

TITLE 18. ENVIRONMENTAL QUALITY
CHAPTER 9. WATER POLLUTION CONTROL
PART E. TYPE 4 GENERAL PERMITS

R18-9-E320. 4.20 General Permit: Disinfection Devices, Less Than 3000 Gallons Per Day Design Flow

- A.** A 4.20 General Permit allows for the use of a disinfection device to reduce the level of harmful organisms in wastewater, provided the wastewater is pretreated to equal or better than the performance criteria in R18-9-E315(B)(1)(a). An applicant may use a disinfection device if:
1. The disinfection device kills the microorganisms by exposing the wastewater to heat, radiation, or a chemical disinfectant.
 2. Some means of disinfection is required before discharge.
 3. A reduction in harmful microorganisms, as represented by the total coliform level, is needed for surface or near surface disposal of the wastewater or reduction of the minimum vertical separation distance specified in R18-9-A312(E) is desired.
- B.** Restrictions.
1. Unless the disinfection device is designed to operate without electricity, an applicant shall not install the device if electricity is not permanently available at the site.
 2. The 4.20 General Permit does not authorize a disinfection device that releases chemical disinfectants or disinfection byproducts harmful to plants or wildlife in the discharge area or causes a violation of an Aquifer Water Quality Standard.
- C.** Performance. An applicant shall ensure that:
1. A fail-safe wastewater control or operational process is incorporated to prevent a release of inadequately treated wastewater;
 2. The performance of a disinfection device meets the level of disinfection needed for the type of disposal and produces effluent that:
 - a. Is nominally free of coliform bacteria;
 - b. Is clear and odorless, and
 - c. Has a dissolved oxygen content of at least 6 milligrams per liter;
- D.** Design requirements. An applicant shall ensure that an on-site wastewater treatment facility with a disposal works designed to discharge to the land surface includes disinfection technology that conforms with the following requirements:
1. Chlorine disinfection.
 - a. Available chlorine is maintained as indicated in the following table:

pH of Wastewater (s.u.)	Required Concentration of Available Chlorine in Wastewater (mg/L)	
	Wastewater to the Disinfection Device Meets a TSS of 30 mg/L and BOD ₅ of 30 mg/L	Wastewater to the Disinfection Device Meets a TSS of 20 mg/L and BOD ₅ of 20 mg/L
6	15 – 30	6 – 10
7	20 – 35	10 – 20
8	30 – 45	20 – 35

- b. The minimum chlorine contact time is 15 minutes for wastewater at 70°F and 30 minutes for wastewater at 50°F, based on a flow equal to four times the daily design flow;
 2. Contact chambers are watertight and made of plastic, fiberglass, or other durable material and are configured to prevent short-circuiting; and
 3. For a device that disinfects by another method other than chlorine disinfection, dose and contact time are determined to reliably produce treated wastewater that is nominally free of coliform bacteria, based on a flow equal to four times the daily design flow.
- E.** Operation and maintenance. A permittee shall ensure that:
1. If the disinfection device relies on the addition of chemicals for disinfection, the device is operated to minimize the discharge of disinfection chemicals while achieving the required level of disinfection; and
 2. The disinfection device is inspected and maintained at least once every three months by a qualified person.