
APPENDIX D: VERMONT REGULATIONS FOR SOIL-BASED WASTEWATER TREATMENT SYSTEMS

This appendix provides additional details about current design and permitting criteria for decentralized wastewater systems in Vermont. Design and permitting criteria for onsite wastewater systems are contained in two sets of regulations: Chapter 1 of the Environmental Protection Rules (EPRs), Wastewater System and Potable Water Supply Rules, and Chapter 14 of the EPRs, the Indirect Discharge Rules (IDRs). Following is a summary of important rule requirements, as well as information about recent changes in the rules and regulations.

D.1. Wastewater System and Potable Water Supply Rules

The latest revisions to these rules, generally referred to as the “EPRs” or “EPR Chapter 1”, became effective on September 29, 2007. These rules apply to decentralized wastewater dispersal systems with design flows of up to 6,499 gallons per day (gpd) and to sewer connections for any design flow. Important changes were made in many areas of the EPRs, including the implementation of universal jurisdiction and the ‘clean slate’, an overall re-organization of the EPRs to improve readability, and the addition of several alternative technologies.

With the latest revision to the EPRs, wastewater systems and potable water supplies that were previously exempt from state regulation may be required to obtain a permit for activities such as:

- new construction (including single family residences that need sewage dispersal and/or water);
- construction or modification of a wastewater system and/or potable water supply;
- new connections to an existing wastewater system and/or potable water supply;
- subdivision of land; and
- repair or replacement of a failed wastewater system and/or potable water supply.

Vermont is the last state in the nation to implement this kind of permit requirement for all properties statewide. This is often referred to as the state having “universal jurisdiction” over sewage and water.

The legislation includes a “clean slate” exemption that basically grandfathers all buildings, campgrounds, lots, wastewater systems, and potable water supplies that were in existence before January 1, 2007. On or after the January 1, 2007 date, a permit is required when any action covered under these rules is taken (for example, if a property is subdivided or a repair or replacement is needed). If the wastewater system or potable water supply fails, a variance from the rules is available if no fully complying replacement can be

found. (This is often referred to as a “best fix” situation, see Section 3.1.) This provides relief for a number of properties that currently are unmarketable due to non-compliance with the rules.

New, clearer definitions are provided for “failed” water supplies and wastewater systems. This is important because anyone with a failed system now needs a repair permit and also has a defect in their property title.

The EPRs now include general approvals for the use of constructed wetlands and subsurface drip distribution systems for the dispersal of wastewater in addition to the different types of alternative systems allowed through product-specific approval. The general use approvals enable these innovative/alternative components to be used when designing wastewater systems.

Other changes to design requirements that may be useful to landowners in the study area include:

- Reduction in minimum design flow for a single family residence to 2 bedrooms (from 3 bedrooms). This will allow smaller wastewater systems to be built.
- If a primary dispersal system is designed and constructed with pressure distribution that can handle 150% of the design flow, no replacement area is required. This change will enable some lots that were not developable (because they lacked the space and soils needed to site the required identical replacement system) to be developed.
- If a mound system is designed and constructed for 100% of the design flow, no replacement area is required. Designers and engineers have advised that, in nearly every case, failed mounds can be replaced or restored to full function on the original footprint. This also means that properties with mound systems and replacement areas that were permitted before the 2007 rule revision may be able to subdivide or redevelop property that was previously at its maximum wastewater treatment capacity.
- Composting toilets are now specifically allowed in the EPRs, and there is no longer a requirement that a project have enough area to build a septic system even though a composting toilet is proposed. The new rules also allow a smaller leachfield to be used for graywater only when a composting toilet is proposed.
- Language has been added to make clear that water and wastewater systems may not be constructed within a floodway and that construction requirements apply when constructing within the flood plain.

During the 2010 legislative session, House Bill H.779 was passed which creates an obligation on all applicants for a Wastewater System and Potable Water Supply Permit under the EPRs to notify other landowners whenever the isolation distances related to wastewater system and potable water supplies extend onto property not owned by the applicant. The notification requirement was added because of concern that current permit review procedures did not take into account the potential for proposed

wastewater systems and potable water supplies to restrict future development on land not owned by the applicant, due to the requirements for isolation distances between water supplies and soil-based wastewater systems. Further information about the notification requirement is available from DEC's website.

D.1.1. Dispersal System Options

Many options are available for the dispersal of treated wastewater from decentralized systems under the WSPWSRs. Septic tanks and absorption trenches or beds are commonly utilized under favorable site conditions (those having percolation rates of between 1 and 60 minutes per inch and at least 3.5-7 feet to seasonal high groundwater levels and bedrock). At-grade and mound dispersal systems are generally used where minimum site conditions are met, but the site conditions are not favorable enough for the design of subsurface systems. Finally, filtrate effluent dispersal systems may be used when innovative/alternative treatment is a component of the wastewater system. Any of the previously discussed soil-based dispersal systems are permissible as filtrate systems; further, loading rates may be increased and vertical separation distances from bedrock and seasonal high water tables may be reduced if the treated effluent meets certain standards (see Section 3.1 for more detail on wastewater dispersal options).

Spray dispersal (disposing of treated wastewater into native soil by surface application, using sprinklers) may also be used under the WSPWSRs for systems with design flows of up to 6,499 gpd. A continuous impeding layer beneath more permeable soils must underlie a spray dispersal site, and increased isolation distances to surface waters and drinking water sources are required. While these site conditions may be found near the study area, the treated wastewater must be chlorinated before dispersal, and there are significant requirements for restricting access and for seasonal storage of wastewater that may be difficult to meet.

D.2. Indirect Discharge Rules

The 1986 Vermont Legislature established new criteria for larger soil-based wastewater systems, which took into account these larger systems' potential impacts on water quality and aquatic biota (living organisms) in Vermont surface waters. Since January 1990, wastewater treatment systems with design flows of 6,500 gpd or greater have been regulated under Chapter 14 of the EPRs, commonly known as the Indirect Discharge Rules or IDRs. The IDRs are used to permit septic tanks and leach fields, and also treatment plants and spray dispersal systems, which use soil as part of the wastewater treatment process. Following primary and/or secondary treatment, the soil provides final effluent polishing and renovation before it reaches groundwater and, eventually, surface water. This is in contrast to direct discharge systems, which may discharge through a pipe directly to surface waters.

Any flows directed to a cluster wastewater treatment system with design flows of greater than 6,500 gpd that is constructed to support development that was already complete as of May 17, 1986 will likely be considered an “Existing Indirect Discharge” under the IDRs. The DEC is required by statute to issue a permit for existing indirect discharges unless they find that the discharge is causing a violation of the Vermont Water Quality Standards. This application category, however, is limited to indirect discharges already occurring in 1986 and thus may not be suitable if significant new development is desired within the study area.

Under the IDRs, a community wastewater treatment system constructed in the study area to support both existing and new development would be considered a “System with New Indirect Discharge”. If wastewater dispersal sites with design flows of greater than 6,500 gpd are located near one of the unnamed streams on the outskirts of the village, they may be considered “Systems with New Indirect Discharges to Class B Waters” under the IDRs. These systems are required to obtain an indirect discharge permit before construction begins. In order for a permit to be issued, the permittee would be required to demonstrate that the new discharge:

- will not significantly alter the aquatic biota of the receiving waters;
- will not pose more than a negligible risk to public health;
- will be consistent with existing and potential beneficial uses of the waters; and
- will not violate Water Quality Standards.

The permittee must also document compliance with the Aquatic Permitting Criteria, the Reliability Permitting Criteria, and the Public Health Protection Criteria as stated in the IDRs before a permit will be issued. The larger a proposed cluster system is, the more likely it is to trigger additional hydrogeological and biological testing and monitoring requirements. Permits issued under the IDRs typically include effluent monitoring and downgradient groundwater monitoring requirements.

The latest IDRs became effective in April 2003. A General Permit is allowed for systems with design flows of 15,000 gpd or less and that do not require a certified operator to manage the system. Annual inspections and reporting of system failures are required under the General Permit.

The Aquatic Permitting Criteria include sampling for nutrient parameters (including total dissolved phosphorus and nitrate-nitrite nitrogen). The current IDRs allow a range of options that permittees can use to demonstrate compliance with the Aquatic Permitting Criteria for projects with smaller design flows that do not appear to have the potential for significant environmental impact.