

WAC 246-290-664 Monitoring for filtered systems. (1) Source coliform monitoring.

(a) The purveyor shall ensure that source water samples of each surface or GWI source are:

(i) Collected before the first point of disinfectant application and before coagulant chemical addition; and

(ii) Analyzed for fecal coliform density in accordance with methods acceptable to the department.

(b) At a minimum, the purveyor shall ensure source samples are collected for fecal coliform analysis at a frequency equal to ten percent of the number of routine coliform samples collected within the distribution system each month under WAC 246-290-300, or once per calendar month, whichever is greater up to a maximum of one sample per day.

(c) With written approval from the department, purveyors of filtered water systems serving less than ten thousand people may collect twenty-six consecutive monthly fecal coliform samples instead of collecting *E. coli* samples every two weeks for twelve months as specified in 40 C.F.R. 141.701 (a)(3)(i). The fecal coliform levels that will trigger *Cryptosporidium* monitoring will be the same as the *E. coli* levels specified in 40 C.F.R. 141.701 (a)(4)(i), (ii), or (iv).

(2) Source turbidity monitoring.

(a) The purveyor using conventional, direct, or in-line filtration shall measure source turbidity at least once per day on a representative sample collected before disinfection and coagulant addition.

(b) Grab sampling or continuous turbidity monitoring and recording may be used to meet the requirement specified in (a) of this subsection.

(c) Purveyors using continuous turbidity monitoring shall record continuous turbidity measurements at equal intervals, at least every four hours, in accordance with a department-approved sampling schedule.

(d) Purveyors using an approved alternative filtration technology may be required to monitor source water turbidity at least once per day on a representative sample as determined by the department.

(3) Filtered water turbidity monitoring.

(a) The purveyor using direct, conventional, or in-line filtration shall:

(i) Continuously monitor turbidity on representative samples from each individual filter unit and from the system's combined filter effluent, prior to clearwell storage;

(ii) For systems serving at least ten thousand people, record continuous turbidity measurements from each individual filter unit at equal intervals of at least every fifteen minutes, and for all systems, from the combined filter effluent at equal intervals of at least every four hours, in accordance with a department-approved sampling schedule;

(iii) Systems serving less than ten thousand people shall record continuous turbidity measurements from each individual filter unit at equal intervals of at least every fifteen minutes;

(iv) Systems serving less than ten thousand people and consisting of two or fewer filters may record continuous turbidity measurements from the combined filter effluent at equal intervals of at least fifteen minutes in lieu of recording individual filter turbidity measurements; and

(v) Conduct monitoring in accordance with the analytical techniques under WAC 246-290-638.

- (b) The purveyor using slow sand or diatomaceous earth filtration shall:
- (i) Continuously monitor turbidity on representative samples from each individual filter unit and from the system's combined filter effluent, prior to clearwell storage;
 - (ii) Record continuous turbidity measurements from the combined filter effluent at equal intervals of at least every four hours in accordance with a department-approved sampling schedule; and
 - (iii) Conduct monitoring in accordance with the analytical techniques under WAC 246-290-638.
- (c) Purveyors using an alternative filtration technology approved under WAC 246-290-676 shall provide monitoring in accordance with the technology-specific approval conditions determined by the department.
- (d) Purveyors using slow sand filtration or an alternative filtration technology may reduce filtered water turbidity monitoring to one grab sample per day with department approval. Reduced turbidity monitoring shall be allowed only where the purveyor demonstrates to the department's satisfaction that a reduction in monitoring will not endanger the health of consumers served by the water system.
- (4) Monitoring the level of inactivation and removal.
- (a) Each day the system is in operation, the purveyor shall determine the total level of inactivation and removal of *Giardia lamblia* cysts, viruses, and *Cryptosporidium* oocysts achieved.
- (b) The purveyor shall determine the total level of inactivation and removal based on:
- (i) *Giardia lamblia* cyst, *Cryptosporidium* oocyst, and virus removal credit granted by the department for filtration; and
 - (ii) Level of inactivation of *Giardia lamblia* cysts and viruses achieved through disinfection.
- (c) At least once per day, purveyors shall monitor the following to determine the level of inactivation achieved through disinfection:
- (i) Temperature of the disinfected water at each residual disinfectant concentration sampling point used for CT calculations; and
 - (ii) If using chlorine, pH of the disinfected water at each chlorine residual disinfectant concentration sampling point used for CT calculations.
- (d) Each day during peak hourly flow (based on historical information), the purveyor shall:
- (i) Determine disinfectant contact time, T, to the point at which C is measured; and
 - (ii) Measure the residual disinfectant concentration, C, of the water at the point for which T is calculated. The C measurement point shall be located before or at the first consumer.
- (e) The department may reduce CT monitoring requirements for purveyors that demonstrate to the department's satisfaction that the required levels of inactivation are consistently exceeded. Reduced CT monitoring shall only be allowed where the purveyor demonstrates to the department's satisfaction that a reduction in monitoring will not endanger the health of consumers.
- (5) Monitoring the residual disinfectant concentration entering the distribution system.
- (a) Systems serving more than thirty-three hundred people per month.
- (i) The purveyor shall continuously monitor and record the residual disinfectant concentration of water entering the distribution system and report the lowest value each day.

(ii) If the continuous monitoring equipment fails, the purveyor shall measure the residual disinfectant concentration on grab samples collected at least every four hours at the entry to the distribution system while the equipment is being repaired or replaced. The purveyor shall have continuous monitoring equipment back online within five working days following failure.

(b) Systems serving thirty-three hundred or less people per month.

(i) The purveyor shall collect grab samples or use continuous monitoring and recording to measure the residual disinfectant concentration entering the distribution system.

(ii) Purveyors of **community** systems choosing to take grab samples shall collect:

(A) Samples at the following minimum frequencies:

<u>Population Served</u>	<u>Number/day</u>
25 - 500	1
501 - 1,000	2
1,001 - 2,500	3
2,501 - 3,300	4

(B) At least one of the grab samples at peak hourly flow; and

(C) The remaining samples evenly spaced over the time the system is disinfecting water that will be delivered to the public.

(iii) Purveyors of **noncommunity** systems choosing to take grab samples shall collect samples for disinfectant residual concentration entering the distribution system as directed by the department.

(iv) When grab samples are collected and the residual disinfectant concentration at the entry to distribution falls below 0.2 mg/L, purveyors shall collect a grab sample every four hours until the residual disinfectant concentration is 0.2 mg/L or more.

(6) Monitoring residual disinfectant concentrations within the distribution system.

(a) The purveyor shall measure the residual disinfectant concentration at representative points within the distribution system on a daily basis or as otherwise approved by the department.

(b) At a minimum, the purveyor shall measure the residual disinfectant concentration within the distribution system at the same time and location that a routine or repeat coliform sample is collected under WAC 246-290-300 (3)(e) through (g).

(c) The purveyor may measure HPC within the distribution system in lieu of measuring the residual disinfectant concentration under this subsection.

[Statutory Authority: RCW 43.20.050 and 70.119A.080. WSR 17-01-062, § 246-290-664, filed 12/14/16, effective 1/14/17. Statutory Authority: RCW 70.119A.180 and 43.20.050. WSR 08-03-061, § 246-290-664, filed 1/14/08, effective 2/14/08. Statutory Authority: RCW 43.20.050 and 70.119A.080. WSR 04-04-056, § 246-290-664, filed 1/30/04, effective 3/1/04. Statutory Authority: RCW 43.20.050 (2) and (3) and 70.119A.080. WSR 03-08-037, § 246-290-664, filed 3/27/03, effective 4/27/03. Statutory Authority: RCW 43.02.050 [43.20.050]. WSR 99-07-021, § 246-290-664, filed 3/9/99, effective 4/9/99. Statutory Authority: RCW 43.20.050. WSR 94-14-001, § 246-290-664, filed 6/22/94, effective 7/23/94; WSR 93-08-011 (Order 352B), § 246-290-664, filed 3/25/93, effective 4/25/93.]