State of Vermont

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
Natural Resources Conservation Council

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PROCEDURE FOR USING METERED SEWAGE FLOWS TO DETERMINE THE UNCOMMITTED RESERVE CAPACITY FOR INDIRECT DISCHARGE SYSTEMS WITH DESIGN FLOWS GREATER THAN 6,500 GPD

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APPLICATION

This procedure only applies to indirect discharges of sewage with a design flow greater than 6,500 gpd permitted under Environmental Protection Rules Chapter 14, Indirect Discharge Rules in accordance with the terms and conditions as defined. Section I has the terms and conditions for secondary treatment systems followed by an indirect discharge, Section II applies to septic tank - recirculating sand filter treatment systems with an indirect discharge, and Section III applies to septic tanks only to a leachfield system.

BACKGROUND

In the past the required design capacity of most wastewater treatment and land based disposal facilities was determined under the 1982 Environmental Protection Rules in accordance with Appendix 7A sewage design flows based on the individual building and their uses which are connected to the system. This practice may result in unused sewage treatment and disposal capacity for some systems that do not generate actual sewage flows equal to the design flows from all connected units. Accordingly, subject to the following preconditions, the Department may allow the use of metered existing sewage flows from the existing units to determine the reserve capacity of the system.

The use of this metered flow policy to create reserve capacity will result in increased sewage flows for disposal by existing systems. In accordance with 10 VSA §1259(e) this increased indirect discharge requires that the applicant obtain an indirect discharge permit by demonstrating to the Secretary that the system will not significantly alter the aquatic biota in the receiving stream.

It is recognized that additional sewage flows accompany an increased risk of impact to the receiving stream. Some of the existing systems were approved for use before there were regulations for spray disposal systems and others were approved under the Environmental Protection Rules which did not involve the evaluation of the impact of the waste disposal practice on the receiving stream.

This procedure will allow a greater use of the full potential of the existing systems upon demonstration that the present flows and reserve capacity has not caused or will not cause a violation of the Water Quality Standards nor significantly alter the aquatic biota of the receiving water body. The approval for the use of this reserve capacity may require additional monitoring conditions as determined by the Secretary to maintain the reliability of the system and more fully and accurately assess the impact of the full discharge on the receiving stream.

This policy does not change or supersede any methods presently used to determined reserve capacity of existing systems which have such methods stated in their approval (i.e. Certificate or IDP). The use of this policy is optional for the permittee; those permittees who do not wish to use this policy are not required to use it. To use this policy, a permittee must demonstrate the system meets all the preconditions.

The uncommitted reserve capacity of a wastewater treatment facility (WWTF) is defined as that capacity which is available and capable of serving new connections. The determination of the uncommitted reserve capacity involves the permitted connected capacity of the system, the existing metered sewage flows with allowance for effluent storage, the reserve capacity, and the committed reserve capacity. The following process will be used to determine the uncommitted reserve capacity.

PRECONDITIONS FOR APPROVAL OF RESERVE CAPACITY BASED ON METERED SEWAGE FLOWS

1. The applicant must obtain an indirect discharge permit by demonstrating to the Secretary with clear and convincing evidence that the system at present flows and proposed reserve capacity has not and will not cause a significant alteration of the aquatic biota.

2. The existing spray disposal field design and use must be in substantial compliance with the 1982 Environmental Protection Rules and must be in full compliance with the maximum application rate of 2 inches per 7 consecutive days and minimum isolation distance to streams of 100 feet. All new systems must be in compliance with the Indirect Discharge Rules.

3. The system must be in compliance with the Ground Water Protection Rule and Strategy.

4. To be eligible for consideration under this procedure the system must have been in continuous operation for at least forty eight (48) months, unless a shorter period is approved by the Department.

5. The permittee must be in substantial compliance with all legal requirements including permit conditions for wastewater treatment and disposal.

6. At the time of determination of the uncommitted reserve capacity the Department may require additional monitoring requirements including effluent monitoring, groundwater monitoring, chemical and biological stream monitoring, and inspections sufficient to make the determination that water quality violations are not occurring and will not occur in the future.

7. The Department may require the permittee to submit a contingency plan, as defined in §14-407(D) of the Indirect Discharge Rules, for review and approval.

I. SECONDARY TREATMENT SYSTEMS FOLLOWED BY INDIRECT DISCHARGE SYSTEM

A. PERMITTED SEWAGE CONNECTED CAPACITY

The permitted connected capacity is that volume of sewage in gallons per day that is permitted to be connected to the treatment or disposal system provided that the applicant can demonstrate compliance with: the Water Quality Standards, the Indirect Discharge Rules, and the criterion of no significant alteration of aquatic biota in the receiving stream for new or expanded systems.

B. EXISTING METERED SEWAGE FLOWS

The existing metered sewage flows for an indirect discharge are determined based on the type of disposal system for the indirect discharge, the type of treatment system preceding the disposal system and consideration of the size and type of construction of effluent storage facilities. The existing metered flows for a system shall consist of one for treatment system and one for the disposal system, with adjustment for inadequate storage facilities, as determined by the following:

1. Type of Treatment System

   a. Secondary Aerated Lagoon:

      For treatment facilities utilizing secondary aerated lagoons (which may be followed with additional treatment such as alum addition and filtration) the existing metered sewage flows shall be the highest average influent flow (in gpd) for any one full month to have

occurred in the previous forty eight (48) months. Aerated lagoons should provide a minimum of 30 days retention time, if not the period considered for the highest average influent flows will be reduced to a period equal to the design retention time of the treatment lagoons which can comply with the effluent limits of 30 mg/l of BOD and 30 mg/l TSS.

b. Mechanical Activated Sludge or Physical/Chemical Treatment Facility:

For treatment facilities utilizing either an activated sludge process or physical/chemical treatment the existing metered sewage flows shall be the highest average influent flow (in gpd) for ten (10) consecutive days to have occurred in the previous forty eight (48) months. These systems must have equalization prior to the mechanical/physical treatment process so that the flows reaching downstream units do not exceed 200% of the design average flow rate in accordance with Section 14-C-301.3 IDRs. The equalization capacity must be sufficient that the average daily flow over the ten day peak period does not exceed the design flow of the treatment facility at the level necessary to meet the required effluent limits.

2. Type of Disposal System

a. Spray Disposal:

For systems utilizing spray disposal the existing metered flows shall be the highest average influent flows (in gpd) for any one full month to have occurred in the previous forty-eight (48) months.

b. Subsurface Disposal (only for systems with tertiary treatment):

For systems with tertiary treatment systems utilizing subsurface disposal without treated effluent storage the existing metered flows shall be the highest average influent flow (in gpd) for any one (1) day to have occurred in the previous forty-eight (48) months. If storage facilities are available for treated effluent, then the period for averaging the daily flows may be expanded from one (1) day dependent upon the volume of treated effluent storage but shall not exceed one full month.

3. Effluent Storage Facilities:

The evaluation of metered sewage flows will include estimates of precipitation and evaporation in the effluent storage facilities and consideration of surface runoff into these facilities. If the storage facilities are not lined with an impermeable liner then the evaluation of metered sewage flows will include allowance for possible ground water seepage into the storage facility. If the effluent storage facilities are not sized to hold the required number of days of design influent volume plus inputs from precipitation, seepage, and runoff, then the metered sewage flow value may be adjusted (increased) to account for this limitation.

4. Variances:

The Secretary or the Secretary's designee reserves the right to either shorten or extend the period of 48 months for the calculation of the existing metered flows, when extenuating circumstances exist.

C. SYSTEM RESERVE CAPACITY

The system reserve capacity shall be calculated by subtracting the existing metered sewage flows as determined in (B) from the permitted connected capacity as determined in (A). The system reserve capacity shall be the lower of the two values determined for the treatment and disposal system reserve capacities. This is the calculated present reserve capacity of the system, a part of which may be already committed to approved projects. Design flow values for new commitments shall be based on the Environmental Protection Rules or values as agreed to by the Department.

D. COMMITTED RESERVE CAPACITY

The committed reserve capacity is the permitted flow for those projects which are approved by the Agency to be connected to the treatment system but have not been in use for previous twelve (12) months. The design flow values for those projects in the committed reserve capacity shall be based on the 1982 Environmental Protection Rules.

1. A project shall remain in the committed reserve capacity until it has been occupied and available for use for a minimum of twelve (12) months, unless the permittee can demonstrate that the units were occupied during a period of peak use then these units could be removed form the committed reserve list before the 12 month period has past.

2. The permittee shall notify the Department in writing when an approved project is available for full occupancy so that it may be removed from the committed reserve capacity after twelve (12) months or after occupancy during a peak period.

E. UNCOMMITTED RESERVE CAPACITY

The uncommitted reserve capacity of the system is that remaining unused permitted connected capacity which may be used for new connections to the permitted system. The uncommitted reserve capacity is determined by subtracting the committed reserve capacity as determined in (D) from the reserve capacity as determined in (C). The resulting value is the uncommitted reserve capacity. Design flow values for new commitments shall be based on the 1982 Environmental Protection Rules.

II. SEPTIC TANK - RECIRCULATING SAND FILTERS - LEACHFIELD

At this time there is no general allowance for expanded use of septic tank - recirculating sand filters leachfield systems except on a case by case basis. Expanded use of septic tank - recirculating sand filter systems may be allowed when the permittee has adequately demonstrated to the Division the reliability and performance capability of the treatment and disposal system. Adequate demonstration of performance and reliability may include consideration of influent volume and strength and degree of effluent treatment reliably received.

III. SEPTIC TANK LEACHFIELD SYSTEMS

At this time there is no general allowance for expanded use of septic tank leachfield systems except on a case by case basis. Expanded use of septic tank systems may be allowed when the permittee demonstrates that the volume of waste flow, its solids and organic strength will not exceed those concentrations contemplated in the initial septic tank leachfield design. The application rates to the leachfield must not exceed those rates allowed in the Environmental Protection Rules Chapter 14 Indirect Discharge Rules.