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Disposal of Water Treatment Backwash at Single Family or Duplex Residences

What Is Drinking Water Treatment Wastewater?

Most of the residential drinking water in New Hampshire is supplied by groundwater. Minerals, hardness (calcium) and other naturally occurring conditions can influence groundwater and affect the quality and taste of drinking water. To improve the quality of drinking water numerous methods of treatment have been developed to remove objectionable properties. **This fact sheet focuses specifically on single family home drinking water treatment systems and the disposal of associated backwash from the filters and other treatment devices.**

Why is Drinking Water Treated and Why is there Wastewater Created in the Process?

Most residential water treatment systems focus on the aesthetic aspects of drinking water (water softening, pH adjustment, removal iron and manganese). Treatment for arsenic is also common in some areas of New Hampshire. Examples of treatment methods in use are reverse osmosis, ozonation, aeration, and ion exchange. In the process of water treatment, filters and treatment media require regular “backwash” to clear out solids and regenerate media. There backwash occur on a schedule and use a variable volume of water that may contain varying amounts of silt, sand, brine, iron, manganese, arsenic, and incidental sludges.

Why are Backwash Wastewaters a Problem?

In the past, water treatment system backwash has been directed into the home septic system for disposal. This is still an option provided that the addition volumes from the discharge can be accommodated or is included into the septic system design. Unfortunately the majority of treatment systems are installed after the home and septic system are built. The additional water to the septic tank and leaching field may cause problems with septic system operation or may overload the existing leaching area and result in flooding. Additionally, some experts believe that the brine from backwashing may have detrimental effects on bacteria growth and may influence the soil's ability to infiltrate water.

What Should Be Done With This Wastewater?

If a water treatment system is anticipated at the home then the discharge may be incorporated into the design of the septic system. However, if the water treatment system is installed after the septic system is built and the leachfield is not large enough to accommodate the backwash discharge then alternate methods of disposal may be used. These alternatives do not require a test pit, plans by a subsurface disposal system designer, fees, formal review, or approval from DES. These alternatives may include mini-dry wells, small leaching pits, or trenches with perforated piping.

What Are The Conditions If Alternative Disposal Is Used?

The treatment systems recommended are those based on actual demand, that is, based on flow of water used. If the backwash is not discharged to an approved septic system and an alternative disposal method is used then the area must be capable of receiving and infiltrating all wastewater without flooding, and the discharge:

- Shall infiltrate on site and shall not cause erosion, siltation; or a discrete runoff.
- Shall not discharge to a surface water or wetland.
- Shall include water treatment system wastewater ONLY. No discharge of black water, gray water, or laundry water to a separate drywell is permitted without DES Subsurface Systems Bureau approval.
- Shall be located in an area to minimize influence on the water supply well, septic system; and any abutting drinking water well such as down gradient area.
- Shall not render groundwater undrinkable on any adjacent properties.

For Additional Information

For more information concerning water treatment wastewater discharges contact the Subsurface Systems Bureau at (603) 271-3711 or visit the DES Groundwater Discharge Permitting and Registration Program webpage at http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw_discharge/index.htm, or call (603) 271-2858.

For additional information and fact sheets, please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or dwgbinfo@des.nh.gov or visit our website at http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw_discharge/index.htm

Note: This fact sheet is accurate as of December 2008. Statutory or regulatory changes or the availability of additional information after this date may render this information inaccurate or incomplete.