Orders are issued when there are violations of permits or law or both and include remedial actions to be taken to hopefully eliminate the potential for future such failures and violations.

To be clear, the historic and anticipated future violations caused by the Plant include, but are not limited to, discharges that seriously violate the Vermont Water Quality Standards and the Clean Water Act, and do so on a regular basis. Thus, a more accurate tentative or final determination would state that, for instance, "The operation of the Rutland WWTF, despite the limitations imposed in this Permit, will continue the historic pattern of Vermont Water Quality Standards violations associated with untreated discharges until improvements are made to the Plant that allow for either diversion of separated and treated stormwater from the Plant infrastructure or otherwise provide for increases to storage and treatment capacity that address anticipated high flows that currently result in these violations. The new requirements contained in this Permit will enable the development of these infrastructure and technological improvements which will result in outcomes where no regular or anticipated violating discharges will occur after three years from this Permit's issuance."

RESPONSE #1

The proposed Permit does meet the Vermont Water Quality Standards (VWQS) and applicable Clean Water Act (CWA) provisions and the Agency therefore declines to change the provision identified by the comment.

It is important to differentiate between the operation of the Wastewater Treatment Facility (WWTF) and the design of the collection system. According to Department of Environmental Conservation (DEC) records, the Rutland City WWTF is well operated, and its last discharge of insufficiently treated effluent was 2009.

The collection system and associated combined sewer overflows are regulated by the Agency's duly adopted Environmental Protection Rule, Ch. 34, Combined Sewer Overflow Rule (effective September 15, 2016) (CSO Rule). Between April 16, 2007 and August 1, 2021 506 overflows of untreated or partially treated sewage, or undisinfected effluent were reported by the City of Rutland. Of these, 479 were authorized CSO discharges. Twenty-five were related to problems in the collection system, such as blockages, broken pipes, and equipment malfunctions at pump stations. One was due to an error during construction where sewage was pumped into a manhole at too high a rate, causing it to rise to the surface. A single incident of undisinfected effluent was reported at the WWTF on March 18, 2009. During the same time period, the Rutland WWTF exceeded the permit limit for Total Residual Chlorine 11 times, meaning that the treated effluent was being disinfected more aggressively than allowed.

The collection system must be considered as a separate issue because while the CSO discharge *points* are acknowledged in the National Pollution Discharge Elimination System (NPDES) permit, CSOs are not legally authorized discharges. CSOs must be brought into conformance with the VWQS as prescribed by the CSO Rule and the 1272 Order issued to the City of Rutland on May 8, 2018.

COMMENT #2

On a related matter, 1272 Orders were never supposed to be used as an end-run around meeting Vermont Water Quality Standards or NPDES permit requirements. This area of 10 VSA §1272 was meant to provide legal redress for unanticipated violations due to, say, the failure of

plant or WWTF plant infrastructure such as a failed pump station operation or failed treatment lagoon or some such. VANR has for 4 decades relied on using issued 1272 enforcement orders as a means to provide legal cover for illegal discharges and to allow for substandard permits and permit conditions regarding WWTF design capacity to continue to be issued.

Technically, permits to WWTFs such as Rutland should be denied as they CANNOT meet Vermont Water Quality Standards on a regular basis as currently designed, however we acknowledge that this essential infrastructure would need to continue operation even where a permit is denied. As such, VANR needs to acknowledge the problems with this and other similarly situated plants' designs and operations and as previously stated, include REAL permit requirements that WILL result in Plant and Plant infrastructure improvements over a reasonable timeframe, (but not more than 5 years) to see the Plant through to consistent compliance.

VANR needs to immediately cease using orders issued under 10 VSA §1272 or other enforcement mechanism as a de facto permitting process to allow for on-going activities outside of the law. VANR needs to also be reminded that generally only respondents can formally challenge enforcement orders through appeal to the courts, which sets up the additional matter of the use of 1272 Orders operating outside the normal checks and balances that public scrutiny and public routes of appeal provide through normal permitting process.

RESPONSE #2

The CSO Rule expressly requires use of 1272 Orders to address CSOs. The benefits of using the 1272 Orders are the long-term applicability and the ability to edit the order to include timelines that are legally enforceable.

Municipalities throughout the state have been addressing CSOs and the most straightforward to abate have been removed. Therefore, those remaining are the most costly and complex. A five-year timeline is not appropriate given the engineering required to address these along with the other needs in the municipality. However, given Vermont is dedicating at least $25 million dollars of American Rescue Plan Act funds to CSO abatement and additional Federal infrastructure funds will become available, the Secretary anticipates major advances in CSO removal in the next several years.

The inability of those other than the respondent to appeal or provide comment is appropriate as the initial 1272 Order implements the CSO Rule requirement and is further revised to include engineered solutions proposed by municipalities to abate the unauthorized discharge in their Long-Term Control Plans. The public is not consulted on the design when a municipality must upgrade its treatment technology, because these designs are developed by credentialed professionals. The proposal of abatement strategies in a Long-Term Control Plan that are then incorporated in an order pursuant to 10 V.S.A. § 1272 is no different. However, the public often has the ability to weigh in on a project during a public meeting held by the municipality, particularly if a bond vote is required.

COMMENT #3

Permit Special Conditions, Section A, Paragraph 3 b) – This condition is drawn from Rule and states, "The discharge shall not result in toxic substances or chemical constituents in concentrations or combinations in the receiving water that injure or are inimical to plants, animals, humans or aquatic life; **or persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish or other aquatic life, or wildlife that might consume aquatic life**" (emphasis added). Placing such a condition provides a false comfort that the Plant can operate to such a standard of protection of the environment and human health with regard to toxic chemical substances emitted by the Plant. In reality, VANR knows full well that the Rutland WWTF on a regular basis releases untreated sewage to the Otter Creek and its tributaries which contains concentrations of toxic, bio-cumulative chemicals and metals to the water environment such that these chemicals wind up in the tissues of biota in ultimately harmful concentrations. These include PFAS, heavy metals (Pb, Hg, Cr, etc.) and pharmaceuticals. Even where functioning appropriately as allowed under its 2002 and draft Permit conditions, without mishap or stormwater event, these bio-cumulative toxins are released into the water environs of the Otter Creek drainage.

VANR needs to not be including conditions that are misleading or otherwise provide a false comfort to the naïve reader of the draft or final Permit that this Plant is so stringently designed and operated as to protect the public and the environment from such transgressions. This condition rings hollow and in point of fact could be argued as unenforceable as VANR issued this Permit knowing that this condition cannot be met by the current or planned future plant design and operation that this draft Permit would allow. VANR needs to ratchet up Permit conditions to first recognize this and other WWTF shortcomings in its NPDES permit findings and condition the permits to require best available technology to be implemented within timeframes that are within, and do not exceed the 5 year Permit.

RESPONSE #3

The Agency removed Draft Permit Condition I.A.3.b), as the Permit and Reasonable Potential Determination (RPD) include other provisions that apply the associated aspects of the 2017 Vermont Water Quality Standards (VWQS), including standards and criteria for toxic substances and protection of human health, aquatic biota, and wildlife. See VWQS § 29A-303(7) and Appendix C; Permit toxic effluent limitations, Condition I.A.3.g (discharge shall not cause violation of VWQS), II.A.7. (toxic effluent standards), and II.A.8. (discharge of other substances identified in application and not known to Applicant to be toxic), as well as Condition I.J for Whole Effluent Toxicity (WET) testing which refers to the aggregate toxic effect to aquatic organisms from all pollutants contained in a facility's effluent.

Note the VWQS define toxic substances as:

> "Toxic substances" means those wastes and combinations of wastes that, after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of available information cause death, disease,

behavioral abnormalities, cancer, genetic mutations, physiological or reproductive malfunctions, or physical deformations in such organisms or their offspring. VWQS § 29A-102(47).

COMMENT #4

The Otter Creek and its tributaries downstream of the Plant and its CSOs are classified as Class B waters of the state. Class B waters provide for contact recreation uses which are imperiled each and every time the Plant or its CSOs direct discharge without treatment or without adequate treatment. The Otter Creek main stem at and below the plant as well as stretches of East Creek and Moon Brook are listed on Vermont's 303(d) list of impaired waters due to E.coli and nutrient contamination resulting from untreated Plant and its CSO discharges. Such REGULAR failures of the Plant and its infrastructure to meet standards places at risk not only in-stream biota and wildlife that utilize the Otter Creek and its tribs, but also the user public that trusts that these waters are safe to utilize for swimming and other contact recreation such as canoeing, kayaking and fishing. I have witnessed firsthand what can happen to someone who inadvertently swims in such contaminated waters that were classified as swimmable when my college housemate contracted hepatitis B from ingesting river water contaminated with untreated WWTF effluent. Only comprehensive and fully adequate upgrades to the Plant and its sewer line / stormwater infrastructure that recognize real world conditions today will address an eliminate the causes of these stream impairments, as VANR is required to implement under the Clean Water Act.

RESPONSE #4

It is important to differentiate between the WWTF effluent and the CSO discharges. The assertion that the WWTF fails to achieve complete treatment and disinfection of effluent is false, as addressed in Response #1 above. CSO discharges are acknowledged to be exceedances of the VWQS and are under an order pursuant to 10 V.S.A. § 1272 to abate such discharges.

Orders issued pursuant to 10 V.S.A. § 1272 that address compliance with the CSO Rule require the development of Long-Term Control Plans (LTCP) that continue to bring discharges into compliance with VWQS. These LTCPs provide the detail needed to provide funding to municipalities to implement the designed projects, expediting the application for funding that may become available (e.g., ARPA or other sources of infrastructure funding). In addition, the 1272 orders require municipalities to implement the "Nine Minimum Controls" that are designed to maximize pollutant capture and minimize impacts to water quality:

1. Proper operation and regular maintenance programs for the sewer system and CSO outfalls

2. Maximum use of the collection system for storage

3. Review and modification of pretreatment requirements to ensure that CSO impacts are minimized

4. Maximization of flow to the POTW for treatment

5. Elimination of CSOs during dry weather

6. Control of solid and floatable materials in CSOs

7. Pollution prevention programs to reduce containments in CSOs

8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts

9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

Regarding the anecdotal information about contracting Hepatitis B, the Centers for Disease Control and Prevention and VT Department of Health state, "Hepatitis B is spread when blood, semen, or other body fluid infected with the hepatitis B virus enters the body of someone who is not infected . . . Hepatitis B is [also] not spread by contaminated food or water." (CDC Hepatitis B General Fact Sheet; Hepatitis B | Vermont Department of Health (healthvermont.gov))

COMMENT #5

These comments should be seen as applying not only to the Rutland WWTF draft Permit as discussed above, but at minimum, to all other WWTF permits currently on notice for public comment that discharge to the Otter Creek and its tributaries. The impacts of the discharges as discussed above are cumulative as they migrate downstream ultimately to Lake Champlain. Many of the waters are already impaired due to the operations of these WWTFs as well as other contributing factors. VANR needs to arrive at an overall policy and strategy for the state with regard to WWTFs and CSOs to eliminate overflows as a part of plant operation as well as address the inputs that WWTFs are incapable of treating. With regard to the WWTFs within the Otter Creek watershed, a permitting and plant infrastructure upgrade strategy should be developed and implemented within this next round of permits that will fully address the issues we have discussed.

RESPONSE #5

The majority of these comments focus on the Combined Sewer Overflows and the facilities with permits concurrently on notice do not have collection systems with CSO outfalls. CSOs are not a function of plant operation but a feature of collection system design and require redesign of the collection system to accommodate their abatement. The State is implementing an "overall policy and strategy to address CSOs" through the 2016 CSO Rule. The inputs WWTFs are incapable of treating is a matter of stormwater management which is being addressed in Long-Term Control Plans as well as through compliance with Stormwater General Permit 3-9050 ("3-acre" stormwater permit) and other regulatory stormwater requirements.

COMMENT #6

Backsliding on CSO #5

The addition of CSO 5 to the discharges permitted under the draft 2021 permit is a case of backsliding.

The 2003 permit (in its attachment A) shows three CSO outfalls. Special Condition H, Combined Sewer Overflows, of the permit states that discharges from these outfalls are authorized during storm events only.

- CSO S/N 001 discharging into the Otter Creek at Calvery Cemetery
- CSO S/N 002 discharging into the East Creek at a location called home plate
- CSO S/N 009 discharging into the East Creek at a location called third base.

The 2018 1272 order states that the (2003) permit has been administratively extended. That means that CSO 5 is not an authorized CSO discharge point.

The draft 2021 permit (in its table of permitted discharges) shows four CSO outfalls.

- CSO 1 discharging into the Otter Creek, Calvery Cemetery
- CSO 2 discharging into the East Creek, home plate
- CSO 5 discharging into the East Creek, West Street
- CSO 9 discharging into the East Creek, third base

The revised draft 2021 fact sheet points out (III.B.) that the Clean Water Act has an anti-backsliding provision. That provision is at 40 C.F.R. § 122.44(1). [NOTE: that is a lower-case letter ell; it is not a digit one.] The relevant parts of that provision are in bold in the following quote of the section.

"(1) **Reissued permits.** (1) Except as provided in paragraph (1)(2) of this section **when a permit is renewed or reissued,** interim effluent limitations, standards or **conditions must be at least as stringent as the** final effluent limitations, standards, or **conditions in the previous permit** (unless circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under § 122.62.)"

"(2) In the case of limitations..." I have omitted the rest of this subsection (2) because it applies only to effluent limitations.

My argument is that adding CSO 5 into the 2021 permit will be a less stringent condition than is in the 2003 permit. As a less stringent condition, CSO 5 may not be added to the list of discharge locations.

Rutland reported 459 "Authorized Wet Weather CSO Discharges" in the period August 17, 2014 through July 16, 2021. The search of the anrweb was of the period January 1, 2007 through July 16, 2021. Apparently the database does not contain records of CSO discharges before sometime in 2014. Of those discharges, 113 were attributed to CSO 5. Those 113 discharges were actually unauthorized discharges according to the terms of the 2003 permit.

I acknowledge that the 1272 orders of 2012 and 2018 include CSO #5 as allowed overflow locations. I am unaware of any earlier 1272 order. However, those orders are in conflict with the 2003 (still current, administratively extended) NPDES permit.

The 2012 order required Rutland to submit a projected schedule for the design and completion of a CSO elimination project that includes CSO S/N 005. 'That schedule was due by December 31, 2013. That order allowed the Agency to incorporated the schedule into an amended order. According to the 2018 1272 order, that schedule had not been provided.

The 2018 order states that it supersedes the 2012 order. The 2018 order lists many actions taken by the City regarding its CSO's. None of the those actions after the 2012 1272 order was issued includes CSO 5.

requests for amendments

Remove CSO 5 from the table of permitted discharge points in the permit.

Amend the 1272 so that CSO 5 is eliminated. If that is not done, then any amended 1272 order needs a public hearing.

RESPONSE #6

Anti-backsliding is meant to prohibit the relaxation of *effluent* limitations, conditions, and standards. See Federal Water Pollution Control Act § 402(o), 33 U.S.C.A. 1342(o) (Clean Water Act provision prohibiting backsliding in "the case of effluent limitations," with limited exceptions); 40 C.F.R. § 122.44(l) (anti-backsliding regulations applying to "effluent limitations, conditions, and standards," with limited exceptions); EPA 2010 Permit Writers' Manual § 7.2.1, at 7-2, available at National Pollutant Discharge Elimination System (NPDES) Permit Writers' Manual: Chapter 7 (epa.gov) (describing how anti-backsliding applies to *effluent* parameters).

The anti-backsliding provision is not appropriately applied to the situation of a CSO outfall that was inadvertently not referenced in a prior permit and that has not yet been eliminated. CSO S/N 005 was included in permits prior to 2002, but the CSO Control Plan Phase 2A Basis of Final Design report approved in June of 2002 inexplicably did not include this outfall. The 2002 permit was prepared using this report, and since then this error has been identified and is being corrected with this renewed permit. Including the discharge here appropriately allows for regulatory oversight of all discharges in a consistent manner and facilitates the necessary funding to address the stormwater management issues that drive the CSO overflows.

The Wastewater Management Program is posting all orders pursuant to 10 V.S.A. 1272 issued after January 1, 2021 on the following website:
https://anrweb.vt.gov/DEC/IWIS/ReportViewer2.aspx?Report=WWActiveNPDESPermits&ViewParms=False

COMMENT #7

Backsliding on upsets.
The addition of an exemption for upsets is a second instance of backsliding.

The 2003 permit contains no condition that exempts discharge violations due to upsets. Allowing a condition exempting certain upsets in the draft 2021 permit is less stringent than the 2003 permit.

request for amendment
Remove the entire condition II.B.6. upsets from the permit.

RESPONSE #7

Condition II.B.6. properly and expressly addresses the upset topic in alignment with 40 C.F.R. § 122.41 (conditions applicable to all permits, applicable to State programs via § 123.25(a)(12)). Rather than backsliding or relaxing an effluent permit condition, the language of Condition II.B.6. (aligning with § 122.41(n)) specifically requires and encourages proper recordkeeping, facility operation, and notice, and expressly places the burden of proof on the Permittee in establishing the conditions allowing for an affirmative defense. Comparing the language side by side with the Code of Federal Regulations does show that the definition of "upset" was missing from the Permit and therefore the definition provided at § 122.41(n)(1) has been added to the Permit "Definitions" section for this Permit and future NPDES direct discharge permits.

See also overview of anti-backsliding in Response #6.

COMMENT #8

Investigating the River Street Pump Station
The City of Rutland reported 27 un-authorized discharges from January 1, 2007 through July 16, 2021. Eight of them (from 2017 until now) were at, or caused by, the River Street Pump Station.

Three of these unauthorized discharges are due to breaks in the force mains at the River Street Pump Station. Two were in 2019 and the third this year. The other five were caused by two equipment failures at the pump station leading to backups and discharges from combined sewer overflows upstream of the pump station.

request for amendment
It seems that there is a recurring problem with these force mains, shown by the three breaks. The permit should be modified to require the engineering report to provide a specific analysis and plan for replacing these force mains. Or better yet, start working on such a report now, because the report required by the permit will not be due until 2023. Because of the most recent break, it appears that any previous action that might have taken place was insufficient.

RESPONSE #8

The City of Rutland operated two force mains that conveyed combined sewage from the River Street Pump Station to the Wastewater Treatment Facility: a 1972, 20" diameter pipe and a 1992, 20" diameter pipe. In July 2018 the City repaired a break in the 1972 pipe, which led to an evaluation of the pipe's integrity. The evaluation determined that the pipe needed to be replaced. Weston & Sampson Engineers, Inc. was retained to design the project. Initial investigations included communications with the Agency's Rivers Program and were overseen by the Agency's Hazardous Waste Management Program since the existing force main ran through Green Mountain Power land that is contaminated with polychlorinated biphenyls (PCBs). Soil testing was performed to determine the ultimate location of the new force main. The Belden Company, Inc. was awarded the contract to replace the 1972 force main with a new 24" HDPE pipe using a directional drill method. Construction began in March 2020. The pilot bore met refusal in June 2020 and was unable to proceed any further. The subcontractor recommended ceasing any further attempts to horizontally drill. The project was redesigned utilizing an open cut method. Construction restarted in April 2021 with installation of the replacement force main pipe completed in late June 2021 and in operation shortly thereafter.

Comments submitted by the City of Rutland and included in the permit record provide additional detail on the work completed.

COMMENT #9

Conditions in the 2003 permit that have been omitted from the draft 2021 permit

The revised fact sheet states that the composite sample of influent BOD_5 shall include the hours of 6:00 a. m. to 6:00 p. m. The 2003 permit has this condition. Despite what the fact sheet states, the draft 2021 permit lacks this condition. Add this condition to the permit.

The revised 2021 draft fact sheet states that the composite sample of influent Total Suspended Solids shall include the hours of 6:00 a. m. to 6:00 p. m. Despite what the fact sheet states, the draft 2021 permit lacks this condition. The 2003 permit has this condition. Add this condition to the permit.

request for amendment
The 2003 permit is explicit that combined sewer overflows are allowed only during storm events.

The 2003 permit prohibits septage, leachate, holding tank waste, or other high strength waste from being in the overflow. The draft 2021 permit lacks these conditions. Add these conditions to the 2021 permit.

RESPONSE #9

The fact sheet for the draft permit erroneously contained the statement that influent BOD and TSS would be an 8-hour composite that includes the hours 6:00 am and 6:00 pm. This statement is clearly in conflict with the requirement for a 24-hour composite and will be removed from the

fact sheet. With a 24-hour composite there is no reason to include any qualifications on when during the day a sample should be collected. No such conditions will be added, and the erroneous statements will be removed.

The 2003 permit was issued under the 1990 Combined Sewer Overflow Control Policy, but does not appear to have adequately conveyed that dry weather flows resulting from snowmelt were authorized under that policy. The 2016 Combined Sewer Overflow Rule allows for overflows during dry weather if they result from snowmelt and do not cause or contribute to a violation of Vermont Water Quality Standards. No new condition that is more restrictive than the 2016 CSO Rule will be added to the permit.

The following statement prohibiting the presence of septage, leachate, holding tank waste or high strength wastes from major contributing industries will be added to the permit:

> *Discharges to the combined system of septage, holding tank wastes or other material which may cause a visible oil sheen or containing floatable materials are prohibited during wet weather when CSO discharges may be active.*

High strength wastes such as spoiled milk or homebrewing wastes may be present in the collection system from small sources including domiciles. It is neither feasible nor necessary to eliminate these small sources of waste. Large sources of high strength waste are major contributing industries and are subject to pretreatment permits issued by the Agency which impose conditions in order to mitigate the contribution of these wastes to the collection system and WWTF. Those conditions may include the diversion of high strength wastes to a composting facility or require treatment.

COMMENT #10

Pretreatment permits
The revised 2021 draft fact sheet has a table listing five pretreatment permittees. The table lacks permit numbers and when they expire.

request for amendment
Add the dates of expiration of the pretreatment permits in the fact sheet. Add the permit numbers of the pretreatment permits. Indicate how one can obtain copies of the pretreatment permits.

RESPONSE #10

The suggested additions of pretreatment permit information were made to the fact sheet for the draft permit as well as the Wastewater Management Program's fact sheet template, so that this information will be a standard topic for fact sheets moving forward. Two expired permits were removed from the fact sheet since they no longer discharge to the facility.

Permit information can be found here:

https://anrweb.vt.gov/DEC/IWIS/ReportViewer2.aspx?Report=WastewaterTreatmentFacilityList&ViewParms=False

COMMENT #11

Incompatible Substances

The draft 2021 permit places looser conditions on incompatible substances than do the statute and the rules implementing the statute. The definitions in the permit and rule are essentially identical, with differences mostly due to the context. The statutes do not define incompatible substances.

It is the application of the definition that has a significant difference. The rules and the statutes prohibit incompatible substances from all sources. The permit will only prohibit incompatible substances from major contributing industries.

Definitions of incompatible substances

The draft 2021 permit defines **"Incompatible Substance-** means 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 the works or on water quality. This includes all pollutants required to be regulated under the Clean Water Act." (The 2003 permit defines the term as **"Incompatible Substance (Pollutant)"** with the same text.

The draft 2021 permit requires Rutland to have a sewer ordinance that shall "(a) prohibit the introduction by any person into the Permittee's sewerage system or WWTF of any pollutant which:
(v) In the case of a major contributing industry, as defined in this permit, contains an incompatible pollutant, as defined in this permit, 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." (The 2006 permit has the same requirement for the sewer ordinance.)

The permit does not define "incompatible pollutant". The permit defines "incompatible substance".

The rules on incompatible substances

Rule 13.1 (i) "The term "incompatible substance" means any waste being discharged into a publicly owned treatment works which interferes with, passes through without treatment, or is other wise incompatible with such works or would have a substantial adverse effect on such works or on water quality."

Rule 13.2 b. "Any person who wishes to discharge any waste, substance or material into any waters of the state or who wishes to discharge any incompatible substance into any publicly owned treatment works shall file a complete application on the earlier of..."

The statutes on incompatible substances

The statutes in 10 V.S.A chapter 47 do not define an incompatible substance. The word "incompatible" appears twice in the chapter.

"§ 1259. Prohibitions (a) 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 that 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. This subsection shall not prohibit the proper application of fertilizer to fields and crops, nor reduce or affect the authority or policy declared in Joint House Resolution 7 of the 1971 Session of the General Assembly."

"§ 1263. Discharge permits (a) Any person who intends to discharge waste into the waters of the State or who intends to discharge into an injection well or who intends to discharge into any publicly owned treatment works any waste that interferes with, passes through without treatment, or is otherwise incompatible with that works or would have a substantial adverse effect on that works or on water quality shall make application to the Secretary for a discharge permit. Application shall be made on a form prescribed by the Secretary. An applicant shall pay an application fee in accordance with 3 V.S.A. § 2822."

Incompatible substances likely include the PFAS chemicals, antibiotic residuals, and similar substances that are either not removed or not intended to be removed by the treatment processes. Having a requirement in the permit to monitor such substances will show the amount of their presence. That information could be used in the engineering evaluation if EPA or DEC has determined an effluent limit by then.

If it appears likely that there will be limits on some or all these substances, then the engineering evaluation should provide a section on how to modify the treatment process to remove those incompatible substances. Notice that the phrase is "how to modify", not "whether to modify". The decision on whether to modify is a different one.

<u>requests for amendments</u>
The prohibition on incompatible substances in the permit should be the same as in the rules and statute. That means, change the term in the condition on the sewer ordinance (II.B.7.(v)) to match the definition in the permit and the rules.
- the term in the condition in the ordinance then becomes "incompatible substance".
- remove the limitation to match the rules, which means striking the clause "In the case of a major contributing industry, as defined in this permit,".

Require monitoring of some of the incompatible substances, including the PFAS/PFOS family and pharmaceuticals.

Require that the engineering report evaluate what is needed in order to modify the treatment process to remove those incompatible substances, if it seems likely that EPA or DEC will place limits on those substances.

RESPONSE #11

To provide clarity on the issue of incompatible materials, the permit has been edited to refer only to incompatible substances. The definition for incompatible substances includes Clean Water Act pollutants. The phrasing within Condition II.B.7.(v), "In the case of a major contributing industry, as defined in this permit," is retained, in light of the numerous potential small sources, such as domiciles (e.g. laundering water-repellant clothing). In addition, the WWTF is required to provide notice to the Secretary of any substantial change in character or volume of pollutants introduced to the WWTF so the Secretary has an opportunity to determine if an incompatible substance must be regulated through a pretreatment permit. Condition II.D.2.

The Agency agrees that additional wastewater effluent monitoring for PFAS is a necessary part of a comprehensive PFAS management strategy, as indicated in its 2021 PFAS Road Map. The Agency believes that such a comprehensive, statewide approach is the most efficient way to collect appropriate data and is currently evaluating an Agency-implemented monitoring project that would include all currently permitted publicly owned treatment works.

COMMENT #12

I. DEC must conduct a more robust and specific assumptions analysis to justify the phosphorus WQBELs in these permits.

The Secretary must conduct a more robust and specific assumptions analysis to justify using the wasteload allocation ("WLA") from the Lake Champlain TMDL as the phosphorus WQBEL in these draft Permits. While the Agency may adopt a WQBEL in a NPDES permit that is identical to the WLA in the TMDL, DEC must engage in specific analysis to determine whether that WQBEL is "consistent with the assumptions and requirements of any available wasteload allocation."

As the Vermont Environmental Court has noted, under this "assumptions" aspect of 40 C.F.R. § 122.44(d)(1)(vii)(B), DEC "must engage in some degree of site-specific and time-specific analysis for each [NPDES permit] application to determine whether a suggested [WLA] provides a stringent enough" limitation on the relevant pollutant to be used as a WQBEL. *In re Montpelier WWTF Discharge Permit,* No. 138-10-17 Vtec, slip op. at 14 (Vt. Envtl. Ct. June 30, 2009). The Court went on to conclude that 40 C.F.R. § 122.44(d)(1)(vii)(B) directs that agencies not blindly accept such past assumptions, but rather analyze them at each permit issuance- or at least at each permit issuance that occurs more than five years after the issuance of the applicable TMDL- to determine whether those assumptions continue to have a basis of reliability. *Id.* at slip op. 16.

Here, the Environmental Protection Agency issued the TMDL on June 17, 2016. DEC posted these draft Permits for public comment just under five years after the TMDL issuance date; however, the final permits will not go into effect until after the five-year mark. In any event, sufficient time has elapsed, and the Lake is in such a state of crisis, that DEC must conduct more than just a minimal assumptions analysis. *See In re Multiple WWTF Permit Appeals*, 138-10-17

Vtec, 139-10-17 Vtec, 140-10-17 Vtec, 141-10-17 Vtec 145-10-17 Vtec, 146-10-17 Vtec, 4-1-18 Vtec, 5-1-18 Vtec, 17-2-18 Vtec, at slip op. 33 (Vt. Envtl Div Feb. 1, 2019) (signaling that "second guess[ing]" assumptions underlying the TMDL is appropriate when a TMDL is beyond its first year to eighteen months); *id.* (noting that more detailed assumptions analysis likely would have been "justified and helpful" even in first year of TMDL implementation "given serious environmental concerns facing Lake Champlain").

The WLAs in the Lake Champlain TMDL "assume that phosphorus reductions will occur over time." *In re Multiple WWTF Permit Appeals,* slip op. at 24. Specifically, the WLAs for WWTFs "assume future reductions from other sources will occur, and that if these reductions do not occur, then WWTFs can be forced to further decrease their own phosphorus discharges by reducing their WLAs." *Id.* Therefore, to properly analyze whether this underlying assumption (i.e., that reductions from other sources will occur) is still valid, DEC must examine reductions to date from other sectors in its assumptions analysis.

Instead, DEC's analysis in the fact sheets accompanying these draft Permits merely states that the Vermont Agency of Natural Resources has accomplished all Phase 1 Accountability Framework milestones and received affirmative reports from EPA thus far. *See, e.g.,* Fact Sheet for Rutland Permit at 13-14. But the Phase 1 milestones relate to standing up administrative programs, rules, funding, and permitting systems; they do not necessarily equate to reductions from other sources having occurred. A robust assumptions analysis- especially given that more than five years have passed since the issuance of the TMDL and the pressing water pollution problems in the Lake- must include a detailed review of phosphorus reductions that have in fact occurred from other sources beyond the permitted WWTFs to validate the underlying assumption of the WLA.

CLF and VNRC request DEC revise the analysis in these fact sheets to meet the standard established by the Environmental Court in *In re Montpelier*. Without this level of time-specific, site-specific analysis, the WQBELs contained in the permits do not satisfy the consistency requirement in 40 C.F.R. § 122.44(d)(1)(vii)(B).

RESPONSE #12

"The progress made toward reaching Lake Champlain's phosphorus reduction target has been steadily increasing year after year. State, federal, and regulatory clean water programs are estimated to have reduced 34.8 metric tons of phosphorus loading delivered to Lake Champlain in SFY 2021, which represents approximately **16 percent** of the required reduction. This result is expected to increase in the coming years . . . . Lake Champlain TMDL implementation began in 2016 and its Phase 1 Implementation Plan included a "ramping-up" phase of regulatory, financial, and technical assistance programs. New regulatory programs are now in place that will drive an increase in phosphorus reductions from agriculture and developed lands." ("Vermont Clean Water Initiative 2021 Performance Report" January 15, 2022 at 46, available at: https://dec.vermont.gov/sites/dec/files/wsm/erp/docs/Reports/2021CleanWaterInitiativePerformanceReport_FINAL_updated%201-20-2022.pdf)
https://dec.vermont.gov/sites/dec/files/wsm/erp/docs/Reports/2021CleanWaterInitiativePerforma

nceReport_FINAL_updated%201-20-2022.pdf) (also noting that Vermont is expanding its ability to quantify phosphorus reductions from all project types).

The 2016 Lake Champlain Phosphorus TMDL Phase 1 Implementation Plan is now at year 5 of a 20-year timeline to allow communities to plan and stage improvements to roads, stormwater, and wastewater infrastructure into long-term capital funding plans. This draft permit is included in the final set of permits to be issued under the Phase 1 plan. While the permits are slightly delayed from the intended issuance date, they still represent the first 5 years of permits and thus the continued first steps of implementation of the Phase 1 TMDL with regard to WWTF permitting. This facility currently has a monthly average limit of 45.4 pounds which would equal a maximum annual load of approximately 16,571 pounds per year. The 2016 Lake Champlain Phosphorus TMDL reduces the facility's Annual Waste Load Allocation to 5.634 mt/year or 12,420 lbs./year. Moreover, the draft permit includes the requirement that the facility be optimized for TP removal to ensure facilities meet the requirement to remain below 80% of the assigned TP WLA or upgrade the WWTF to assure that goal can be reached.

Wastewater discharges contribute 4% of the TP loading to Lake Champlain with much larger contributions from stormwater runoff from developed (18% of TP base load) and agricultural lands (41% of TP base load). To address the developed lands sector, among other milestones, the Stormwater General Permit 3-9050 ("3-acre permit") is currently in effect and applications for coverage are being processed. The EPA acknowledged Vermont has successfully completed all Phase 1 Accountability Framework milestones in its September 3, 2020 Lake Champlain TMDL Implementation Final Report Card for Phase 1 Milestones (Available at: https://www.epa.gov/sites/production/files/2020-09/documents/lake-champlain-report-card-ltr-09-3-20.pdf). See *In re Multiple WWTF Permit Appeals*, Docket Nos. 138-10-17 Vtec, 139-10-17 Vtec, 140-10-17 Vtec, 141-10-17 Vtec 145-10-17 Vtec, 146-10-17 Vtec, 4-1-18 Vtec, 5-1-18 Vtec, and 17-2-18 Vtec, slip op. at 32 (Vt. Super. Ct. Envtl Div. Feb. 1, 2019) (Durkin, J.) ("ANR could have looked to [the report card on implementation milestones]—all of which were completed—to confirm that TMDL implementation was proceeding as planned, and that the assumptions underlying the TMDL therefore held true").

Prior to drafting the permit, a full assessment of Reasonable Potential was conducted to satisfy 40 C.F.R. § 122.44(d)(1)(vii)(B) ("Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7"). This analysis included determining if TP limits were needed to assure VWQS were met in the Otter Creek. The narrative criteria for TP are

satisfied and therefore this facility does not have reasonable potential to violate VWQS. The analysis of effects on Lake Champlain was completed under the TMDL establishment process and, as the issuance of this permit is part of the Phase 1 Implementation Plan, further analysis of the WLA prior to implementation would still be "extensive or duplicative of the analysis that was completed" during that process. The analysis of effects on Lake Champlain was completed under the TMDL establishment process and, as the issuance of this permit is part of the Phase 1 Implementation Plan, further analysis of the WLA prior to implementation would still be "extensive or duplicative of the analysis that was completed" during that process. *In re Multiple WWTF Permit Appeals*, Docket Nos. 138-10-17 Vtec, 139-10-17 Vtec, 140-10-17 Vtec, 141-10-17 Vtec 145-10-17 Vtec, 146-10-17 Vtec, 4-1-18 Vtec, 5-1-18 Vtec, and 17-2-18 Vtec, slip op. at 32 (Vt. Super. Ct. Envtl Div. Feb. 1, 2019) (Durkin, J.) (putting parameters on scope of analysis for permits issued 15 to 19 months after TMDL issuance).

COMMENT #13

II. PFAS monitoring should be required in all WWTF permits in Vermont.

Given the public health and environmental dangers posed by PFAS, and the fact that these harmful chemicals are ubiquitous in the waste stream, DEC should require all WWTF permittees to monitor for PFAS and monitor their industrial users' discharges for PFAS.

PFAS chemicals are a threat to human health and the environment because they are (1) toxic in small concentrations; (2) persistent in the environment; (3) bioaccumulative; (4) highly mobile in water; (5) used in hundreds of different industrial and commercial processes and found in a wide variety of consumer products; and (6) a dangerous chemical class comprised of over 8,000 chemicals.

PFAS compounds are used in hundreds of commercial and manufacturing processes and found in thousands of consumer products. They have been used in non-stick cookware, water repellent clothing, stain resistant fabrics and carpets, cosmetics, firefighting foams, and other products that resist grease, water, and oil.[8] PFAS are toxic to humans in concentrations as small as single digit parts per trillion, or potentially even lower.[9] These chemicals are associated with cancer and have been linked to growth, learning, and behavioral problems in infants and children; fertility and pregnancy problems, including pre-eclampsia; interference with natural human hormones; increased cholesterol; immune system problems; and, interference with liver, thyroid, and pancreatic function.[10] PFAS has been linked to increases in testicular and kidney cancer in human adults. [11] Developing fetuses and newborn babies are particularly sensitive to PFAS chemicals. [12]

Because of their pervasive use in consumer products, PFAS are routinely found in the waste stream. Sampling conducted in late 2019 and early 2020 by the Agency of Natural Resources and industry consultants detected PFAS in every influent and effluent sample collected from nearly two dozen WWTFs in Vermont. [13] PFAS were also detected in all of the sampled WWTFs' sludge specimens. [14] These data align with a recent study by the University of New Hampshire,

which found that WWTFs do not effectively remove any of the thousands of known PFAS chemicals from wastewater and emphasized that "[s]horter-chain PFAS were abundant in wastewater effluent, while precursor and longer-chain PFAS dominated in sludge."[15]

Because of the dangers of PFAS chemicals to human and aquatic health and the ways that WWTFs concentrate PFAS chemicals in their effluent, it is critical for WWTFs to monitor for PFAS and identify potential sources by monitoring the discharges of its industrial users. Massachusetts has recently taken an important step in this direction with its draft WWTF General Permit.[16] In the fact sheet supplementing the draft permit, the Massachusetts Department of Environmental Protection stated:

> *Given that PFAS are persistent in the environment and may lead to adverse human health and environmental effects, MassDEP has identified a comprehensive approach for addressing PFAS in wastewater discharges... MassDEP is...concerned about the potential impacts PFAS discharges from wastewater treatment plants may have on downstream drinking water, recreational, and aquatic life uses...To assess whether PFAS discharges from any Facility seeking Permit Authorization under the SWD WWTF GP are occurring and whether they may be contributing to a violation of the narrative toxics criteria, MassDEP is including conditions in the SWD WWTF GP for the permittee to monitor for PFAS and to monitor its Significant Industrial Users' discharges for PFAS.*[17]

Similarly here, Vermont DEC should include conditions in all its WWTF NPDES permits requiring the permittee to monitor for at least the five PFAS regulated by the Secretary of the Agency of Natural Resources[18] and the maximum number of PFAS detectable from standard and modified Environmental Protection Agency laboratory methods. The permittee should also be required to monitor discharges from any industrial users of the facility to identify sources of PFAS. Monitoring should occur frequently (ideally weekly), given the daily fluctuations of the WWTF effluent.

We request DEC revise the four draft Permits up for review to include these PFAS monitoring conditions.

RESPONSE #13

The Agency agrees that additional wastewater effluent monitoring for PFAS is a necessary part of a comprehensive PFAS management strategy, as indicated in its 2021 PFAS Road Map. The Agency believes that such a comprehensive, statewide approach is the most efficient way to collect appropriate data and is currently evaluating an Agency-implemented monitoring project that would include all currently permitted publicly owned treatment works.

COMMENT #14

III. Climate change is exacerbating CSO issues and DEC has not adequately addressed the impacts of CSOs in the NPDES permit for the Rutland Facility under the VWQS.

Vermont is experiencing dramatic increases in precipitation and significant weather events. These climate-driven changes are leading to greater runoff into our rivers and lakes and to higher incidents of CSOs in WWTFs that have not adequately addressed the CSO problem.

There is no question that CSOs are occurring and will continue to occur at the Rutland facility after the NPDES renewal permit is issued. There is no question about this because the Rutland facility has four CSO outfalls and, by our estimate, at least 60 CSOs have emanated from these outfalls at the Rutland facility in 2021. These CSOs discharge untreated and partially treated waste from these outfalls that violate terms of the NPDES permit for the facility.

Under Vermont law, it is illegal to discharge any substance into waters of the State without a permit. Specifically, 10 V.S.A § 1259 (a) provides:

(a) 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 that 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.

Because DEC knows the Rutland facility will discharge untreated and partially treated waste, these issues must be addressed as part of the NPDES permit for the facility.

Vermont law governing discharge permits requires that such a permit ensure that the discharge will not violate any provision of State or federal law. Specifically, 10 V.S.A § 1263 (c) provides:

c) if the Secretary determines that the proposed discharge will not reduce the quality of the receiving waters below the classification established for them and will not violate any applicable provisions of State or federal laws or regulations, he or she shall issue a permit containing terms and conditions as may be necessary to carry out the purposes of this chapter and of applicable federal law. Those terms and conditions may include providing for specific effluent limitations and levels of treatment technology; monitoring, recording, reporting standards; entry and inspection authority for State and federal officials; reporting of new pollutants and substantial changes in volume or character of discharges to waste treatment systems or waters of the State; pretreatment standards before discharge to waste treatment facilities or waters of the State; and toxic effluent standards or prohibitions.

DEC has not proven how the draft NPDES permit for the Rutland facility will ensure that CSO discharges from that facility will not reduce the quality of the receiving water in a manner that will lower the classification of the Otter Creek or violate the VWQS, as required by 10 V.S.A. §

1263 (c). For example, the partially and untreated waste discharged during CSO events can lead to water quality conditions that make it dangerous to human health to swim in the waters. Swimming is a designated use in the Otter Creek. Accordingly, the waste discharged during CSO events may interfere with this use based on the classification of the Otter Creek.

Moreover, the draft NPDES permit for the Rutland facility does not contain conditions that will ensure that discharges of waste during CSO events will not violate the VWQS. With regard to CSOs, the draft NPDES permit requires that the permittee submit an annual report that documents the permittee's compliance with the minimum controls set forth in the CSO rule. There are no specific provisions in the draft NPDES permit that address the impacts of the discharge of wastes from CSO events on the water quality in the Otter Creek and the use of the Otter Creek by Vermonters.

CLF and VNRC understand that as with other CSOs in Vermont, DEC has issued an order under 10 V.S.A. § 1272 to address and reduce the impacts of CSOs from the Rutland facility. The first 1272 order issued to address CSOs from the Rutland facility was in 2012. It was revised in 2018. Both orders required that the permittee implement projects that will reduce, but not eliminate, CSOs, comply with the CSO rule and implement monitoring related to CSO discharges.

While these measures will reduce the impact of CSOs on Otter Creek, they do not ensure that the discharges will not violate the VWQS as required by 10 V.S.A. § 1263 (c). Moreover, orders issued under 10 V.S.A. § 1272, generally, are intended to address activities that were not expected to cause a discharge that will violate the VWQS, where ANR needed to intervene to remediate the harm to water quality that the activity caused. As noted herein, CSOs are not unanticipated events where DEC needs a legal mechanism to address harm to water quality caused after the fact. Rather, DEC knows that CSOs will occur at the Rutland facility from discharges that are covered under this draft NPDES permit that is currently under review.

Yet, an order issued under 10 V.S.A. § 1272 is the improper legal mechanism to address discharges from a facility that is undergoing a DEC permit review. Rather, DEC must address the CSO discharges that it knows will occur as part of the NPDES permit for the facility, and in doing so address how the NPDES permit will ensure that the CSO discharges from the Rutland facility that we know will occur will not violate the VWQS.

CLF and VNRC understand that significant changes to the Rutland facility will be required to eliminate CSOs. However, the long-term plan to do so has been under development since at least 2012, when the first 1272 order for the facility was issued, and progress on completing these improvements to the facility cannot be allowed to be delayed in perpetuity. To this end, we request that in responding to these comments DEC outline when it anticipates the CSO discharges will be eliminated or substantially eliminated at the Rutland facility and how American Rescue Plan Act (ARPA) funds and other federal funds that may come to Vermont as part of a federal infrastructure bill will be used to address the CSO discharges from the Rutland facility.

RESPONSE #14

See responses #1, #2, and #4.CSOs must be reported and publicly noticed so that recreation in the receiving water is avoided during such an event: https://dec.vermont.gov/watershed/wastewater/discharge-notifications. However, such an event on its own would not lower Otter Creek's classification (B(2)).

The City may apply for ARPA funding in order to address its CSOs, and any other federal infrastructure funds that may be available to support CSO abatement.

CSOs do not occur at the wastewater treatment facility; they occur in the combined sewer collection system. The upgrade expected at the Rutland City WWTF to increase storm capacity is expected to be a relatively minor project that will divert storm flows in excess of the secondary treatment capacity of 22.5 MGD to a new chlorine contact tank after receiving primary treatment. 22.5 MGD of secondary treatment capacity and 28 MGD of primary treatment capacity already exists at the WWTF. Until the River Street pump station's capacity is increased above 22.5 MGD, any delay in constructing this project at the facility has no impact on CSO overflows.

COMMENT #15

My name is William Burke and I have resided in Rutland city for 27 years. During that 27 years I served as the local Act 250 District Coordinator- retiring in July 2020. I comment today as a concerned private citizen of Rutland and of the state of Vermont.

I am here to publicly endorse the public comments provided to you by John Brabant of Vermonters for a clean environment and dated July 21, 2020. Since you have apparently accepted that comment, I am assuming that the drafting error on the submission date of "2020" was considered and that the VCE's comments have been accepted as timely.

I am also here to endorse the comments provided in writing to you and dated July 21, 2021 by Mr. Thomas Weiss.

These are comments numbered two and three on your website.

For this public hearing.

I request that you provide a formal written response to both comments.

In 1980 I was a Coast Guard officer and remembered flying over Deer Island outside of Boston harbor and looking down from the helicopter and seeing a dark brown plume measuring at least 300 yards in diameter arising from below the surface of Boston Harbor. That was Boston's version of Rutland's combined sewer overflow. It didn't work in Boston in 1980 any better than it is working in Rutland in the year 2021. It took over $1 billion and a decade of hard work but Boston looked the problem in the face and did The right thing. These years of ARPA funding represent our opportunity to start the difficult and expensive process of upgrading our own antiquated waste water treatment facilities. We owe it to all those upstream Otter Creek residents, not to mention the fish and wildlife who inhabit these waters.

With the infusion of ARPA money into the city of Rutland, I urge the Agency of Natural Resources and the City of Rutland to team up together and to do the hard work necessary to upgrade Rutland's antiquated system. We owe this to our children and future generations of Rutlanders, and to the citizens of the great state of Vermont.

RESPONSE #15

This comment is included here for the permit record and the support of other comments is noted.

COMMENT #16

I'm Zack Porter, I'm the Lake Champlain Lake Keeper at the Conservation Law Foundation and I appreciate the chance to comment on these permits. Like the commenters before me I'm going to be commenting generally about the permits and not about any one in particular and I will be submitting written comments as well, much more detailed than what I will share with you tonight. I wanted to both echo some of the comments that have been made already and then I'll add some new information as well. To start with something that I don't think has been highlighted already that as Lake Keeper is of particular importance to me is the opportunity that this permit gives us to reassess the allocation of phosphorus waste loads to various sources and where we need to be looking for reductions from right now. As you all at DEC know well, the 2016 Lake Champlain TMDL puts a very heavy emphasis on phosphorus reduction from non-point sources, that is the overwhelming source of desired reductions indicated in the in the 2016 TMDL. In the case of these wastewater treatment facilities there are in fact, and I think many Vermonters would find this somewhat astounding, no reductions required in phosphorus outputs according to the TMDL. I'm sure you're all also aware despite very hard work by the State and much progress being made, and getting things like the 3 acre stormwater permit accomplished and other accomplishments recently, we are still lagging way behind on non-point source reductions and we are a good ways into this 20 year Lake Champlain Restoration Plan and I'm concerned that we aren't going to get there in time. My understanding is that there is a requirement whenever a permit like this is being issued that we analyze the assumptions that have gone into those phosphorus allocations and so with this permit, my hope and my request to DEC is that we look really carefully at where we might get some phosphorus reductions in the short term. We know that these non-point source reductions will take a long time to materialize, they require a lot of voluntary participation, and with these wastewater treatment facilities, we have a chance to make a major impact and do so in a way that we can't do with private landowners in the same way or from non-point sources in the same way. As we're looking at this 20 year Restoration Plan it only seems logical to me to ask a little bit more of our wastewater treatment facilities that we have quite a bit of control over compared to those non-point source locations where we might have a much more delayed timeline for those phosphorus reductions. In addition to echoing the comments that were made previously related to both PFAS chemicals and the reliance on the 1272 Orders to deal with changes in extreme weather, which we now know are part and parcel of climate change. The real need right now is to look at these opportunities with these NPDES permits for these wastewater treatment facilities and to take a

chance to reduce phosphorus allocations from wastewater treatment facilities and not just rely on the non-point source reductions as we have been.

RESPONSE # 16

Vermont WWTFs represent approximately 4% of the annual total phosphorus load as described in the 2016 Lake Champlain Total Phosphorus TMDL. Eliminating them completely would have only a minimal impact on the Lake. The draft permit requires that the facility optimize its performance to remain below 80% of the WLA assigned in the TMDL. If that cannot be achieved after the preparation of the Phosphorus Optimization Plan and a one-year implementation period, then the facility will be required to upgrade its phosphorus removal capabilities. Vermont's all-in approach to the TMDL relies on reductions in other sectors and these efforts are rolling out in the form of the "3-acre" Stormwater General Permit 3-9050, the development of a more stringent CAFO permitting structure, and through investment in projects that address the non-point source nature of the majority of phosphorus inputs into the Lake.

COMMENT # 17

I'm concerned about the quality of water coming out of the Otter Creek from the Rutland wastewater treatment facility and the others on Otter Creek. We do live downstream and the water in Lake Champlain moves north from Otter Creek towards Burlington and our drinking water comes from Lake Champlain. At this point we cannot be blasé about small quantities of toxins going into the lake. I don't know if ANR is familiar with the concept of endocrine disruptors that do damage at very low concentrations. In this day and age, we can't go by the principle that the amount makes the poison, and we have to protect water in the first place. My understanding of NPDES permits that it's a national pollutant discharge elimination system. We need to not allow more stuff to get into the water, but to stop it from getting into water. There are so many endocrine disruptors being used and I'm calling on ANR to make really hard decisions and to work with the City to update this system so that toxins are not entering the Waters of the State. If you need more information about endocrine disruption and how it works, I can share that, but it really must be part of your examination and your analysis of what's going on. We all live downstream. We have to protect the water for future generations, not just for this generation. Water is precious.

RESPONSE # 17

The permit contains requirements to test for endocrine disruptors that are included in the list of pollutants included as Appendix J of Part 122. A copy of that list is Attachment A of the draft permit. Public drinking water sources are treated prior to distribution to remove any contaminants present to levels acceptable for consumption.

In order to prohibit or limit the concentration of a substance in the effluent it is necessary that there be a water quality standard. VWQS contain few numeric limits for endocrine disruptors. When numeric standards and limits are unavailable, the narrative condition of no toxics in toxic amounts is generally used to ensure that the effluent does not violate VWQS. See VWQS

section 29A-303(7)). WET testing, included in this permit, and accompanied by Appendix J testing, is used to ensure that the narrative condition is met.

COMMENT # 18

I'm Annette Smith, I'm the Executive Director at Vermonters for a Clean Environment. I'm going to offer comments on all four permits. I'm especially concerned about the way that the Rutland permit has really had no opportunities for public comments since the permit was issued in 2002. While I understand the reasoning for putting it on hold, we should have had two or three other opportunities to weigh in on this so now it's been a long time and I honestly expected to see more improvements in the permits in terms of the plant being able to address incompatible substances like PFAS chemicals, all these emerging chemicals that back in 2002 we weren't even aware of pharmaceuticals. I mean things have changed, these permits look like business as usual, and I don't think we have time for that anymore. We really need to do a lot better and it's especially concerning because it's not just the Rutland plant that has had diversions and overflows. Rutland has had 482 between 2015 and 2021, Brandon has had 12, Pittsford's had 3, and Wallingford has had 2 and if my arithmetic is correct, of the total 187,000,000, plus gallons of sewage overflows or diversions that have gone into the Otter Creek, these four permits represent 107,000,000 of those so this is not an inconsequential amount of contaminants entering our waters. I don't know about you, but I know a lot of people who are sick with all kinds of weird things, and we have to do better. In terms of the specifics and the permits, I think that the comments of Thomas Weiss from an engineer 's perspective, get into system details. He talks about backsliding and some of the things that are in the permit are not as protective as they were in 2002. He recommends doing some evaluations for the River Street Bridge to figure out how to address those overflows. He talks about the incompatible substances and monitoring for PFAS, but we need to go beyond monitoring. We really need to implement technology that keeps these substances out of the environment altogether. I'm disappointed that we haven't really come very far in the nearly 20 years that this Rutland permit has been in place with several 1272 Orders. Vermont has this image of having a clean environment and these wastewater treatment facilities put the lie to that and I appreciate the position the Agency is in, but we have to do better now.

RESPONSE #18

The Rutland permit was administratively continued based on litigation around and development of a new TMDL for Lake Champlain. During that time many permits were issued under the Lake Champlain TMDL that were placed on public notice and the permitting processes have evolved within the basin based on comments received. This permit is the first to receive comment regarding PFAS monitoring. NPDES permits must rely on methods and adopted water quality standards to legally regulate discharges and these methods and standards have not yet been promulgated for PFAS. The state of the science here reflects the emerging-contaminant nature of PFAS compounds. Despite the challenges, the Agency is dedicated to understanding the amount of PFAS in WWTF discharges, as indicated in its 2021 PFAS Road Map. The Agency believes that such a comprehensive, statewide approach is the most efficient way to collect appropriate

data and is currently evaluating an Agency-implemented monitoring project that would include all currently permitted publicly owned treatment works.

Regarding ongoing discharges, it is inappropriate to lump the discharges from a combined sewer system with those due to WWTF upset. Moreover, due to the reporting rules for WWTFs, a facility must post a public alert if they suspect a discharge in excess of the VWQS for E.coli. Therefore, these discharges can vary in quality and this comment represents an overgeneralization of the water quality discharged during these events.

An analysis of CSO and Untreated/Partially Treated Discharges to the Otter Creek between 1/1/2015 and 9/1/2021

Facility	CSO Flows (MG)	U/P Flows (MG)	Sum of CSO and U/P Flows (MG)	Treated WWTF Flows (MG)	Percent Wastewater Treated	Percent Wastewater Treated Excluding CSO	Flow in Otter Creek at Rutland USGS Gauge (MG)	Percent Untreated Flow in Otter Creek	Untreated Flow in Otter Creek excluding CSO
Rutland	195.12	3.99	199.11	11108.17	98.2%	99.96%	894,817	0.02%	0.0004%
Brandon	N/A	17.20	17.20	931.57	98.2%	N/A		0.002%	0.002%
Wallingford	N/A	0.22	0.22	108.17	99.8%	N/A		0.00002%	0.00002%
Pittford	N/A	0.20	0.20	141.66	99.9%	N/A		0.00002%	0.00002%
Total	195.12	21.61	216.73	12289.56	98.2%	99.8%		0.02%	0.002%

MG = Million Gallons, MGD = Million Gallons per Day
CSO = Combined Sewer Overflow
U/P = Untreated or Partially Treated Discharges

The commentor is generally correct regarding the volume of untreated or partially treated sewage that is discharged into the Otter Creek. However, they fail to provide the context for the volume or to differentiate between different types of discharge. The table above presents the total flows over the time period 1/1/2015 to 9/1/2021 for the four WWTFs, the reported CSO flows, the reported untreated and partially treated discharges and the flow at the USGS gauge in Rutland. Since river flows increase as more area is added to the watershed, these comparisons to the total Otter Creek flow are qualitative - the flows downstream in Brandon are higher than in Rutland while the flows upstream in Pittsford and Wallingford are lower. The Wallingford and Pittsford WWTFs each treated over 99.8% of the wastewater discharged by their towns. The Rutland WWTF treated 99.96% of wastewater excluding CSOs, or 98.2% when CSOs are included. CSO discharges are the result of legacy infrastructure and are not related to the operation of the WWTF or its ability to treat wastes. The Brandon WWTF also treated in excess of 98% of their wastewater, with the majority of the untreated or partially treated discharges being attributable to bypasses of the chlorine contact tank during flood conditions.

While the support of other commenters is acknowledged, it is important to note that overall this permit represents a more stringent regulatory framework than the 2002 permit.

COMMENT #19

I'm Bart Guetti, I'm a consultant to Dartmouth Hitchcock and we're doing a neurological study. Originally it was regional (Vermont and New Hampshire) and now it's gone international working in Ohio, Florida, and Italy. What we're looking at are toxics primarily and cyanobacteria and what I have discovered is that there's data available that you may not be aware of regarding Superfund sites and Brownfields and air permits that results in precipitating toxic out of the air and you may be able to start to look at those if you're not already in your watershed to see if you can identify point sources like the toxics release inventory would be releases to surface waters and other NPDES permits that might be in your watershed. Your watershed would be one framework that you would look at but also Brownfields and Superfund sites are quasi non-point, point sources because they're usually large parcels of land so it's data that's available on pesticide applications so you might be able to look at some of those to determine where these toxics in particular, PFAS, are originating and maybe bring the facilities that are in violation into compliance or perhaps be able to get some settlements from them or funding assistance to help with the upgrade of your infrastructure.

RESPONSE #19

ANR is working on predictive water quality tools that combine GIS technology with available data sets and hope to be able to use this in the future to supplement and direct field sampling activities.

COMMENT #20

I'm interested to hear that it was Vermonters for a Clean Environment that requested this hearing. I'm wondering why ANR did not on their own accord set up a hearing for these permits in that area for people to learn about this and what needs to be done. People have a lot of internet things to look at and they may not be aware of the intricacies of your permit system. It takes some expertise and considerable patience to make one's way through the website. I really think that water is of such importance, clean water is of such importance to people. We're talking about serious discharges so I'm just asking that you be more proactive on this kind of thing. It should be more proactive with the community on helping us take care of the water.

RESPONSE #20

This hearing was requested by multiple parties. The permits were noticed according to the procedures prescribed by the Legislature. ANR does schedule hearings when public interest is anticipated, however, it did not preemptively set hearings for these permits due to a long history of non-attendance by the public at such events. However, a hearing was scheduled once a request was received.

COMMENT #21

Following up on that, because these permits had been applied for prior to the creation of the Environmental Notice Bulletin, these types of permits don't even show up on the Environmental

Notice Bulletin and I think that's a big problem. If I understand correctly, all of these NPDES permits for the Otter Creek Basin are in an administrative extension category and are basically operating after having expired, I don't know if any of them will show up in the Environmental Notice Bulletin, but I assume that you're going to be doing more before the end of the year. There is a tremendous amount of interest in this but nobody knows about these being put out for public comment and so I think that going forward as you continue to issue draft permits for the rest of the Otter Creek Basin, I think that it would be helpful for you to for instance, issue a press release so that it would actually get in the body of the newspaper. I'm very good at reading notices and I did not see the notice for this hearing tonight. Because it's not in the Environmental Notice Bulletin it's being kind of buried compared to what is now normal and as Sylvia points out it's still very challenging to keep up with the things that are done through the internet. There is still a real value in putting out press releases and letting people know that they have an opportunity to weigh in on these things. The way that these permits are written are not very accessible to the public. What the public knows is that they want these discharges to stop and they want our water to be swimmable, fishable, and drinkable and they don't really know how to make that connection to make comments to you on how to write these permits so that they're actually effective in doing what we all believe should happen right now. We're seeing that these are just pieces of paper and they're not really protecting the environment in a way that they were intended to when the Clean Water Act was put in place. Perhaps some kind of educational piece could be put out by the Agency to help us understand what your challenges are in writing permits that require the technology, I mean, is it just money that we need? What will it take to get Rutland to stop dumping millions and millions of gallons of untreated or partially treated sewage into the Otter Creek? It can be the role of nonprofit advocacy organizations, but I do think that the State has a role to play here and helping the public understand what they can do to help improve the situation here.

RESPONSE #21

The permits and public meeting were put on notice as required by law. Contrary to the above comment, notices for the comment period, public meeting and extended comment period for the Rutland WWTF draft permit were advertised in the Rutland Herald.

As a Major NPDES Facility, the public comment period and meeting notice were advertised in the Rutland Herald a total of 3 times:

- 1st ad for original public comment period of 5/25-6/25 ran in the Rutland Herald in the 5/26/21 newspaper edition
- 2nd ad for extended public comment period 5/25-7/21 ran in the Rutland Herald in the 6/23/21 newspaper edition
- 3rd ad for public meeting and additional comment period 5/25-9/10 with meeting scheduled 9/2 ran in the Rutland Herald in the 7/31/21 edition

The Agency is unsure what "technology" the comment seeks to require of the facility; the technology-related aspects of the permit are necessarily consistent with the legal bases provided in the Clean Water Act, Code of Federal Regulations, and state statutes and regulations.

COMMENT #22

I've been giving thought beyond what my written comments were for the Otter Creek and I'm calling it for Outer Creek because it has an entire series of wastewater treatment facilities that on their best day are polluting it within standards or within permit conditions, but oftentimes are discharging at levels of contaminants and pathogens that exceeds standards and render that river, the entirety of it, non-swimmable, unswimmable, or not safe to swim in and not safe for contact sports. Because of the unpredictability of that, classifying as a Class B water that is safe for contact sports is not based in reality in terms of the public being able to know day to day whether it's safe to use and you know as adults plugged in and folks who are activists I guess, we might know before going for a swim or a kayak to look somewhere, but you know teenagers who go out for a swim with their friends, probably sneak in a beer and go for a swim like we all used to do, they can't know. As parents, you can't know whether your kids are jumping in that water and whether at that point in time it's safe or ever safe. Because the continual discharges, the flagrant violations for all the reasons we know, it might be labeled Class B but this river is not a swimmable river, it's really not safe to swim. You can't ever know what state it is and even when notices are put out there's a lag there's a delay we don't know. When there's a storm event that causes these plants to, I think we used to say "burp", you know it's additive; one plant discharges flow and combined with the next plant downstream and then the next plant and the next plant and so on and so forth and it gets worse and worse and worse.

Beyond the impacts of Lake Champlain that have been stated, this river needs your serious attention. These permits have not been issued for so long, I would rather see you folks go back and put on your thinking caps, maybe bring the public in and say "Hey, we're looking for more ideas. Let's have let's have a group session all day, and come up with different ideas and approaches that maybe we can incorporate over near term and over the longer term". I really would like to see this fixed, and if it takes 6 or 7 years let's get going on it. I was a permit writer and I know what you're up against but it's really time to put our thinking caps on and look at this comprehensively. The Rutland plant is the poster child for what is wrong across the state with our wastewater treatment facilities not really protecting our environment as it needs to be protected today.

Lastly, not to put too sharp a point on this, it's been brought to my attention from a number of corners that there is a kind of first bite of the apple being provided to the Permittees, the wastewater treatment facility owners, and municipalities to be able to view proposed draft permits before they go out for public comment. They get to negotiate or at least converse with you as to what is a fair condition or what is doable, what is affordable, etcetera and I expect that there are changes made to the first proposed draft permits before they go out to public comment. I think that's actually good process, but I really think you need to make that available to the public as well. I don't think you're trying to do anything nefarious; I think you're trying to be helpful. These permit conditions can be very expensive and hand wringing for municipalities, they've got a budget and everything, but it's still important that the public have an opportunity to view what is going on and even provide at the very least written comment if they're not allowed

in the same room. I just think that's good for you guys and your program; it keeps you guys on the high road and it's good for the public. I just think we got to all pull together, we are all Vermonters, we all care about the same things I know you guys do, that's why you've been there so please take that into serious consideration. The pre public notice meeting and common guidance form is what I'm looking at right here. I think it's not bad policy, except that it does not include the public early on and there's no reason why you couldn't put it on the ENB and say, "Hey folks, if you're interested chime in, we're having this conversation now and anything you can add to that would really be encouraged and helpful".

RESPONSE #22

The reasonable potential determination analysis requires the Secretary to determine whether a discharge causes or has the reasonable potential to cause or contribute to an exceedance of water quality standards. That analysis is done through reliance on instream data taken above and below the WWTF and considering the effluent data on file for the facility collected via permit compliance monitoring. While there are several facilities that discharge to the Otter Creek, the Otter Creek is not 303(d) listed for any pollutants downstream of these facilities except for storm driven overflows that do not occur at the WWTF. Lake Champlain has the Total Phosphorus TMDL which is meant to address the impairment due to phosphorus and also has a 303(d) listing for PCBs in fish tissue. PCBs are not typically found in sewage in significant concentrations.

The required public comment period is the opportunity to comment on permits that is afforded through statute. The program has a practice of meeting with facilities prior to public noticing to confirm deadlines set within are achievable and answer technical questions that may affect permit formulation. The result of these meeting may be to change compliance dates based on better understanding of feasibility, but effluent limits and permit requirements are not negotiable in these meetings. Requests to materially change permit requirements during these meetings are required to be submitted as public comments by the facility. These meetings assure the draft that is presented for public comment is one that the facility can meet. The opportunity for the public to comment is during the public comment period and the Secretary responds to all comments and considers them in final permit formulation.

COMMENT #23

I'm Stephen Cijka, I am the Chief Operator at the Brandon, VT wastewater plant and I have been there for 33 years. I will tell you from day one at least at my plant and probably at a lot of others, the problem is rainwater getting to the plant, that is a major problem. Sometimes, the water can be separated out and put in a separate system. As you all well know now if you upgrade your system of stormwater, you have to have a series of either water gardens or some big, superior catch basins to catch the sand and stuff. This all costs a lot of money. Also, the pipes in most wastewater plants were put in probably 80 to 100 years ago, a lot of them were put in in 1933 by the Civilian Conservation Corps, where the guys were getting $25.00 a month. Now I dare say, someone might be making closer to that in an hour or two so there's a cost factor. The cost of a very recent project through Brandon to lay a mile of sewer lines is-now write this down,

$1,000,000 between digging up the old pipe, putting in the new pipe, bedding it properly, having the engineers go through it, and putting in the proper manholes is $1,000,000 a mile. Brandon has 20 miles of pipe that's real old. Am I going to go to my Select Board and ask for $20,000,000? How long is it going to take to get that? There definitely is a cost factor in fixing things the right way. Not only that, if all the sewer lines in Brandon get fixed that doesn't solve the problem. All the building sewers, which we are not responsible for, could have leaks in them as well going into the town line. How do we solve that? Do we make the people do it or do we pay for it by raising the taxes? That's another problem. Also, the sump pumps in a lot of the houses go into the sewer line- that's adding more water. Also, roof drains- if you go around and look and see where all that water goes for flat roofs around these different towns and cities, you'll find out it's not draining off the roof. Where is it going? Going through the roof through some pipes. In a lot of places, it's probably going into the sewer line, adding yet more water. Another problem is, when the indigenous people and I will call them the Indians because I'm going to be 62 years old and that's what we called them; the first people in Vermont, there were no cottages along the lake. All of these cottages along the lake have lawns. I bet a lot of people fertilize those lawns. What happens when it rains hard? The water takes the phosphorus that's naturally in the soil into the lake. We are a victim of our own success; we pave the roads. Did you know that a 4 by 8 foot section of land if it gets one inch of rain, that's 20 gallons? We get about 38 inches of rain a year on average. That's a lot of gallons, just multiply that by all the miles of paved roads we need to live in this society to get the trucks to where they need to bring supplies to us here in Vermont.

Back when I was born in 1959, one of the old principals that I talked with at the elementary school in Brandon said he used to go around and check all along the Neshobe River before the sewer plant was put in 1960 in the summertime and he found all these places where the sewage was going directly into the river, that's what happened before we had wastewater treatment plants. Now, most of it goes to the plant unless there's too much water for the plant to handle- these are all designed for a certain amount of water and if we exceed them, it's got to go someplace. 360 or 364 days a year is a lot better to have clean water than what it used to be where 365 days a year it was going into the river constantly. I just want to bring these things to light because a lot of times it's about money, I hate to say it but it's about money. If we don't have the money, we can't do it and we do the best we can and that's what ANR has been doing, the best they can. If you want your sewer taxes to be raised perhaps four times as much, maybe we can do something in 100 years and straighten everything out. There are also people on chemotherapy and that waste passes through their bodies and goes into the sewer and we can't catch it so you would have to have a separate system just in the homes to catch all this stuff not to mention every time you use water in a home it's clean water that becomes dirty through the pipes. There are metal pipes and that catches some of the metals and wicks it through. A lot of this stuff gets caught in the sludge and goes to a landfill and gets buried, but some may pass through. The other thing is here in Vermont we're very fortunate because we send a $1.00 to federal taxes to the federal government and we get a $1.50 back, so that's a real good deal.

RESPONSE #23

The Agency acknowledges the challenges that municipal wastewater plants and collection systems face.

COMMENT #24

My name is John Haverstock and I'm the Town Manager in Pittsford. I just wanted to appreciate Mr. Cijka for a dose of important reality of frontline work at wastewater treatment plants. We're proud of the work we do in Pittsford to try to keep our discharges clean and the effluent as clean as possible and unwanted discharges as minimal as possible. We've invested a lot of money in an upgraded wastewater treatment plant and in replacing a lot of lines through which a lot of infiltration of stormwater had been coming so I think we're making progress. To put some perspective on the issue of pollution in the lake, I've seen seminars from our friends at the Vermont League of Cities and Towns where they'll put a pie chart on the screen and they'll point out all the different ways pollution gets into the lake and the percentage of pollutants that come from wastewater treatment plants, as I understand, is something in the range of 3% of the problem. Agriculture is 40% of the problem, so I know that you're here tonight to deal with wastewater permits, but I do think it's important to keep in perspective orders of magnitude and where the problem lies. It lies with all of us because we all discharge effluent so we're all guilty of contributing to the problem, but I think the wastewater treatment plants are fairly heavily regulated. They're getting tighter on their standards, as I understand our recent meeting with Katie Parrish explaining additional monitoring that's going to be done, more testing and I do believe that controls are in place to minimize unwanted discharges. I appreciate the work that Mr. DiDomenico does with us at our wastewater plant. I appreciate the spirit of discussion that we had with Katie Parrish, and I appreciate all the work that ANR does to try to bring regulatory compliance and try to keep the rivers and lakes of Vermont as clean as possible.

RESPONSE #24

This comment highlights the efforts that towns are willing to put in to protect water quality by treating their sewage and the efforts being made to help put wastewater contributions of phosphorus in perspective. According to Table 3 in the 2016 Lake Champlain Total Phosphorus TMDL, agricultural sources of phosphorous in the Otter Creek basin contribute more than 15 times as much as WWTFs (Lake Champlain TMDL, Table 3).

COMMENT #25

Regarding the comment from the representative from Brandon and the cost of maintaining infrastructure. Given that, is there any motion, movements in the state for curtailing or putting a moratorium on new development because that's money that could be used for repairing existing infrastructure and it also builds an expense for the future.

RESPONSE #25

The Agency is not aware of any consideration of a development moratorium.

COMMENT #26

As I recommended in the 9/2/2021 Public Hearing regarding renewal of the Rutland WWTP permit, and apparently also recommended in the 5/26/21 letter from Trevien Stanger, a moratorium on new development and connections should be instituted immediately to prevent the worsening of emergency releases of untreated sewage into the Otter Creek and eventually into Lake Champlain. Lake Champlain has seen a record number of cyanobacteria blooms, and beach closures this summer, and the phosphorous from WWTP and CSO's are a significant contributor to this phosphorous loading. Cyanobacteria blooms are capable of producing neurotoxins that contribute to neurological diseases such as ALS. The following link to a study *Cyanobacteria, Cyanotoxins, and Neurodegenerative Diseases: Dangerous Liaisons* available at https://pubmed.ncbi.nlm.nih.gov/34445429/

Others in the Public Meeting stated their concerns about PFAS and other toxic chemicals in Rutland's wastewater. I too am concerned about these as they too are suspected contributors to neurological diseases. As I also stated in the meeting, the City of Rutland should attempt to find the point, and non-point, sources of these contaminants. There are several USEPA, USGS governmental databases that could help in identifying these contributors.

RESPONSE #26

A moratorium on new development is beyond the Agency's wastewater permitting jurisdiction. Moreover, CSO discharges are not a function of the ability of the WWTF to treat wastewater but due to the design of the collection system that also intercept stormwater during rain events.

CSO overflows represent approximately 0.04%. of Lake Champlain's annual total phosphorus and therefore are not considered a significant contribution to the total phosphorus loading.

Each domestic sewer connection is a source of PFAS and other toxic chemicals in Rutland City's wastewater. There may be other sources of contamination as well, but it is important to acknowledge that there are many contributors to the demand for and use of toxic chemicals including emerging contaminants.

COMMENT #27

To whom it may concern,

This letter is to protest the discharge of any contaminated water or substances into any body of water in Vermont. I particularly find discharges from Rutland into the stream and discharges into lake Champlain.

This policy has gone on many years. There has been ample time to fix problems and build new plants.

There should be no permit issued that does not have a time line, with hefty fines for fixing discharge problems. This discharging into our lakes and streams MUST stop now!

If I have not sent this letter to the correct entity, please return it with how I can properly protest the permitting of Rutland discharge.

RESPONSE #27

State and Federal law allow for the discharge of water containing wastes in concentration less than those specified in the numeric or narrative conditions found in the Vermont Water Quality Standards (VWQS). The Rutland City WWTF does not require a compliance schedule to achieve the revised permit limits. Rutland City's CSOs are regulated by a 1272 Order pursuant to the Chapter 34 Combined Sewer Overflow Rule and is being managed in a process parallel to the NPDES permit. The City's CSO Long Term Control Plan, which includes a list of projects and a schedule to address CSO overflows in conformity with the CSO Rule, is currently under review.

COMMENT #28

Water is precious for all life, now and for future generations. As we are mostly water ourselves, we are intricately woven into the amazing cycle of water on Earth.

I'm wondering if you are as troubled as I am to learn of huge sewage diversions into Waters of the State --untreated human feces and urine, mixed with industrial poisons (like PFAS), pesticides, pharmaceutical compounds, and gutter pollutants, compounded by cyanobacteria outbreaks and the resulting cyanotoxins.

When water treatment facilities are not upgraded to handle a municipality's needs, stormwater overflows mean that untreated sewage enters our waterways. This contamination of waters of the State means injustice, economic and health inequities, and danger to all during a time of pandemic, which is not over.

Use of 10VSA §1272 Administrative Extensions are not intended to be a long-term means to allow continuance of out-of-date permits, as has occurred in the Otter Creek watershed. They are not a public process, do not address the real problem at hand-- out-of-date facilities unable to meet the current demand—and, most importantly, do not clean up the water. Efforts to hold a public hearing on NPDES permit #3-1285 and to receive public comment are encouraging.

My husband and I live downstream of Rutland's sewage overflows in the Otter Creek, because water in Lake Champlain flows to the north. Living near the confluence of Winooski River with Lake Champlain, my husband and I are just two of tens of thousands of people who depend on treated Lake Champlain water for drinking, cooking, and bathing. We do not have a separate filtration system in our condo. Many depend upon the Lake for recreation and cooling off during hot summer days. Cyanobacterial contamination of beaches and water is an injustice to those who depend upon the Lake for water and recreation.

Peer-reviewed literature on pesticides, endocrine disruption, cyanobacteria, PFAS, and their effects on humans and the community of life alerts us that toxins can now endanger our health at parts per trillion. *We can no longer be complacent about small amounts of various contaminants in water; dilution cannot be depended upon to save us from our pollution.* Current toxicology, regulatory and health systems cannot compensate for the contaminants currently allowed to pollute the waters of the State. The cumulative picture should be a wake-up call.

ANR and Department of Environmental Conservation must not issue any new permits for additions of pavement or sewage until:

1. Stormwater treatment is expanded to address current demands;

2. Wastewater treatment capacity is expanded to handle the current loads;

3. Wastewater treatment is upgraded to the "limits of technology" to ensure no degradation of downstream drinking water supplies for human health;

4. Drinking water treatment plants are upgraded to protect the public health;

5. Meaningful regulation and enforcement of environmental protections are instituted for industrial agriculture, especially conventional dairy livestock, and reduction of pesticide use.

So, my question: Will Federal funds targeted to Vermont for recovery after COVID be used to accomplish the steps listed above in order to protect water quality? I await your response.

Maintaining our health in the face of COVID variants and other diseases requires that we care for our immune systems, aided by our gut microbiota, which are under constant threat from repeated exposure to toxins in the water and food we consume, even at small amounts. Everyone must assume responsibility for our personal actions, but we do need our state officials to enforce laws and policies to protect the water we depend upon for life.

I support measures recommended by John Brabant of Vermonters for a Clean Environment in his comments of July 21 to Amy Polaczyk.

RESPONSE #28

The City of Rutland received $4.4 million dollars in Federal American Rescue Plan Act (ARPA) funds directly to spend as the local government sees fit. At least $25 million dollars Federal ARPA funds to the State of Vermont were allocated by the legislature to be used in addressing CSO overflows (https://anr.vermont.gov/content/combined-sewer-overflow-cso-elimination-and-abatement), and Rutland is encouraged to apply for these funds. Funds from the Infrastructure Investment and Jobs Act will likely add to the funding available for the City to address their current infrastructure needs.

This comment period is for a NPDES Permit for the City of Rutland's WWTF, and therefore the Agency declines to use this context for commenting on how funding for stormwater, drinking water and agriculture may be obtained or spent.

COMMENT #29

No new permits should be issued for the Rutland Wastewater Facility until the developers and the City of Rutland can demonstrate sufficient environmental protections are in place. Period.

RESPONSE #29

If a new permit is not issued, then the current permit will remain in place. Renewal of the permit provides the ability to institute new requirements such as:

- Whole Effluent Toxicity (WET) testing
- Priority pollutant analysis
- Proficiency Testing
- More restrictive TRC limits
- Monitoring for Total Ammonia Nitrogen
- Monitoring for Total Nitrogen, Nitrates and Nitrites, and winter time Total Kjeldahl Nitrogen
- Updating the Emergency Power Failure Plan
- Updating the Operations, Maintenance and Emergency Response Plan
- Reduced phosphorus limit and implement TMDL requirements
- Requiring preparation of a Phosphorus Optimization Plan
- Requiring preparation of an Engineering Evaluation and Asset Management Plan
- Incorporating electronic reporting requirements into the permit.

COMMENT #30 (non-italicized text was received from two commenters)

Regarding the Legal Dumping of Human Waste into Otter Creek and Lake Champlain--our recreational and drinking water supply.

I am writing today to express my concern with Rutland's ongoing problems with CSO's releasing toxicity and pollution into the waters that my family swims in, drinks from, and recreates upon. I find this situation distressing, disturbing, and of very high concern for me as a tax-payer, citizen, and resident of Vermont's side of the Champlain Basin.

If the safeguarding of our waters is already a strain on Rutland's municipal waste-water system, and any further development (more sewers, more impervious surfaces) would add further strain, it seems beyond sensible that no new development permits should be granted until these issues are resolved.

RESPONSE #30

The State of Vermont is approaching this issue through the implementation of the 2016 Chapter 34 Combined Sewer Overflow Rule. Combined sewers exist as a consequence of the prevailing engineering approach at the time the system was constructed: that collecting storm water and

wastewater to flow to the treatment plant was preferable to separate storm sewers and when the collection system was not able to convey the whole flow to the Wastewater Treatment Facility (WWTF), relief points (Combined Sewer Overflows or CSOs) would protect the system from backing up into homes and businesses and the WWTF from being overwhelmed. Re-engineering these systems to remove these relief points is very costly and complicated because the infrastructure is buried in highly-developed areas.

The CSO Rule requires the City of Rutland to develop and implement a Long-Term Control Plan to assure discharges from CSOs meet the Vermont Water Quality Standards. Pursuant to the CSO Rule, this requirement is contained in an enforceable 1272 Order separate from the National Pollution Discharge Elimination System (NPDES) permit because the abatement efforts require a compliance schedule that exceeds the 5-year NPDES permit term. The NPDES permit requires the effluent of the WWTF to comply with Federal and State statutes and rules to uphold the Clean Water Act.

The NPDES permit does not have jurisdictional authority to require a moratorium on development.

COMMENT #31

We can't, in good conscience, continue to postpone the cost of allowing our environment to repair itself to future generations. The costs to our children and grandchildren will be only that much greater. It's time to pay the cost of our shortsightedness. We can do it. And that must be the choice made by people of good will.

RESPONSE #31

This comment is included for the permit record, but it is unclear how it relates to the draft permit and the Agency therefore has no permit-related response.

COMMENT #32

I am writing to comment on the Wastewater Permit pending for the City of Rutland. It has come to my attention that Rutland, under its current permit dating from 2003, has discharged raw sewage into Lake Champlain or its tributaries hundreds of times in the last six months. If any of this factual data is inaccurate, I apologize. However, the underlying truth is that the current wastewater system in Rutland is not adequate to the task demanded of it by current conditions. I therefore ask that ANR deny the city of Rutland a renewal of its permit until the problems are rectified.

Here in Burlington where I live, we all depend on Lake Champlain for our lives -- for drinking water, for recreation and for accepting our processed wastewater. The system in my own city has its flaws, which we are currently seeking to resolve with significant upgrades to our system.

Rutland should not be given a new permit until similar financial commitments are made to protect our water.

RESPONSE #32

The Rutland City WWTF and collection system has not discharged raw sewage into Lake Champlain or its tributaries hundreds of times in the past six months as asserted by this comment.

If a new permit is not issued, the current permit will remain in place and additional testing and requirements will not be placed on the City WWTF to optimize phosphorus discharges and complete testing for toxics and other contaminants of concern.

Rutland City's CSOs are regulated by a 1272 Order pursuant to the Chapter 34 Combined Sewer Overflow Rule and are being managed in a process parallel to this NPDES permit. The City's CSO Long Term Control Plan is in draft and contains a list of projects and a schedule to address CSO overflows in conformity with the CSO Rule.

COMMENT #33

To Whom It May Concern,

I attended your meeting on September 2, 2021 by phone. I am very committed to maintaining water quality in our state but especially as it affects the waste water overflow which is going into Lake Champlain. I have been doing water sampling for the Lewis Creek Association and So County River Watch for several years.

It concerns me greatly that your meeting was poorly publicized so that people could have commented prior to September 10, 2021 deadline. In planning future waste water needs and plant construction, it is important to look carefully at the new construction projects both commercial and residential. If the current plants can't control the spills, how will they be able to control the lake pollution from even more units?

I also second Annette Smith's point, from Vermonters for a Clean Environment, that the new facilities will need to have a way to filter out the pharmaceuticals that currently are not addressed.

Clean water is very necessary for all of life. It cannot be ignored or swept under the rug.

RESPONSE #33

The permits and the public meeting were noticed according to the procedure laid out by 40 C.F.R. § 124.10 and 10 V.S.A. § 7712, including notice online and in an area newspaper. ANR did not preemptively set up hearings due to a long history of non-attendance by the public at such events, but did schedule hearings once a request was received. Notably, this meeting was relatively well-attended.

The Rutland City WWTF had a single discharge of partially disinfected effluent during the current permit term, therefore, it is unclear what "spills" the comment suggests the WWTF is unable to control. There is no indication that "spills" are occurring at the WWTF with any frequency, or that they reach the waters of the state.

Vermonters for a Clean Environment

July 21, 2020

Amy Polaczyk, Wastewater Program Manager
Vermont Department of Environmental Conservation
Watershed Management Division
One National Drive, Davis Building 3rd floor
Montpelier, VT 05620-3522

via email

RE: Permit # 3-1285; PIN: RU95-065; NPDES # VT0100871

Dear Ms. Polaczyk:

The comments contained in this letter are provided regarding the draft City of Rutland Wastewater Treatment Facility (WWTF or Plant) NPDES permit (Permit Number 3-1285 and hereafter "Permit") issued for public notice and comment through July 21, 2021. We provide the following comments:

1. Revised Public Notice, page 1, TENTATIVE DETERMINATIONS – The tentative determination in this public notice states in relevant part, "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." This proposed determination does not accurately represent the true functioning and resulting impacts to the Otter Creek and its tributaries of the Rutland WWTF. In fact, the draft Permit acknowledges that there will be violations of the Vermont Water Quality Standards and Federal Clean Water Act by the Rutland WWTF and its CSOs during the term of its operation under the proposed Permit and provides for contingency responses when those non-conforming discharges occur.

   In addition, the record is clear that the Rutland WWTF and infrastructure feeding the plant direct discharge raw sewage on a regular basis. This long term and very current history evidence that this Plant cannot regularly perform to a level that supports this tentative determination. In point of fact, we have been advised that a "1272 Order" is to be issued to the Plant in the very near future, subsequent to the issuance of the final Permit. 1272 Orders are issued when there are violations of permits or law or both and include remedial actions to be taken to hopefully eliminate the potential for future such failures and violations.

   To be clear, the historic and anticipated future violations caused by the Plant include, but are not limited to, discharges that seriously violate the Vermont Water Quality Standards and the Clean Water Act, and do so on a regular basis. Thus, a more accurate tentative or final

determination would state that, for instance, "The operation of the Rutland WWTF, despite the limitations imposed in this Permit, will continue the historic pattern of Vermont Water Quality Standards violations associated with untreated discharges until improvements are made to the Plant that allow for either diversion of separated and treated stormwater from the Plant infrastructure or otherwise provide for increases to storage and treatment capacity that address anticipated high flows that currently result in these violations. The new requirements contained in this Permit will enable the development of these infrastructure and technological improvements which will result in outcomes where no regular or anticipated violating discharges will occur after three years from this Permit's issuance."

2. On a related matter, 1272 Orders were never supposed to be used as an end-run around meeting Vermont Water Quality Standards or NPDES permit requirements. This area of 10 VSA §1272 was meant to provide legal redress for unanticipated violations due to, say, the failure of plant or WWTF plant infrastructure such as a failed pump station operation or failed treatment lagoon or some such. VANR has for 4 decades relied on using issued 1272 enforcement orders as a means to provide legal cover for illegal discharges and to allow for substandard permits and permit conditions regarding WWTF design capacity to continue to be issued.

   Technically, permits to WWTFs such as Rutland should be denied as they CANNOT meet Vermont Water Quality Standards on a regular basis as currently designed, however we acknowledge that this essential infrastructure would need to continue operation even where a permit is denied. As such, VANR needs to acknowledge the problems with this and other similarly situated plants' designs and operations and as previously stated, include REAL permit requirements that WILL result in Plant and Plant infrastructure improvements over a reasonable timeframe, (but not more than 5 years) to see the Plant through to consistent compliance.

   VANR needs to immediately cease using orders issued under 10 VSA §1272 or other enforcement mechanism as a de facto permitting process to allow for on-going activities outside of the law. VANR needs to also be reminded that generally only respondents can formally challenge enforcement orders through appeal to the courts, which sets up the additional matter of the use of 1272 Orders operating outside the normal checks and balances that public scrutiny and public routes of appeal provide through normal permitting process.

3. Permit Special Conditions, Section A, Paragraph 3 b) – This condition is drawn from Rule and states, "The discharge shall not result in toxic substances or chemical constituents in concentrations or combinations in the receiving water that injure or are inimical to plants, animals, humans or aquatic life; **or persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish or other aquatic life, or wildlife that might consume aquatic life**" (emphasis added).
   Placing such a condition provides a false comfort that the Plant can operate to such a standard of protection of the environment and human health with regard to toxic chemical substances emitted by the Plant. In reality, VANR knows full well that the Rutland WWTF on a regular basis

releases untreated sewage to the Otter Creek and its tributaries which contains concentrations of toxic, bio-cumulative chemicals and metals to the water environment such that these chemicals wind up in the tissues of biota in ultimately harmful concentrations. These include PFAS, heavy metals (Pb, Hg, Cr, etc.) and pharmaceuticals. Even where functioning appropriately as allowed under its 2002 and draft Permit conditions, without mishap or stormwater event, these bio-cumulative toxins are released into the water environs of the Otter Creek drainage.

VANR needs to not be including conditions that are misleading or otherwise provide a false comfort to the naïve reader of the draft or final Permit that this Plant is so stringently designed and operated as to protect the public and the environment from such transgressions. This condition rings hollow and in point of fact could be argued as unenforceable as VANR issued this Permit knowing that this condition cannot be met by the current or planned future plant design and operation that this draft Permit would allow. VANR needs to ratchet up Permit conditions to first recognize this and other WWTF shortcomings in its NPDES permit findings and condition the permits to require best available technology to be implemented within timeframes that are within, and do not exceed the 5 year Permit.

4. The Otter Creek and its tributaries downstream of the Plant and its CSOs are classified as Class B waters of the state. Class B waters provide for contact recreation uses which are imperiled each and every time the Plant or its CSOs direct discharge without treatment or without adequate treatment. The Otter Creek main stem at and below the plant as well as stretches of East Creek and Moon Brook are listed on Vermont's 303(d) list of impaired waters due to E.coli and nutrient contamination resulting from untreated Plant and its CSO discharges. Such REGULAR failures of the Plant and its infrastructure to meet standards places at risk not only in-stream biota and wildlife that utilize the Otter Creek and its tribs, but also the user public that trusts that these waters are safe to utilize for swimming and other contact recreation such as canoeing, kayaking and fishing. I have witnessed firsthand what can happen to someone who inadvertently swims in such contaminated waters that were classified as swimmable when my college housemate contracted hepatitis B from ingesting river water contaminated with untreated WWTF effluent. Only comprehensive and fully adequate upgrades to the Plant and its sewer line / stormwater infrastructure that recognize real world conditions today will address an eliminate the causes of these stream impairments, as VANR is required to implement under the Clean Water Act.

5. These comments should be seen as applying not only to the Rutland WWTF draft Permit as discussed above, but at minimum, to all other WWTF permits currently on notice for public comment that discharge to the Otter Creek and its tributaries. The impacts of the discharges as discussed above are cumulative as they migrate downstream ultimately to Lake Champlain. Many of the waters are already impaired due to the operations of these WWTFs as well as other contributing factors. VANR needs to arrive at an overall policy and strategy for the state with regard to WWTFs and CSOs to eliminate overflows as a part of plant operation as well as

address the inputs that WWTFs are incapable of treating. With regard to the WWTFs within the Otter Creek watershed, a permitting and plant infrastructure upgrade strategy should be developed and implemented within this next round of permits that will fully address the issues we have discussed.

6. VCE requests that VANR hold a merged public hearing (informational meeting) with regard to this draft Rutland WWTF NPDES permit as well as the other draft WWTF NPDES permits on public notice (Wallingford, Pittsford, Brandon) for Otter Creek drainage. A constructive public discussion and strategy session would be helpful to all involved in working toward improving WWTF treatment operations and protecting the Otter Creek, its tributaries and Lake Champlain.

Thank you for your time and consideration of VCE's comments. I am authorized to state that Lake Champlain International and Vermont Environmental Advocacy support these comments.

Regards,



John Brabant
Regulatory Affairs Director
Vermonters for a Clean Environment

cc: Annette Smith, Executive Director, Vermonters for a Clean Environment
James Ehlers, Lake Champlain International & Vermont Environmental Advocacy

P. O. Box 512
Montpelier, Vermont 05601
July 21, 2021

Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Davis Building, 3rd Floor
Montpelier, VT 05620-3522

Subject: Rutland City draft NPDES permit 3-1285 and upcoming 1272 order

Gentlepeople:

Here are my comments on the draft NPDES permit 3-1285 for the City of Rutland and for the upcoming 1272 order.

NOTE: I am calling the current permit the 2003 permit, based on its effective date. Even though the permit was issued late in 2002, it did not become effective until 2003.

Backsliding on CSO #5

The addition of CSO 5 to the discharges permitted under the draft 2021 permit is a case of backsliding.

The 2003 permit (in its attachment A) shows three CSO outfalls. Special Condition H, Combined Sewer Overflows, of the permit states that discharges from these outfalls are authorized during storm events only.
- CSO S/N 001 discharging into the Otter Creek at Calvery Cemetery
- CSO S/N 002 discharging into the East Creek at a location called home plate
- CSO S/N 009 discharging into the East Creek at a location called third base.

The 2018 1272 order states that the (2003) permit has been administratively extended. That means that CSO 5 is not an authorized CSO discharge point.

The draft 2021 permit (in its table of permitted discharges) shows four CSO outfalls.
- CSO 1 discharging into the Otter Creek, Calvery Cemetery
- CSO 2 discharging into the East Creek, home plate
- CSO 5 discharging into the East Creek, West Street
- CSO 9 discharging into the East Creek, third base

The revised draft 2021 fact sheet points out (III.B.) that the Clean Water Act has an anti-backsliding provision. That provision is at 40 C. F. R. § 122.44(l). [NOTE: that is a lower-case letter ell; it is not a digit one.] The relevant parts of that provision are in bold in the following quote of the section.
"(l) **Reissued permits**. (1) Except as provided in paragraph (l)(2) of this section **when a permit is renewed or reissued**, interim effluent limitations, standards or **conditions must be at least as stringent as the** final effluent limitations, standards, or **conditions in the previous permit** (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under § 122.62.)"
"(2) In the case of effluent limitations . . . " I have omitted the rest of this subsection (2) because it applies only to effluent limitations.

My argument is that adding CSO 5 into the 2021 permit will be a less stringent condition than is in the 2003

permit. As a less stringent condition, CSO 5 may not be added to the list of discharge locations.

Rutland reported 459 "Authorized Wet Weather CSO Discharges" in the period August 17, 2014 through July 16, 2021. The search of the anrweb was of the period January 1, 2007 through July 16, 2021. Apparently the database does not contain records of CSO discharges before sometime in 2014. Of those discharges, 113 were attributed to CSO 5. Those 113 discharges were actually unauthorized discharges according to the terms of the 2003 permit.

I acknowledge that the 1272 orders of 2012 and 2018 include CSO #5 as allowed overflow locations. I am unaware of any earlier 1272 order. However, those orders are in conflict with the 2003 (still current, administratively extended) NPDES permit.

The 2012 order required Rutland to submit a projected schedule for the design and completion of a CSO elimination project that includes CSO S/N 005. 'That schedule was due by December 31, 2013. That order allowed the Agency to incorporated the schedule into an amended order. According to the 2018 1272 order, that schedule had not been provided.

The 2018 order states that it supersedes the 2012 order. The 2018 order lists many actions taken by the City regarding its CSO's. None of the those actions after the 2012 1272 order was issued includes CSO 5.

requests for amendments

Remove CSO 5 from the table of permitted discharge points in the permit.

Amend the 1272 so that CSO 5 is eliminated. If that is not done, then any amended 1272 order needs a public hearing.

Backsliding on upsets.

The addition of an exemption for upsets is a second instance of backsliding.

The 2003 permit contains no condition that exempts discharge violations due to upsets. Allowing a condition exempting certain upsets in the draft 2021 permit is less stringent than the 2003 permit.

request for amendment
Remove the entire condition II.B.6. upsets from the permit.

Investigating the River Street Pump Station
The City of Rutland reported 27 un-authorized discharges from January 1, 2007 through July 16, 2021. Eight of them (from 2017 until now) were at, or caused by, the River Street Pump Station.

Three of these unauthorized discharges are due to breaks in the force mains at the River Street Pump Station. Two were in 2019 and the third this year. The other five were caused by two equipment failures at the pump station leading to backups and discharges from combined sewer overflows upstream of the pump station.

request for amendment
It seems that there is a recurring problem with these force mains, shown by the three breaks. The permit should be modified to require the engineering report to provide a specific analysis and plan for replacing these force mains. Or better yet, start working on such a report now, because the report required by the permit will not be due until 2023. Because of the most recent break, it appears that any previous action that might have taken place was insufficient.

Conditions in the 2003 permit that have been omitted from the draft 2021 permit

The revised fact sheet states that the composite sample of influent BOD_5 shall include the hours of 6:00 a. m. to 6:00 p. m. The 2003 permit has this condition. Despite what the fact sheet states, the draft 2021 permit lacks this condition. Add this condition to the permit.

The revised 2021 draft fact sheet states that the composite sample of influent Total Suspended Solids shall include the hours of 6:00 a. m. to 6:00 p. m. Despite what the fact sheet states, the draft 2021 permit lacks this condition. The 2003 permit has this condition. Add this condition to the permit.

request for amendment
The 2003 permit is explicit that combined sewer overflows are allowed only during storm events. The 2003 permit prohibits septage, leachate, holding tank waste, or other high strength waste from being in the overflow. The draft 2021 permit lacks these conditions. Add these conditions to the 2021 permit.

Pretreatment permits
The revised 2021 draft fact sheet has a table listing five pretreatment permittees. The table lacks permit numbers and when they expire.

request for amendment
Add the dates of expiration of the pretreatment permits in the fact sheet. Add the permit numbers of the pretreatment permits. Indicate how one can obtain copies of the pretreatment permits.

Incompatible Substances
The draft 2021 permit places looser conditions on incompatible substances than do the statute and the rules implementing the statute. The definitions in the permit and rule are essentially identical, with differences mostly due to the context. The statutes do not define incompatible substances.

It is the application of the definition that has a significant difference. The rules and the statutes prohibit incompatible substances from all sources. The permit will only prohibit incompatible substances from major contributing industries.

Definitions of incompatible substances
The draft 2021 permit defines "**Incompatible Substance** – means 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 the works or on water quality. This includes all pollutants required to be regulated under the Clean Water Act." (The 2003 permit defines the term as " **Incompatible Substance (Pollutant)**" with the same text.

The draft 2021 permit requires Rutland to have a sewer ordinance that shall "(a) prohibit the introduction by any person into the Permittee's sewerage system or WWTF of any pollutant which:
(v) In the case of a major contributing industry, as defined in this permit, contains an incompatible pollutant, as defined in this permit, 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." (The 2006 permit has the same requirement for the sewer ordinance.)

The permit does not define "incompatible pollutant". The permit defines "incompatible substance".

The rules on incompatible substances

Rule 13.1 (i) "The term "incompatible substance" means any waste being discharged into a publicly owned treatment works which interferes with, passes through without treatment, or is other wise incompatible with such works or would have a substantial adverse effect on such works or on water quality."

Rule 13.2 b."Any person who wishes to discharge any waste, substance or material into any waters of the state or who wishes to discharge any incompatible substance into any publicly owned treatment works shall file a complete application on the earlier of . . . "

The statutes on incompatible substances

The statutes in 10 V. S. A. chapter 47 do not define an incompatible substance. The word "incompatible" appears twice in the chapter.

"§ 1259. Prohibitions (a) 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 that 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. This subsection shall not prohibit the proper application of fertilizer to fields and crops, nor reduce or affect the authority or policy declared in Joint House Resolution 7 of the 1971 Session of the General Assembly."

"§ 1263. Discharge permits (a) Any person who intends to discharge waste into the waters of the State or who intends to discharge into an injection well or who intends to discharge into any publicly owned treatment works any waste that interferes with, passes through without treatment, or is otherwise incompatible with that works or would have a substantial adverse effect on that works or on water quality shall make application to the Secretary for a discharge permit. Application shall be made on a form prescribed by the Secretary. An applicant shall pay an application fee in accordance with 3 V.S.A. § 2822."

Incompatible substances likely include the PFAS chemicals, antibiotic residuals, and similar substances that are either not removed or not intended to be removed by the treatment processes. Having a requirement in the permit to monitor such substances will show the amount of their presence. That information could be used in the engineering evaluation if EPA or DEC has determined an effluent limit by then.

If it appears likely that there will be limits on some or all these substances, then the engineering evaluation should provide a section on how to modify the treatment process to remove those incompatible substances. Notice that the phrase is "how to modify", not "whether to modify". The decision on whether to modify is a different one.

requests for amendments

The prohibition on incompatible substances in the permit should be the same as in the rules and statute. That means, change the term in the condition on the sewer ordinance (II.B.7.(v)) to match the definition in the permit and the rules.

- the term in the condition in the ordinance then becomes "incompatible substance".
- remove the limitation to match the rules, which means striking the clause "In the case of a major contributing industry, as defined in this permit,".

Require monitoring of some of the incompatible substances, including the PFAS/PFOS family and pharmaceuticals.

Require that the engineering report evaluate what is needed in order to modify the treatment process to remove those incompatible substances, if it seems likely that EPA or DEC will place limits on those substances.

Summary:

Most of these requests refer to the permit. A few refer to the fact sheet.

within the permit

Remove CSO 5 from the table of permitted discharge points.

Remove the entire condition II.B.6. upsets from the permit.

It seems that there is a recurring problem with the force mains at the River Street Pump Station. The permit should be modified to require the engineering report to provide a specific analysis and plan for replacing these force mains. Or better yet, start working on such a report now, because the report required by the permit will not be due until 2023. Because of the most recent break, it appears that any previous action that might have taken place was insufficient.

Add that the composite sample of influent BOD_5 shall include the hours of 6:00 a. m. to 6:00 p. m.

Add that the composite sample of influent total suspended solids shall include the hours of 6:00 a.m. to 6:00 p.m.

Add that combined sewer overflows are allowed only during storm events.

Add that septage, leachate, holding tank waste, or other high strength waste are prohibited from being in the overflow.

The prohibition on incompatible substances in the permit should be the same as in the rules and statute. That means, change the term in the condition on the sewer ordinance (II.B.7.(v)) to match the definition in the permit and the rules.
- the term in the condition in the ordinance then becomes "incompatible substance".
- remove the limitation to match the rules, which means striking the clause "In the case of a major contributing industry, as defined in this permit,".

Require monitoring of some of the incompatible substances, including the PFAS/PFOS family and pharmaceuticals.

Require that the engineering report evaluate what is needed in order to modify the treatment process to remove those incompatible substances, if it seems likely that EPA or DEC will place limits on those substances.

within the fact sheet

Add the dates of expiration of the pretreatment permits in the fact sheet. Add the permit numbers of the pretreatment permits. Indicate how one can obtain copies of the pretreatment permits.

relating to the 1272 order
Amend the 1272 so that CSO 5 is eliminated. If that is not done, then any amended 1272 order needs a public hearing.

Thank you for taking the time to read and evaluate these comments and requests. I hope that you find that all have merit and that you add them to the permit.

Sincerely,
Thomas Weiss

September 10, 2021

Agency of Natural Resources
VT Dept. of Environmental Conservation
Watershed Management Division
1 National Life Drive, Main Building, 2nd Floor
Montpelier, VT 05620-3522

Sent via email to: anr.wsmdwastewater@vermont.gov

RE: CLF and VNRC Comments on Draft NPDES Permits 3-1285 (City of Rutland), 3-1189 (Town of Pittsford), 3-0365 (Wallingford Fire District #1), and 3-1196 (Town of Brandon)

Dear Watershed Management Division,

Conservation Law Foundation (CLF) and Vermont Natural Resources Council (VNRC) appreciate the opportunity to comment on proposed draft National Pollutant Discharge Elimination Permits ("NPDES") 3-1285 (City of Rutland), 3-1189 (Town of Pittsford), 3-0365 (Wallingford Fire District #1), and 3-1196 (Town of Brandon) ("draft Permits"). Founded in 1966, CLF is a member-supported environmental advocacy organization that works to solve the challenges threatening our natural resources and communities in Vermont and throughout New England. CLF is deeply engaged with finding lasting solutions to the water quality problems in Vermont's waterways and was instrumental in establishing the 2016 Lake Champlain Total Maximum Daily Load ("TMDL") for phosphorus. Founded in 1962, VNRC is Vermont's oldest and largest statewide environmental group. VNRC has programs that focus on protecting Vermont's waters and forests and advocating for policies that support sustainable communities and address climate change.

Put simply, the draft Permits do not reflect the seriousness of the water quality challenges facing Otter Creek and Lake Champlain – challenges that are only exacerbated by climate change. With warmer average temperatures, increasing average precipitation, and a higher frequency of significant storm events,[1] we are experiencing deepening water quality

[1] Vermont State Summary, NOAA National Centers for Environmental Information (Runkle et al, 2017).

degradation in the Champlain Basin from phosphorus and other pollutants. The results can be seen in the increased rate of beach closures over the past decade and the presence of harmful algal blooms up and down the shores of Lake Champlain.[2,3] Because of our changing climate and slow progress towards the Lake Champlain nonpoint-source TMDL goals, it's critical that these NPDES permits ask more from our publicly funded and managed wastewater treatment facilities ("WWTFs").

For the reasons set forth below, the draft Permits are inadequate:

1. The Vermont Department of Environmental Conservation ("DEC") must conduct a more robust and specific assumptions analysis to justify the phosphorus limits in these permits;
2. Climate change is exacerbating combined sewer overflows ("CSO") and DEC has not adequately addressed the impacts of CSOs in the NPDES permit for the Rutland Facility under the Vermont Water Quality Standards ("VWQS");
3. Per- and poly-fluoroalkyl substances ("PFAS") endanger public and aquatic health and given the presence of these chemicals in the waste stream, they must be monitored by permitted facilities.

General Background

Lake Champlain is an economic engine that drives a multi-million dollar tourist economy, provides public drinking water, bolsters real estate prices, provides habitat for a wide diversity of species, and serves as an international recreational resource. At the time that it was issued, total phosphorus pollution to the Lake was 34 percent higher than the maximum loading capacity established by the 2016 Lake Champlain Phosphorus TMDL. As a result, its degraded water quality consistently violates the VWQS for phosphorus.

The Otter Creek Basin contributes the third highest amount of phosphorus of any Vermont basin to Lake Champlain, and the TMDL mandates a 23.6% overall phosphorus reduction in the basin over twenty years.[4] To meet this target, the TMDL mandates a 15% reduction in phosphorus inputs from developed lands, 80% from agricultural production areas, 5% from forests, 40.1% from streams, and 46.9% from agricultural nonpoint-sources. Five years into the Lake cleanup plan (i.e., 25% through the TMDL timeframe), Vermont is only 17% towards its phosphorus reduction targets in the Otter Creek Basin (and 13% towards the total reductions required by the Lake Champlain TMDL, basin-wide), with the vast majority of that progress coming from the agricultural sector alone.

[2] "A Boom Year for Blooms: Toxic algae closes beaches, raises concern about water supplies" by John Dillon, *Vermont Public Radio*, 10/25/20).
[3] "Burlington beaches reopen after closure caused by cyanobacteria" by Lana Cohen, *VT Digger*, 7/14/21).
[4] Phosphorus TMDLs for Vermont Segments of Lake Champlain at 48 (US EPA, 2016)

Section 1311(b)(1)(C) of the Clean Water Act ("CWA") requires that NPDES permits include any more stringent limitation necessary to achieve water quality standards. Accordingly, the NPDES regulations require the permitting authority to follow a process for developing water quality-based effluent limitations ("WQBELs") at each permit issuance, imposing limitations on discharges that would otherwise cause or contribute to a violation of water quality standards.[5] In other words, the CWA compels DEC to tailor the WQBELs contained in permits such as these to the exigencies of this pressing pollution problem in Vermont's crown jewel water resource.[6]

Comments

I. DEC must conduct a more robust and specific assumptions analysis to justify the phosphorus WQBELs in these permits.

The Secretary must conduct a more robust and specific assumptions analysis to justify using the wasteload allocation ("WLA") from the Lake Champlain TMDL as the phosphorus WQBEL in these draft Permits. While the Agency may adopt a WQBEL in a NPDES permit that is identical to the WLA in the TMDL, DEC must engage in a specific analysis to determine whether that WQBEL is "consistent with the assumptions and requirements of any available wasteload allocation."[7]

As the Vermont Environmental Court has noted, under this "assumptions" aspect of 40 C.F.R. § 122.44(d)(1)(vii)(B), DEC "must engage in some degree of site-specific and time-specific analysis for each [NPDES permit] application to determine whether a suggested [WLA] provides a stringent enough" limitation on the relevant pollutant to be used as a WQBEL. *In re Montpelier WWTF Discharge Permit*, No. 138-10-17 Vtec, slip op. at 14 (Vt. Envtl. Ct. June 30, 2009). The Court went on to conclude that 40 C.F.R. § 122.44(d)(1)(vii)(B) directs that agencies not blindly accept such past assumptions, but rather analyze them at each permit issuance—or at least at each permit issuance that occurs more than five years after the issuance of the applicable TMDL—to determine whether those assumptions continue to have a basis of reliability. *Id*. at slip op. 16.

Here, the Environmental Protection Agency issued the TMDL on June 17, 2016. DEC posted these draft Permits for public comment just under five years after the TMDL issuance date; however, the final permits will not go into effect until after the five-year mark. In any event, sufficient time has elapsed, and the Lake is in such a state of crisis, that DEC must conduct more than just a minimal assumptions analysis. *See In re Multiple WWTF Permit Appeals*, 138-10-17 Vtec, 139-10-17 Vtec, 140-10-17 Vtec, 141-10-17 Vtec 145-10-17 Vtec, 146-10-17 Vtec, 4-1-18 Vtec, 5-1-18 Vtec, 17-2-18 Vtec, at slip op. 33 (Vt. Envtl Div. Feb. 1, 2019)

[5] 40 C.F.R. § 122.44(d)(1)(i).
[6] 33 U.S.C. § 1311(b)(1)(C), 1313(c)(2)(A); 40 C.F.R. § 122.44(d).
[7] 40 C.F.R. § 122.44(d)(1)(vii)(B).

(signaling that "second guess[ing]" assumptions underlying the TMDL is appropriate when a TMDL is beyond its first year to eighteen months); *id.* (noting that more detailed assumptions analysis likely would have been "justified and helpful" even in first year of TMDL implementation "given serious environmental concerns facing Lake Champlain").

The WLAs in the Lake Champlain TMDL "assume that phosphorus reductions will occur over time." *In re Multiple WWTF Permit Appeals*, slip op. at 24. Specifically, the WLAs for WWTFs "assume future reductions from other sources will occur, and that if these reductions do not occur, then WWTFs can be forced to further decrease their own phosphorus discharges by reducing their WLAs." *Id.* Therefore, to properly analyze whether this underlying assumption (i.e., that reductions from other sources will occur) is still valid, DEC must examine reductions to date from other sectors in its assumptions analysis.

Instead, DEC's analysis in the fact sheets accompanying these draft Permits merely states that the Vermont Agency of Natural Resources has accomplished all Phase 1 Accountability Framework milestones and received affirmative reports from EPA thus far. *See, e.g.*, Fact Sheet for Rutland Permit at 13-14. But the Phase 1 milestones relate to standing up administrative programs, rules, funding, and permitting systems; they do not necessarily equate to reductions from other sources having occurred. A robust assumptions analysis – especially given that more than five years have passed since the issuance of the TMDL and the pressing water pollution problems in the Lake—must include a detailed review of phosphorus reductions that have in fact occurred from other sources beyond the permitted WWTFs to validate the underlying assumption of the WLA.

CLF and VNRC request DEC revise the analysis in these fact sheets to meet the standard established by the Environmental Court in *In re Montpelier*. Without this level of time-specific, site-specific analysis, the WQBELs contained in the permits do not satisfy the consistency requirement in 40 C.F.R. § 122.44(d)(1)(vii)(B).

II. PFAS monitoring should be required in all WWTF permits in Vermont.

Given the public health and environmental dangers posed by PFAS, and the fact that these harmful chemicals are ubiquitous in the waste stream, DEC should require all WWTF permittees to monitor for PFAS and monitor their industrial users' discharges for PFAS.

PFAS chemicals are a threat to human health and the environment because they are (1) toxic in small concentrations; (2) persistent in the environment; (3) bioaccumulative; (4) highly mobile in water; (5) used in hundreds of different industrial and commercial processes and found in a wide variety of consumer products; and (6) a dangerous chemical class comprised of over 8,000 chemicals.

PFAS compounds are used in hundreds of commercial and manufacturing processes and found in thousands of consumer products. They have been used in non-stick cookware, water-repellent clothing, stain resistant fabrics and carpets, cosmetics, firefighting foams, and other products that resist grease, water, and oil.[8] PFAS are toxic to humans in concentrations as small as single digit parts per trillion, or potentially even lower.[9] These chemicals are associated with cancer and have been linked to growth, learning, and behavioral problems in infants and children; fertility and pregnancy problems, including pre-eclampsia; interference with natural human hormones; increased cholesterol; immune system problems; and, interference with liver, thyroid, and pancreatic function.[10] PFAS have been linked to increases in testicular and kidney cancer in human adults.[11] Developing fetuses and newborn babies are particularly sensitive to PFAS chemicals.[12]

Because of their pervasive use in consumer products, PFAS are routinely found in the waste stream. Sampling conducted in late 2019 and early 2020 by the Agency of Natural Resources and industry consultants detected PFAS in every influent and effluent sample collected from nearly two dozen WWTFs in Vermont.[13] PFAS were also detected in all of the sampled WWTFs' sludge specimens.[14] These data align with a recent study by the University of New Hampshire, which found that WWTFs do not effectively remove any of the thousands of known PFAS chemicals from wastewater and emphasized that "[s]horter-chain PFAS were abundant in wastewater effluent, while precursor and longer-chain PFAS dominated in sludge."[15]

Because of the dangers of PFAS chemicals to human and aquatic health and the ways that WWTFs concentrate PFAS chemicals in their effluent, it is critical for WWTFs to monitor for

---

[8] *See Per- and Polyfluoroalkyl Substances (PFAS) and Your Health*, AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, https://www.atsdr.cdc.gov/pfas/overview.html.

[9] U.S. Dep't of Health & Human Serv., Agency for Toxic Substances and Disease Registry, TOXICOLOGICAL PROFILE FOR PERFLUOROALKYLS, AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, at 5–6, https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf; Sharon Lerner, Teflon Toxin Safety Level Should Be 700 Times Lower Than Current EPA Guideline, The Intercept (June 18, 2019), available at https://theintercept.com/2019/06/18/pfoa-pfas-teflon-epa-limit/ (describing how at a national conference on PFAS, the former Director of the U.S. National Institute for Environmental Health Services, Linda Birnbaum, cited to data suggesting the safety threshold for PFOA (a type of PFAS compound) in drinking water should be as low as 0.1 parts per trillion, 700 times lower than the safety level established by EPA).

[10] *Id*.

[11] *Id.* at 6; Vaughn Barry et al., *Perfluorooctanoic Acid (PFOA) Exposures and Incident Cancers among Adults Living Near a Chemical Plant*, 121 ENVTL. HEALTH PERSPECTIVES 1313, 1313 (Nov.–Dec. 2013), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3855514/pdf/ehp.1306615.pdf.

[12] *See* U.S. Envtl. Prot. Agency, DRINKING WATER HEALTH ADVISORY FOR PERFLUOROOCTANOIC ACID (PFOA) 9 (2016), https://www.epa.gov/sites/production/files/2016-05/documents/pfoa_health_advisory_final_508.pdf.

[13] ANR Handout for Senate Natural Resources Committee, (Feb. 14, 2020) at 7-8, available here: https://legislature.vermont.gov/Documents/2020/WorkGroups/Senate%20Natural%20Resources/Eco%20Systems/W~Chuck%20Schwer~PFAS%20State%20Sampling%20Plan~2-14-2020.pdf.

[14] *Id*.

[15] "Fate of long and short chain PFAS, pharmaceuticals, and personal care products in wastewater biosolids" (Adams et al, 2021).

PFAS and identify potential sources by monitoring the discharges of its industrial users. Massachusetts has recently taken an important step in this direction with its draft WWTF General Permit.[16] In the fact sheet supplementing the draft permit, the Massachusetts Department of Environmental Protection stated:

> *Given that PFAS are persistent in the environment and may lead to adverse human health and environmental effects, MassDEP has identified a comprehensive approach for addressing PFAS in wastewater discharges. . . . MassDEP is…concerned about the potential impacts PFAS discharges from wastewater treatment plants may have on downstream drinking water, recreational, and aquatic life uses… To assess whether PFAS discharges from any Facility seeking Permit Authorization under the SWD WWTF GP are occurring and whether they may be contributing to a violation of the narrative toxics criteria, MassDEP is including conditions in the SWD WWTF GP for the permittee to monitor for PFAS and to monitor its Significant Industrial Users' discharges for PFAS.*[17]

Similarly here, Vermont DEC should include conditions in all its WWTF NPDES permits requiring the permittee to monitor for at least the five PFAS regulated by the Secretary of the Agency of Natural Resources[18] and the maximum number of PFAS detectable from standard and modified Environmental Protection Agency laboratory methods. The permittee should also be required to monitor discharges from any industrial users of the facility to identify sources of PFAS. Monitoring should occur frequently (ideally weekly), given the daily fluctuations of WWTF effluent.

We request DEC revise the four draft Permits up for review to include these PFAS monitoring conditions.

III. Climate change is exacerbating CSO issues and DEC has not adequately addressed the impacts of CSOs in the NPDES permit for the Rutland Facility under the VWQS.

Vermont is experiencing dramatic increases in precipitation and significant weather events. These climate-driven changes are leading to greater runoff into our rivers and lakes and to higher incidents of CSOs in WWTFs that have not adequately addressed the CSO problem.

There is no question that CSOs are occurring and will continue to occur at the Rutland facility after the NPDES renewal permit is issued. There is no question about this because the Rutland facility has four CSO outfalls and, by our estimate, at least 60 CSOs have

[16] CLF and VNRC were unable to determine whether this draft permit has been finalized.
[17] Fact sheet, Massachusetts 2021 Draft NPDES General Permit at 8.
[18] PFOA (perfluorooctanoic acid), PFOS (perfluorooctane sulfonic acid), PFHxS (perfluorohexane sulfonic acid), PFHpA (perfluoroheptanoic acid), PFNA (perfluorononanoic acid).

emanated from these outfalls at the Rutland facility in 2021. These CSOs discharge untreated and partially treated waste from these outfalls that violate terms of the NPDES permit for the facility.

Under Vermont law, it is illegal to discharge any substance into waters of the State without a permit. Specifically, 10 V.S.A. § 1259(a) provides:

> *(a) 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 that 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.*

Because DEC knows the Rutland facility will discharge untreated and partially treated waste, these issues must be addressed as part of the NPDES permit for the facility.

Vermont law governing discharge permits requires that such a permit ensure that the discharge will not violate any provision of State or federal law. Specifically, 10 V.S.A. § 1263(c) provides:

> *c) If the Secretary determines that the proposed discharge will not reduce the quality of the receiving waters below the classification established for them and will not violate any applicable provisions of State or federal laws or regulations, he or she shall issue a permit containing terms and conditions as may be necessary to carry out the purposes of this chapter and of applicable federal law. Those terms and conditions may include providing for specific effluent limitations and levels of treatment technology; monitoring, recording, reporting standards; entry and inspection authority for State and federal officials; reporting of new pollutants and substantial changes in volume or character of discharges to waste treatment systems or waters of the State; pretreatment standards before discharge to waste treatment facilities or waters of the State; and toxic effluent standards or prohibitions.*

DEC has not proven how the draft NPDES permit for the Rutland facility will ensure that CSO discharges from that facility will not reduce the quality of the receiving water in a manner that will lower the classification of the Otter Creek or violate the VWQS, as required by 10 V.S.A. § 1263(c). For example, the partially and untreated waste discharged during CSO events can lead to water quality conditions that make it dangerous to human health to swim in the waters. Swimming is a designated use in the Otter Creek. Accordingly, the waste discharged during CSO events may interfere with this use based on the classification of the Otter Creek.

Moreover, the draft NPDES permit for the Rutland facility does not contain conditions that will ensure that discharges of waste during CSO events will not violate the VWQS. With regard to CSOs, the draft NPDES permit requires that the permittee submit an annual

report that documents the permittee's compliance with the minimum controls set forth in the CSO rule. There are no specific provisions in the draft NPDES permit that address the impacts of the discharge of wastes from CSO events on the water quality in the Otter Creek and the use of the Otter Creek by Vermonters.

CLF and VNRC understand that as with other CSOs in Vermont, DEC has issued an order under 10 V.S.A. § 1272 to address and reduce the impacts of CSOs from the Rutland facility. The first 1272 order issued to address CSOs from the Rutland facility was in 2012. It was revised in 2018. Both orders required that the permittee implement projects that will reduce, but not eliminate CSOs, comply with the CSO rule and implement monitoring related to CSO discharges.

While these measures will reduce the impact of CSOs on Otter Creek, they do not ensure that the discharges will not violate the VWQS as required by 10 V.S.A. § 1263(c). Moreover, orders issued under 10 V.S.A. § 1272, generally, are intended to address activities that were not expected to cause a discharge that will violate the VWQS, where ANR needed to intervene to remediate the harm to water quality that the activity caused. As noted herein, CSOs are not unanticipated events where DEC needs a legal mechanism to address harm to water quality caused after the fact. Rather, DEC knows that CSOs will occur at the Rutland facility from discharges that are covered under this draft NPDES permit that is currently under review.

Yet, an order issued under 10 V.S.A. § 1272 is the improper legal mechanism to address discharges from a facility that is undergoing a DEC permit review. Rather, DEC must address the CSO discharges that it knows will occur as part of the NPDES permit for the facility, and in doing so address how the NPDES permit will ensure that the CSO discharges from the Rutland facility that we know will occur will not violate the VWQS.

CLF and VNRC understand that significant changes to the Rutland facility will be required to eliminate CSOs. However, the long-term plan to do so has been under development since at least 2012, when the first 1272 order for the facility was issued, and progress on completing these improvements to the facility cannot be allowed to be delayed in perpetuity. To this end, we request that in responding to these comments DEC outline when it anticipates the CSO discharges will be eliminated or substantially eliminated at the Rutland facility and how American Rescue Plan Act (ARPA) funds and other federal funds that may come to Vermont as part of a federal infrastructure bill will be used to address the CSO discharges from the Rutland facility.

Conclusion

The issuance of new permits for these four WWTFs in the Otter Creek Basin is a critical opportunity for Vermont DEC to address phosphorus and PFAS pollution and directly

address the increasing threats of climate change. For the reasons set forth above, as currently written, these draft Permits fail to rise to the challenges presented by our water quality and climate crises. Accordingly, we request that DEC address the issues identified in these comments.

Sincerely,



Zack Porter
Lake Champlain Lakekeeper
Conservation Law Foundation
zporter@clf.org



Policy and Water Program Director
Vermont Natural Resources Council
jgroveman@vnrc.org

→ Presented at 9/2/21 mtg at Rutland 9/2/21

My name is William Burke and I have resided in Rutland city for 27 years. During that 27 years I served as the local Act 250 District Coordinator- retiring in July 2020. I comment today as a concerned private citizen of Rutland and of the state of Vermont.

I am here to publicly endorse the public comments provided to you by John Brabant of Vermonters for a clean environment and dated July 21, 2020. Since you have apparently accepted that comment, I am assuming that the drafting error on the submission date of "2020" was considered and that the VCE's comments have been accepted as timely.

I am also here to endorse the comments provided in writing to you and dated July 21, 2021 by Mr. Thomas Weiss.

These are comments numbered two and three on your website.

For this public hearing.

I request that you provide a formal written response to both comments.

In 1980 I was a Coast Guard officer and remembered flying over Deer Island outside of Boston harbor and looking down from the helicopter and seeing a dark brown plume measuring at least 300 yards in diameter arising from below the surface of Boston Harbor. That was Boston's version of Rutland's combined sewer overflow. It didn't work in Boston in 1980 any better than it is working in Rutland in the year 2021. It took over $1 billion and a decade of hard work but Boston looked the problem in the face and did The right thing. These years of ARPA funding represent our opportunity to start the difficult and expensive process of upgrading our own antiquated waste water treatment facilities. We owe it to all those upstream Otter Creek residents, not to mention the fish and wildlife who inhabit these waters.

With the infusion of ARPA money into the city of Rutland, I urge the Agency of Natural Resources and the City of Rutland to team up together and to do the hard work necessary to upgrade Rutland's antiquated system. We owe this to our children and future generations of Rutlanders, and to the citizens of the great state of Vermont.

Thank you for the opportunity to comment.

Wburke3@gmail.com

2 Wallace Ave. Rutland 05701

From: Trevien Stanger
To: ANR - WSMD Wastewater
Subject: 3-1285 City of Rutland
Date: Wednesday, May 26, 2021 10:08:23 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good day,

I am writing today to express my concern with Rutland's ongoing problems with CSO's releasing toxicity and pollution into the waters that my family swims in, drinks from, and recreates upon. I find this situation distressing, disturbing, and of very high concern for me as a tax-payer, citizen, and resident of Vermont's side of the Champlain Basin.

If the safeguarding of our waters is already a strain on Rutland's municipal waste-water system, and any further development (more sewers, more impervious surfaces) would add further strain, it seems beyond sensible that no new development permits should be granted until these issues are resolved.

Thank you for your time,

Trevien

From: Sylvia Knight
To: ANR - WSMD Wastewater
Subject: 3-1285 City of Rutland Public Comments
Date: Tuesday, August 31, 2021 9:46:22 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Water is precious for all life, now and for future generations. As we are mostly water ourselves, we are intricately woven into the amazing cycle of water on Earth.

I'm wondering if you are as troubled as I am to learn of huge sewage diversions into Waters of the State --untreated human feces and urine, mixed with industrial poisons (like PFAS), pesticides, pharmaceutical compounds, and gutter pollutants, compounded by cyanobacteria outbreaks and the resulting cyanotoxins.

When water treatment facilities are not upgraded to handle a municipality's needs, stormwater overflows mean that untreated sewage enters our waterways. This contamination of waters of the State means injustice, economic and health inequities, and danger to all during a time of pandemic, which is not over.

Use of 10VSA §1272 Administrative Extensions are not intended to be a long-term means to allow continuance of out-of-date permits, as has occurred in the Otter Creek watershed. They are not a public process, do not address the real problem at hand-- out-of-date facilities unable to meet the current demand—and, most importantly, do not clean up the water. Efforts to hold a public hearing on NPDES permit #3-1285 and to receive public comment are encouraging.

My husband and I live downstream of Rutland's sewage overflows in the Otter Creek, because water in Lake Champlain flows to the north. Living near the confluence of Winooski River with Lake Champlain, my husband and I are just two of tens of thousands of people who depend on treated Lake Champlain water for drinking, cooking, and bathing. We do not have a separate filtration system in our condo. Many depend upon the Lake for recreation and cooling off during hot summer days. Cyanobacterial contamination of beaches and water is an injustice to those who depend upon the Lake for water and recreation.

Peer-reviewed literature on pesticides, endocrine disruption, cyanobacteria, PFAS, and their effects on humans and the community of life alerts us that toxins can now endanger our health at parts per trillion. *We can no longer be complacent about small amounts of various contaminants in water; dilution cannot be depended upon to save us from our pollution.* Current toxicology, regulatory and health systems cannot compensate for the contaminants currently allowed to pollute the waters of the State. The cumulative picture should be a wake-up call.

ANR and Department of Environmental Conservation must not issue any

new permits for additions of pavement or sewage until:

1. Stormwater treatment is expanded to address current demands;

2. Wastewater treatment capacity is expanded to handle the current loads;

3. Wastewater treatment is upgraded to the "limits of technology" to ensure no degradation of downstream drinking water supplies for human health;

4. Drinking water treatment plants are upgraded to protect the public health;

5. Meaningful regulation and enforcement of environmental protections are instituted for industrial agriculture, especially conventional dairy livestock, and reduction of pesticide use.

So, my question: Will Federal funds targeted to Vermont for recovery after COVID be used to accomplish the steps listed above in order to protect water quality? I await your response.

Maintaining our health in the face of COVID variants and other diseases requires that we care for our immune systems, aided by our gut microbiota, which are under constant threat from repeated exposure to toxins in the water and food we consume, even at small amounts. Everyone must assume responsibility for our personal actions, but we do need our state officials to enforce laws and policies to protect the water we depend upon for life.

I support measures recommended by John Brabant of Vermonters for a Clean Environment in his comments of July 21 to Amy Polaczyk.

Thank you for considering my comments.

Sylvia Knight

Earth Community Advocate

13 Claire Pointe Rd

Burlington VT 05408

802-489-5743
Earth Community Advocate & Researcher
Burlington, VT 05408
sknightinvt73@gmail.com
pronouns: she, her

We cannot solve our problems with the same thinking we used when we created them. Albert Einstein.

"We aren't going to have peace on Earth until we recognize the basic fact of the interrelated structure of all reality."

Martin Luther King, Jr.

From: Patti Lancast
To: ANR - WSMD Wastewater
Subject: Comments
Date: Sunday, September 5, 2021 8:17:55 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Thank you for the opportunity to offer comment on this important issue.
We can't, in good conscience, continue to postpone the cost of allowing our environment to repair itself to future generations. The costs to our children and grandchildren will be only that much greater. It's time to pay the cost of our shortsightedness. We can do it. And that must be the choice made by people of good will.
Thanks for listening,
Patti Lancaster
Jack Kennelly
Mendon, VT

RECEIVED
SEP - 9 2021
WsMD

September 8, 2021

To Whom It May Concern,

I attended your meeting of September 2, 2021 by phone. I am very committed to maintaining water quality in our state but especially as it affects the waste water overflow which is going into Lake Champlain. I have been doing water sampling for the Lewis Creek Association and So County River Watch for several years.

It concerns me greatly that your meeting was poorly publicized so that people could have commented prior to September 10, 2021 deadline. In planning future waste water needs and plant construction, it is important to look carefully at the new construction projects both commercial and residential. If the current plants can't control the spills, how will they be able to control the lake pollution from even more units?

I also second Annette Smith's point, from Vermonters for a Clean Environment, that the new facilities will need to have a way to filter out the pharmaceuticals that currently are not addressed.

Clean water is very necessary for all of life. It cannot be ignored or swept under the rug.

Sincerely,
Nancy Bretschneider

CITY OF RUTLAND
DEPARTMENT OF PUBLIC WORKS
RUTLAND, VERMONT

City Hall – 52 Washington St. – Rutland, VT 05701
Mailing Address: P. O. Box 969 – Rutland, VT 05702
Phone: 802-773-1813 Fax: 802-775-3947

James A. Rotondo, P.E.
Commissioner
City Engineer

Ted Gillen, III, EI
Associate City Engineer

Sent via Email

September 9, 2021

Amy Polaczyk, Wastewater Program Manager
Agency of Natural Resources
Department of Environmental Conservation
One National Life Drive, Davis Building 3rd Floor
Montpelier, Vermont, 05620-3522

RE: City of Rutland WWTF
Permit # 3-1285, PIN: RU95-0265, NPDES Number: VT0100871

Dear Ms. Polaczyk,

The Wastewater Plant Chief Operator, Lab Director and I have all reviewed the "draft" permit and are aware of the more stringent standards the plant will be subjected to should the permit be implemented as written. These additional requirements include further effluent testing (whole effluent toxicity, total nitrogen including ammonia nitrogen) and annual constituent monitoring. In addition, the warm weather seasonal sampling period has been increased by nearly two months. Although these requirements create additional work and will incur additional cost, we have not objected to the closer scrutiny. We understand the importance of an efficiently run plant and have been a willing partner in doing what it takes to ensure the discharge from the plant does not exceed permit levels.

I have read the comments submitted to your division from various environmental advocacy groups regarding the draft permit and also attended the recent Public Meeting where additional comments were made. While we accept the new requirements determined necessary by the Wastewater Management Division as detailed in the draft permit, we do not agree with or accept any of the comments and suggestions made during the public comment period. In lieu of responding to each individual statement, I thought it would be more beneficial to comment regarding general themes. Please accept my comments as follows:

Please understand that I too like most other Vermont residents desire clean water and clean air. I also acknowledge that discharges of sewage and/or combined sewage into our waterways are viewed by the general public as undesirable. However, my education training and experience over the past forty-five years in the environmental engineering field have given me a realistic outlook regarding the magnitude and complexity of the current challenge and specifically the amount of time and money it will take to mitigate/eliminate

CSO's in the City of Rutland. I think it is also important to remember that the City of Rutland has found itself in this situation through the same type of typical development that unfolded in countless communities around the country. Prior to the arrival of treatment facilities, all wastewater was discharged directly into waterways. While taking into account where we came from, it is also important to recognize how much progress the City of Rutland has made over the past decades improving the quality of treatment plant discharges.

I believe it is also important to evaluate the operational efficiency of the treatment plant separately from the collection system. The treatment plant consistently maintains a level above 90% removal of pollutants (BOD, TSS and total phosphorus). CSO's are a direct result of stormwater exceeding the capacity of the collection system and treatment plant. The City has a 1272 Order currently in effect that addresses CSO's. CSO discharge points are located within the collection system before the wastewater/stormwater reaches the treatment plant. We believe CSO's should be regulated through the 1272 Order process and not be imported into the treatment plant permit process. The plant and collection system are two very different and distinct components of the overall wastewater system.

The City of Rutland has spent approximately $20M dollars since 1988 in Planning and Construction Projects addressing the CSO issue. The results of our efforts have all been positive. For example the duration of CSO's are continually being reduced. What were typically multi-day events are now usually over within hours. Many stormwater separation and treatment plant expansion projects have taken place. A $1.5M East Creek Force Main Project has just been completed which is comprised of a complete replacement and upgrade of one of the two transmission force mains that run from the River Street Pump Station to the treatment plant. The new pipe is HDPE which has a lower friction factor enabling a small, but significant increase in flow to the treatment plant. Many improvements have also been made to the River Street Pump Station. Upgrades include modernized level and control systems, and updated features in the SCADA system, which will help eliminate human errors that could lead to overflows. This pump station transmits nearly all of the sewage collected within the City to the treatment plant.

With respect to the treatment plant, the City has spent tens of millions of dollars in plant upgrades over the years. Numerous upgrades to equipment control systems and preventative maintenance projects have taken place. A $3.8M Digester Upgrade is currently nearing completion.

In accordance with the City's 1272 Order, the Long Term Control Plan is to be completed by October 30, 2021. A major step was first taken to develop a Hydrologic and Hydraulic Model of the City's combined sewer system. This tool was developed to accurately predict and compare the impact and benefit of various potential projects to reduce CSO's in an efficient and cost effective manner. Taking on this modeling project demonstrates the City's seriousness regarding the mitigation and elimination of CSO's.

Attempting to reduce the number of CSO discharge points is essentially an administrative exercise and does not take into account reality. It is my understanding that CSO5 is a result of chronic sewage backups that created a public health hazard. CSO5 has proven to be an absolute necessity and would cause great harm to the public if it was not allowed to remain in service. Because of the design and nature of the collection system, discharges at this location are currently unavoidable during high intensity storm events.

The notion that the CSO issue can be eliminated in a short period of time is not reasonable or practical. All one needs to do is review the recent timeline of the East Creek Force Main project to observe all the different factors that may have a negative impact on the funding, design, and construction of a project. In my opinion, it will take decades to satisfactorily

mitigate the current CSO discharges. In addition, the City is facing extremely large challenges in the downtown area due to the age and location of its infrastructure. Combined sewers travel beneath buildings and it will be very costly and disruptive when future projects attempt to separate stormwater from them.

Contrary to what may be perceived by the general public, the City does not discharge raw sewage on a regular basis. Combined sewer overflows are typically composed of a mixture of 92% stormwater and 8% sewage. The City has spent nearly $90k installing flow meters and telemetry systems at each CSO outfall location to accurately measure overflow volumes.

Lastly, the idea that no new connections should be allowed within the City until all CSO's are eliminated is punitive, counterproductive and unrealistic for two reasons. The first reason is an economic one. The City of Rutland is a financially struggling community and imposing a moratorium on new connections and developments would cause further harm to the local economy and to the City of Rutland. Stifling tax revenue and consumption fee growth, would essentially be taking away precious funds needed to make investments in treatment plant upgrades and CSO elimination projects. The second reason is a cause-effect argument. CSO's are caused by rainfall, not wastewater. Obviously the City has no control over the frequency, duration or intensity of storm events. Again, it makes no sense to put a moratorium on wastewater connections since rainfall is the culprit. In addition, prohibiting new wastewater connections would have little to no effect on CSO reduction. What does have a big impact on overflows is disconnecting storm drains from the combined sewer. Just within the last seven years, the City has completed two separation projects in the northwest neighborhood which disconnect approximately 100 acres of watershed. I expect that the soon to be finished Long Term Control Plan will list additional separation projects to be performed in the future.

Sincerely,

James Rotondo, P.E.
Commissioner
City Engineer

cc: David Allaire, Mayor

From: Jim McCullough
To: ANR - WSMD Wastewater; Walke, Peter; Greenwood, Kim
Cc: Amy Sheldon; Michael O"Grady
Subject: Public hearing request
Date: Wednesday, July 21, 2021 11:06:40 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good morning All!

I am requesting a public hearing to include the following permits requests for which I understand the comment period has been extended:

PUBLIC NOTICE START DATE	COMMENTS DUE BY	PERMIT NUMBER	APPLICANT / FACILITY NAME	DRAFTS AND SUPPORTING DOCUMENTS	EMAIL COMMENT	
	5/25/2021	7/21/2021	3-1285	City of Rutland	View	Comment on 3-1285
	5/28/2021	7/21/2021	3-1189	Town of Pittsford	View	Comment on 3-1189
	5/24/2021	7/21/2021	3-0365	Wallingford Fire District #1	View	Comment on 3-0365
	7/7/2021	8/6/2021	3-1196	Town of Brandon	View	Comment on 3-1196

My interest:
I am Vice Chair of House Natural Resources, Fish and Wildlife; your committee of jurisdiction. Besides my own water quality concerns and interests, I represent numerous constituents and professionals concerned with VT's potable and swimmable water quality.
Why warranted?
Transparency; your House Committee Nat'l., F&W and the VT public needs a better understanding of how these various permits protect our Public Trust including understanding your complete rational for potential issuance of these permits.

Best,
Jim

Jim McCullough
VT State Representative;
Williston
Conservationist
Legislator

Jeffrey Wennberg

66 Ives Avenue
Rutland, VT 05701
(802) 773-7297

September 8, 2021

Vermont Department of Environmental Conservation
Watershed Management Division
One National Drive, Davis Building 3rd floor
Montpelier, VT 05620-3522

via email

RE: Permit # 3-1285; PIN: RU95-065; NPDES # VT0100871

Dear Ms. Polaczyk:

This letter represents my comments pertaining to the draft NPDES WWTP permit referenced above. Although I have served until recently as Commissioner of Public Works for the City of Rutland, these comments are my own and do not represent those of the City of Rutland.

In general, I support the draft prepared by your office, and I leave to the City any specific concerns or needed amendments they may request. These comments are largely in response to the written comments provided by Vermonters for a Clean Environment, Trevien Stanger, and Thomas Weiss.

Vermonters for a Clean Environment

VCE objects to your general determination that under the revised permit VWQS and federal requirements will be met. In fact, VWQS cannot be met in receiving waters during wet weather with or without WWTP discharges. Pristine streams in areas totally undisturbed by human activity cannot meet Vermont's dry weather standards during wet weather. Holding WWTPs to a standard that cannot be achieved naturally is irrational and indefensible. DEC's tentative determination is correct in that VWQS will be met, or more to the point, will not fail to be met as a result of Rutland's WWTP discharge during dry weather and during the vast majority of wet weather periods.

Rutland's WWTP has operated under a series of 1272 Orders for many years. The prospect for a revised 1272 Order subsequent to the issuance of a new operating permit is required by the CSO Rule, which specifically employs these Orders as the process by which investigation, planning and implementation of remedial measures are implemented. The suggestion by VCE that this is somehow illegal or "operating outside the normal checks and balances" of permitting processes belies VCE's agenda of obstructing pretty much everything. Vermont's regulatory process is replete with opportunities to comment on and object to just about everything that requires government approval. I will leave it to DEC to respond to the accusation that "VANR has for 4 decades relied on using issued 1272 enforcement orders as a means to provide legal cover for illegal discharges…", but the actual function of the Order is to require the development of a plan to address the violation and compel the permittee to comply with the plan. This mechanism recognizes that permittees cannot simply wave a wand and 'fix' these issues

overnight. VCE should be well versed in the time required to bring about major infrastructure projects, given their frequent involvement in regulatory review processes.

I appreciate VCE's acknowledgement that "this essential infrastructure would need to continue operation even where a permit is denied." Given this admission, it is hard to see how denial of the permit, as VCE recommends, would benefit water quality. Operation of the largest WWTP in the state would continue without a permit and without all of the technical requirements contained therein. While too frequent CSOs represent a violation, if a permit was denied all discharges would be a violation, leaving DEC no authority to place regulatory limits on the nature or content of those discharges.

The Clean Water Act has been interpreted to require completion of LTCP and achievement of WQS within two decades of permit issuance. This may be impossible to achieve in some cases but is generally seen as a reasonable timeframe within the law. VCE's proposal to reduce this to three or "not more than five years" is ludicrous, especially in light of the reasonable expectation that VCE or their peers will almost certainly use the regulatory process to challenge portions of the required projects, potentially adding years of delays.

The suggested language

"The operation of the Rutland WWTF, despite the limitations imposed in this Permit, will continue the historic pattern of Vermont Water Quality Standards violations associated with untreated discharges until improvements are made to the Plant that allow for either diversion of separated and treated stormwater from the Plant infrastructure or otherwise provide for increases to storage and treatment capacity that address anticipated high flows that currently result in these violations. The new requirements contained in this Permit will enable the development of these infrastructure and technological improvements which will result in outcomes where no regular or anticipated violating discharges will occur after three years from this Permit's issuance."

has the following problems.

a. "diversion of separated and treated stormwater" will result in degraded water quality as compared with the current mode of operation. This represents a clear violation of VWQS, which state,

§ 29A-106 Discharge Policy

(a)(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.

The City has demonstrated that the treatment of stormwater as wastewater through the combined sewers and excess treatment capacity at the WWTP, even including brief, periodic CSOs, has a lesser impact on water quality than would be the case if the volume of stormwater were released after treatment consistent with Vermont Stormwater Treatment Standards. Therefore, separation for the purpose of eliminating

CSOs would result in greater pollutant loads going to receiving waters and constitute a violation of the VWQS Discharge Policy.[1]

b. "The new requirements contained in this Permit will enable the development of these infrastructure and technological improvements…" Permit requirements do not "enable" infrastructure and technological improvements. Analysis, design, funding, and construction enable improvements, as has been demonstrated by Rutland City's past $20 million investments in CSO abatement, which has dramatically reduced the number of CSO outfalls, and the frequency, duration, and volume of CSO events.

c. "…which will result in outcomes where no regular or anticipated violating discharges will occur after three years from this Permit's issuance." The City has been working on the CSO challenge for 23 years and expended over $20 million to achieve the current state of operation. One hundred percent separation, which would violate VWQS as explained above, would cost about $100 million and take over a decade to accomplish. A more rational approach that is protective of receiving waters is being developed through the LTCP, currently under development. Earlier estimates of the investment necessary for these measures are in the $20 - $30 million range. Even with the decades of improvements and study conducted to date, it will take an additional 5 years (minimum) to plan, design, and permit these measures. Funding of this magnitude may or may not be available, and then there is the time needed for property acquisition and construction. As was experienced with the relatively simple force main replacement, legal, regulatory, and construction delays can add multiple years to project schedules, even in the case of an emergency repair. The notion that CSO abatement can be accomplished with three years is nonsensical, and VCE could unilaterally force years of delays through regulatory opposition. Furthermore, any approach that results in the continued operation of combined sewers, which have demonstrably benefitted water quality, will inevitably result in at least occasional CSO events. As a result, there will *always* be "violating discharges". What VCE fails to appreciate is that their proposed permit amendments would result in greater pollution and lower water quality than the DEC draft.

Trevien Stanger

Mr. Stanger proposes that development should be suspended within the area served by the WWTP "until these [CSO] issues are resolved."

Mr. Stenger may not be aware that rainfall is the cause of CSOs. Development and its attendant increase in wastewater load to the plant neither causes nor increases the incidence or duration of CSOs. Denying new connections would have the effect of driving development to areas not served by the WWTP, which creates a far greater risk of pollution and risk to human health. Furthermore, the funding necessary to address the CSO problem comes in large part from

[1] An analysis comparing Rutland's WWTP phosphorous capture and release for stormwater and CSOs during 2017 has been updated using 2020 data. Here is a summary of those results: Gallons of wastewater treated during 2020 – 1,203,000,000; Gallons of stormwater treated – 316,000,000; Gallons of wastewater released through CSOs – 770,000 (0.06%); Phosphorous removed from treated stormwater – 655 pounds; Phosphorous released due to CSO wastewater bypassing treatment – 24 pounds.

ratepayers. Denying the City the opportunity to expand the ratepayer base would have the self-defeating effect of limiting that funding and delaying implementation of CSO abatement projects.

Finally, Mr. Stenger appears to be unaware that urban stormwater contains essentially the same suite of contaminants, pathogens, and toxins as wastewater, although in different concentrations for some pollutants. Everyone would therefore be advised to avoid contact recreation in waters downstream of urban areas during or shortly after rainfall events. [2]

Thomas Weiss

Mr. Weiss argues that including CSO#5 in the draft permit represents "backsliding." Rutland had previously eliminated four CSO outfall locations and has dramatically reduced the incidence, duration, and volume of CSOs since the 2003 permit was issued, therefore any argument that including CSO#5 represents "backsliding" is made irrespective of the substantial water quality progress that has been achieved. His argument is entirely technical, based upon his definition of the term "condition." CSOs outfalls are created to prevent combined stormwater and wastewater from backing up onto street and into buildings. They are created for the purpose of protecting people from exposure to untreated wastewater. Elimination of CSO#5 would have the effect of increasing risk to human health in clear contradiction to the very purpose of the permit and its requirements. "Backsliding" means negative progress toward completion of the LTCP or impacts on water quality, not one person's definition of "condition."

Mr. Weiss also objects to the provision allowing the permittee to offer an affirmative defense in the event of an upset. This provision correctly recognizes that the nature of WWTP operations cannot eliminate the potential for uncontrollable events to case a violation. The draft permit allows the permittee to argue that the violation occurred through no fault of the operator or permitee. This has been the practice for decades, and the permit provision merely codifies this and clearly states that the burden of proof is on the permittee. Absent this provision or practice, permittees and operators would be subject to enforcement penalties for violations over which they had neither control or responsibility.

Mr. Weiss is unaware that the failed force main has been replaced despite several years of delays caused by frivolous lawsuits, regulations, and construction issues.

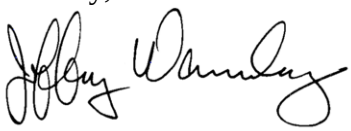
Mr. Weiss makes an interesting argument regarding "incompatible substances." The only comment I have is the permit should not place a requirement on the permittee that is beyond the ability of the permittee to satisfy. Specifically, applying the prohibition to all sources as opposed to "major contributing industry" would be impossible to achieve as long as residential and other small users may legally acquire and dispose of these substances. The pretreatment rule creates a legal framework under which major contributing industries may be regulated, therefore making the proposed permit condition achievable, either by the permittee or the State. Extending this requirement to all users may be within the authority of the State or Federal governments

[2] Data from 1989 shows Vermont's fecal coliform standard (200 colonies per 100 ml) is exceeded in Otter Creek by at least five-fold at all times in wet and dry weather, both upstream and downstream of the WWTP and all 4 CSO outfalls.

through regulation of the availability or use of these substances generally, but is beyond the authority of NPDES permittees.

Thank you for the opportunity to offer these comments.

Sincerely,



Jeffrey Wennberg

From:	Charlotte McGray
To:	ANR - WSMD Wastewater
Subject:	Pleas do not permit Rutland discharge to waterways
Date:	Tuesday, August 31, 2021 9:13:06 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To whom it may concern,

This letter is to protest the discharge of any contaminated water or substances into any body of water in Vermont. I particularly find discharges from Rutland into the stream and discharges into lake Champlain.

This policy has gone on many years. There has been ample time to fix problems and build new plants.

There should be no permit issued that does not have a time line, with hefty fines for fixing discharge problems. This discharging into our lakes and streams MUST stop now!

If I have not sent this letter to the correct entity, please return it with how I can properly protest the permiting of Rutland discharge.

Sincerely,
Charlotte McGray

From:	Bud Haas
To:	ANR - WSMD Wastewater
Subject:	3-1285 City of Rutland PUBLIC COMMENTS
Date:	Thursday, September 2, 2021 11:09:46 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

No new permits should be issued for the Rutland Wastewater Facility until the developers and the City of Rutland can demonstrate sufficient environmental protections are in place. Period.
C. Haas

From: Fearn Lickfield
To: ANR - WSMD Wastewater
Subject: 3-1285 City of Rutland
Date: Friday, September 3, 2021 9:58:38 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
Regarding the Legal Dumping of Human Waste into Otter Creek and Lake Champlain--our recreational and drinking water supply.

Good day,
I am writing today to express my concern with Rutland's ongoing problems with CSO's releasing toxicity and pollution into the waters that my family swims in, drinks from, and recreates upon. I find this situation distressing, disturbing, and of very high concern for me as a tax-payer, citizen, and resident of Vermont's side of the Champlain Basin.

If the safeguarding of our waters is already a strain on Rutland's municipal waste-water system, and any further development (more sewers, more impervious surfaces) would add further strain, it seems beyond sensible that no new development permits should be granted until these issues are resolved.

Thank you for your time,
Fearn

May there be Peace throughout the whole world,
/i
Fearn Lickfield
Fearnessence@gmail.com
https://www.facebook.com/EcstaticDanceVermont/
https://www.facebook.com/fearnessence
www.greenmountaindruidorder.org

The nature of life is passion. Passion is the total sense of being alive in every fiber of your being, a heightened awareness, and the ability to feel at peace and intense at the same time. A sense of your self as a rhythmic flow in harmony with the flow of the universe.

-Azul

Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Davis Building, 3rd Floor
Montpelier, VT 05620-3522
Subject: Rutland City draft NPDES permit 3-1285 and upcoming 1272 order

September 10, 2021

Dear ANR,

As I recommended in the 9/2/2021 Public Hearing regarding renewal of the Rutland WWTP permit, and apparently also recommended in the 5/26/21 letter from Trevien Stanger, a moratorium on new development and connections should be instituted immediately to prevent the worsening of emergency releases of untreated sewage into the Otter Creek and eventually into Lake Champlain. Lake Champlain has seen a record number of cyanobacteria blooms, and beach closures this summer, and the phosphorous from WWTP and CSO's are a significant contributor to this phosphorous loading. Cyanobacteria blooms are capable of producing neurotoxins that contribute to neurological diseases such as ALS. The following link to a study *Cyanobacteria, Cyanotoxins, and Neurodegenerative Diseases: Dangerous Liaisons* available at https://pubmed.ncbi.nlm.nih.gov/34445429/

Others in the Public Meeting stated their concerns about PFAS and other toxic chemicals in Rutland's wastewater. I too am concerned about these as they too are suspected contributors to neurological diseases. As I also stated in the meeting, the City of Rutland should attempt to find the point, and non-point, sources of these contaminants. There are several USEPA, USGS governmental databases that could help in identifying these contributors.

Thanks for the opportunity to attend the Public Meeting and submit written comments.

Best Regards,

Bart Guetti (native Vermonter)
Consultant to Dept of Neurology
Geisel Medical School
1 Rope Ferry Rd
Hanover, NH
03755
Barton.N.Guetti@dartmouth.edu

From:	Andrew Simon
To:	ANR - WSMD Wastewater
Subject:	Wastewater Permit 3-1285
Date:	Tuesday, September 7, 2021 8:23:02 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Sirs/Mesdames,

I am writing to comment on the Wastewater Permit pending for the City of Rutland. It has come to my attention that Rutland, under its current permit dating from 2003, has discharged raw sewage into Lake Champlain or its tributaries hundreds of times in the last six months. If any of this factual data is inaccurate, I apologize. However, the underlying truth is that the current wastewater system in Rutland is not adequate to the task demanded of it by current conditions. I therefore ask that ANR deny the city of Rutland a renewal of its permit until the problems are rectified.

Here in Burlington where I live, we all depend on Lake Champlain for our lives -- for drinking water, for recreation and for accepting our processed wastewater. The system in my own city has its flaws, which we are currently seeking to resolve with significant upgrades to our system. Rutland should not be given a new permit until similar financial commitments are made to protect our water.

Thank you very much for your consideration.

Andrew Simon
54 Locust St.
Burlington, VT 05401