

Guidance for the Discharge of Potable Water Treatment Residuals

Potable water treatment systems sequester and concentrate contaminants which then need to be purged from the treatment system and discharged as wastewater. These Potable Water Treatment Residuals (PWTRs) are regulated by the Vermont Department of Environmental Conservation's Drinking Water and Groundwater Protection Division. The Vermont Wastewater System and Potable Water Supply Rules, Indirect Discharge Rules, and Underground Injection Control (UIC) Rules all provide permit exemptions for the wastewater generated from potable water treatment systems designed to reduce or eliminate the following contaminants:

water hardness, properties or constituents on the list of secondary standards in the Vermont Water Supply Rules, radon, radium, uranium, lead, arsenic, nitrate, nitrite, manganese, fluoride (or a combination of these), or bacteria and pathogenic organisms, provided that the treatment system treats all of the water used for drinking, washing, bathing, the preparation of food, and laundering.

A water treatment system that is designed to treat for one or more of the constituents listed above qualifies for this exemption.

*It is important to note that while discharges from a potable water treatment system may be exempt from permitting, they are subject to compliance with the groundwater enforcement standards listed in Appendix 1 of the Vermont Groundwater Protection Rule and Strategy. If PWTRs are to be discharged underground or to the ground surface, groundwater quality monitoring is strongly recommended. Discharge of PWTRs without groundwater monitoring is done at the risk of enforcement action against the owner of the potable water treatment system if the discharge is found to cause violation of the Vermont groundwater enforcement standards at the point of compliance. In most cases, the downgradient property line is considered the point of compliance for underground or ground surface discharges.

The following pages offer guidance on several options for the disposal of PWTRs.

The following is a list of options for the disposal of potable water treatment residuals (PWTRs) in the State of Vermont.

Option 1: Discharge PWTRs into the municipal sanitary sewer.

This option may be available for locations which are connected to or are planned to connect to a municipal sanitary sewer collection line through an existing sanitary sewer service line. Prior to connecting a discharge from your water treatment system to the sanitary sewer, check with your local officials to confirm that the contaminants removed during the water treatment process may be discharged to the wastewater treatment facility, and the discharge is consistent with the local sewer use ordinance, particularly if the wastewater treatment facility produces biosolids. It should be noted that PWTRs often contain arsenic, and depending on concentrations and volume, may result in elevated arsenic in biosolids.

Option 2: Discharge PWTRs into a soil-based wastewater system.

The increase in flow to an on-site soil-based wastewater system as a result of the connection and use of a potable water treatment system is allowed, if the potable water treatment system meets the exemption criteria listed in italics above. However, the contaminants removed and concentrated by the potable water treatment system should be taken into consideration prior to discharging PWTRs to your leachfield to ensure that the PWTRs will not harm your leachfield. It should be noted that waste streams that are high in salts and total dissolved solids can impair the soil microbes that treat wastewater and can lead to soil permeability problems, which may contribute to leachfield failure. Some PWTR constituents may be toxic to soil microbes and may impair the leachfield's ability to biologically treat wastewater. On-site wastewater treatment systems that include an innovative/ alternative (I/A) treatment unit may not be compatible with PWTRs, and it is advised that the manufacturer of the I/A unit be consulted prior to discharge of PWTRs to the wastewater treatment system.

Option 3: Discharge PWTRs into a dedicated on-site dry well or leachfield.

PWTRs can be discharged into a dedicated dry well or leachfield without obtaining a UIC permit, if the potable water treatment system meets the exemption criteria listed in italics above. It is strongly recommended that the drywell be installed in compliance with the isolation distances listed in Table 1: "Recommended PWTR Drywell/ Leach Field Isolation Distances" on page 3 of this document.

Option 4: Discharge PWTRs to the ground surface

PWTRs may be discharged to the ground surface without obtaining a UIC or Indirect Discharge permit, if the potable water treatment system meets the exemption criteria listed in italics above. It is strongly recommended that the same isolation guidelines listed in Table 1 are followed in addition to the following general guidelines:

- The discharge must not be allowed to reach surface waters of the state, which would constitute direct discharge, requiring a permit from the Vermont NPDES program.
- The discharge must not cause soil erosion.
- The discharge must not be allowed to reach a neighboring property.
- The discharge must not be allowed to reach a storm sewer.

Please contact the Vermont Department of Environmental Conservation's Underground Injection Control Program with questions regarding the disposal of potable water treatment residuals.

Table 1: Recommended PWTR Drywell/ Leach Field Isolation Distances

Feature or object	Distance from drywell (ft)
Bottom of dry well/ leachfield to seasonal high groundwater table	minimum 1.5 ft
Foundation, footing, or perimeter of a building located downslope from drywell	75
Foundation, footing, or perimeter of a building located upslope from drywell	25
Property lines	50
Roadways, driveways, parking lots	10
Surface water, normal high water elevation	100
Open stormwater conveyance, treatment or control practice	50
Trees	10
Slopes exceeding 30%	25
Potable water sources in bedrock or confined surficial aquifer (Proposed, existing or permitted)	Recommend isolation zone as calculated in table 9-6 in Chapter 1 of the Environmental Protection Rules
Potable water sources in an unconfined surficial aquifer (Proposed, existing or permitted)	Recommend isolation zone as calculated in table 9-6 in Chapter 1 of the Environmental Protection Rules
Water service lines and water service pipes (pressurized)	25
Water sources that are not a potable water source or public water source	100
Leachfield located upslope of drywell	75
Leachfield located downslope of drywell	35