

**TITLE 18. ENVIRONMENTAL QUALITY**  
**CHAPTER 9. DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**ARTICLE 3. AQUIFER PROTECTION PERMITS**  
**PART E. TYPE 4 GENERAL PERMITS**

**R18-9-E301. 4.01 General Permit: Sewage Collection Systems**

D. Design requirements.

5. Lift stations. An applicant shall:

- a. Secure a lift station to prevent tampering and affix on its exterior, or on the nearest vertical object if the lift station is entirely below grade, at least one warning sign that includes the 24-hour emergency phone number of the owner or operator of the collection system;
- b. Protect lift stations from physical damage from a 100-year flood event. An applicant shall not construct a lift station in a floodway;
- c. Lift station wet well design.
  - i. Ensure that the minimum wet well volume in gallons is  $1/4$  of the product of the minimum pump cycle time, in minutes, and the total pump capacity, in gallons per minute;
  - ii. Protect the wet well against corrosion to provide at least a 20-year operational life;
  - iii. Ensure that wet well volume does not allow the sewage retention time to exceed 30 minutes unless the sewage is aerated, chemicals are added to prevent or eliminate hydrogen sulfide formation, or adequate ventilation is provided. Notwithstanding these measures, the applicant shall not allow the septic condition of the sewage to adversely affect downstream collection systems or sewage treatment facility performance;
  - iv. Ensure that excessively high or low levels of sewage in the wet well trigger an audible or visible alarm at the wet well site and at the system control center;
  - v. Ensure that a wet well designed to accommodate more than 5000 gallons per day has a horizontal cross-sectional area of at least 20 square feet; and
  - vi. Ensure that lift stations are designed to prevent odor from emanating beyond the lift station site;
- d. Equip a lift station wet well with at least two pumps. The applicant shall ensure that:
  - i. The pumps are capable of passing a 2.5-inch sphere or are grinder pumps;
  - ii. The lift station is capable of operating at design flow with any one pump out of service; and
  - iii. Piping, valves, and controls are arranged to allow independent operation of each pump;
- e. Not use suction pumps if the sewage lift is more than 15 feet. The applicant shall ensure that other types of pumps are self-priming and that pump water brake horsepower is at least 0.00025 times the product of the required discharge, in gallons per minute, and the required total dynamic head, in feet; and
- f. For lift stations receiving an average flow of more than 10,000 gallons per day, include a standby power source and redundant wastewater level controls in the lift station design that will provide immediate service and remain available for 24 hours per day if the main power source or controls fail.