

Group B

Public Water Systems

Chapter 246-291 WAC
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WAC 246-291-001 Purpose and scope.

- (1) The purpose of this rule is to protect the health of consumers using Group B public drinking water supplies. This rule establishes standards for proper design and construction.
- (2) A local board of health may adopt rules under RCW 70.05.060 or RCW 70.46.060 that are no less stringent than this chapter. Local board of health rules may include, but are not limited to:
 - (a) System operations and maintenance;
 - (b) On-going water quality and water use monitoring;
 - (c) Reporting of water quality and water use monitoring data to the local health jurisdiction;
 - (d) Water system inspections or sanitary surveys;
 - (e) Public notification in addition to the minimum requirements under WAC 246-291-360;
 - (f) Requirements that apply at the time of a property transfer;
 - (g) Requirements for building permit applicants that detail what constitutes evidence of an adequate water supply as required for permitting decisions; and
 - (h) Regulation of Group B systems with two or fewer connections.
- (3) This rule is adopted under chapter 43.20 RCW. A purveyor of a Group B system shall comply with this chapter and rules adopted by a local board of health under RCW 70.05.060 or RCW 70.46.060.
- (4) Other statutes relating to this chapter are:
 - (a) Chapter 43.70 RCW, Department of health;
 - (b) Chapter 70.116 RCW, Public water system coordination act of 1977; and
 - (c) Chapter 70.119A RCW, Public water systems -- Penalties and compliance.

WAC 246-291-010 Definitions, abbreviations and acronyms. The definitions in this section apply throughout this chapter unless the context clearly indicates otherwise.

“Acute” – posing an immediate risk to human health.

APWA/WASHDOT – American Public Works Association / Washington State Department of Transportation

AWWA – American Water Works Association

“Board” means the Washington state board of health.

“Certified laboratory” means an analytical lab meeting certification requirements under chapter 246-390 WAC that has received an official scope of accreditation from ecology for one or more drinking water analytical parameters.

“Coliform bacteria” means a group of rod-shaped bacteria found in the vertebrate gastrointestinal tract. The presence of coliform bacteria in water is an indicator of possible fecal contamination.

“Contaminant” means a substance present in drinking water that may adversely affect the health of the consumer or the aesthetic qualities of the water.

“Critical water supply service area” means a geographical area that is characterized by a proliferation of small, inadequate water systems, or by water supply problems which threaten the present or future water quality or reliability of service, as developed under chapter 246-293.

“Cross-connection” means any actual or potential physical connection between a public or the consumer’s water system and any source of non-potable liquid, solid, or gas that could contaminate the potable water supply by backflow.

“Cross-connection control plan” means a document that identifies the procedures the purveyor implements to protect the public water system from contamination from cross-connections.

“Department” means the Washington state department of health.

“Disinfection” means the use of chlorine or other agent or process the department approves for killing or inactivating microbiological organisms, including pathogenic and indicator organisms.

“Distribution system” means all piping components of a public water system that serve to convey water from transmission mains linked to source storage and treatment facilities to the consumer, excluding individual services.

“Drilled well” means a well where the well hole is excavated by mechanical means such as rotary, cable tool, or auger drilling equipment.

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" Dwelling unit " means a structure, or a unit within a structure, with independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation. A dwelling unit includes, but is not limited to:

- (a) Single family residence; or
- (b) Each unit of a multiplex or apartment building.

" Ecology " means Washington State Department of Ecology.

" Equalizing storage " means the volume of storage needed to supplement supply to consumers when the peak hourly demand exceeds the total source pumping capacity.

" Expanding public water system " means a public water system installing additions, extensions, changes, or alterations to their existing source, transmission, storage, or distribution facilities that will enable the system to increase in size its existing service area or its number of approved service connections.

" Fire flow " means the maximum rate and duration of water flow needed to suppress a fire under WAC 246-293-640 or as required under local fire protection authority standards.

" Generator disconnect switch " means an electrical device that physically prevents electrical current from flowing back into the main service line.

" Ground water under the influence of surface water (GWI) " means any water beneath the surface of the ground that the department determines has the following characteristics:

- (a) Occurrence of insects or other macro organisms, algae or large-diameter pathogens such as *Giardia lamblia* or *Cryptosporidium*;
- (b) Experiences significant and relatively rapid shifts in water characteristics, such as turbidity, temperature, conductivity, and pH closely correlating to weather or surface water conditions; and
- (c) Located in a situation where natural conditions cannot prevent the introduction of surface water pathogens into the source at the point of withdrawal.

" Group A public water system " is defined and referenced under WAC 246-290-020.

"Group B public water system" and **"Group B system"** mean a public water system that is not a Group A public water system. A public water system is classified as a Group B system if it serves fewer than fifteen service connections, and:

- (a) Fewer than an average of twenty-five people per day for sixty or more days per year; or,
- (b) An average of twenty-five or more people per day for fewer than sixty days per year provided the system does not serve one thousand or more people for two or more consecutive days.

"Guideline" means a department document assisting a purveyor in meeting a rule requirement.

"Health officer" means the health officer of the county, city-county health department or district, or an authorized representative.

"Hydraulic analysis" means the study of a water system's distribution main and storage network to determine present or future adequacy for provision of service to consumers within the established design parameters for the system under peak flow conditions, including fire flow. The analysis establishes the adequacy of design for distribution system components such as piping, elevated storage, booster stations or similar facilities used to pump and convey water to consumers.

"Local board of health" means the governing body of a county health department under chapter 70.05 RCW, or a health district under chapter 70.46 RCW.

"Local health jurisdiction" means a county health department under chapter 70.05 RCW, city-county health department under chapter 70.08 RCW, or health district under chapter 70.46 RCW.

"Maximum contaminant level (MCL)" means the maximum permissible level of a contaminant in water that a purveyor delivers to any public water system user which is measured at the source prior to entry to the distribution system.

"Maximum day demand (MDD)" means the highest actual or estimated quantity of water that is, or is expected to be, used over a twenty-four hour period, excluding unusual events or emergencies.

mg/L means milligrams per liter (1mg/L = 1 part per million).

ml - milliliter

mm - millimeter

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“Non-residential service connection” means a connection to a water system in which people do not live. It is not a dwelling unit or recreational connection as defined in this section. These connections include, but are not limited to:

- (a) Commercial;
- (b) Industrial;
- (c) Municipal property; or
- (d) Each unit of a hotel or motel.

“Non-residential out-building” means a structure that is not a dwelling unit and is:

- (a) Sited on the same property and associated with a dwelling unit;
- (b) Under the same ownership as the associated dwelling unit; and
- (c) Not used by employees of the property owner.

A non-residential out-building does not count as a separate service connection from the associated single-family dwelling unit.

"Peak hourly demand (PHD)" means the maximum rate of water use, excluding fire flow that can occur within a defined service area over a continuous sixtyminute time period. PHD is typically expressed in gallons per minute (gpm).

"Potable" means water suitable for drinking by the public.

"Potential GWI" means a source identified by the department or local health jurisdiction as possibly under the direct influence of surface water, and includes, but is not limited to a:

- (a) Well that has a screened interval fifty feet or less from the ground surface at the wellhead and is located within two hundred feet of a freshwater surface water body;
- (b) Ranney well;
- (c) Infiltration gallery; or
- (d) Spring.

"Primary maximum contaminant level (MCL)" means a standard based on chronic, nonacute, or acute human health effects.

psi - pounds per square inch

"Public water system" means any system providing water for human consumption through pipes or other constructed conveyances, excluding a system serving only one single-family residence and a system with four or fewer connections all of which serve residences on the same farm. The term includes:

- (a) Collection, treatment, storage, and distribution facilities under control of the purveyor and used primarily in connection with the system; and
- (b) Collection, or pretreatment storage facilities not under the control of the purveyor, and primarily used in connection with the system.

"Purveyor" means an agency, subdivision of the state, municipal corporation, firm, company, mutual or cooperative association, institution, partnership, or person or other entity owning or operating a public water system, or applying to create or expand an existing public water system. Purveyor also means the authorized agents of these entities.

"Recreational connection" means a water service connection to a campsite or recreational vehicle site.

"Same farm" means a parcel of land or series of parcels that are connected by covenants and devoted to the production of livestock or agricultural commodities for commercial purposes and does not qualify as a public water system.

"Sanitary survey" means a review, inspection, and assessment of a public water system by the department or local health jurisdiction.

"Sanitary control area (SCA)" is defined in WAC 246-291-125(5).

"Satellite system management agency (SMA)" means a person or entity approved by the secretary to own or operate more than one public water system on a regional or countywide basis. The water systems owned or operated by an SMA do not need to be physically connected.

"Secondary maximum contaminant level (MCL)" means a standard based on factors other than health effects.

"Service connection" means a connection to a public water system designed to provide potable water. Each dwelling unit, recreational connection, and non-residential connection as defined in this section shall count as a service connection.

"Simple System" means a public water system consisting of a well and only one pressure zone after an above-ground pressure tank, storage tank, or reservoir. A system with one pressure zone is one that an established minimum and maximum pressure range can be maintained without the use of ancillary control equipment (such as booster pumps or pressure reducing valves).

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A Group B system is not considered a simple system if it contains any of the following:

- (a) Treatment for a primary contaminant;
- (b) A variable speed pump;
- (c) Fire flow;
- (d) Special hydraulic considerations; or
- (e) Atmospheric storage where the bottom elevation of the storage reservoir is below ground surface.

"State board of health" and **"board"** mean the board created by RCW 43.20.030.

"Substantial contact" means the elevated degree that a material in contact with water may release leachable contaminants into the water so that levels of these contaminants may be unacceptable with respect to either public health or aesthetic concerns. It should take into consideration the total material/water interface area of exposure, volume of water exposed, length of time water is in contact with the material, and level of public health risk. Examples of water system components that would be considered to be in "substantial contact" with drinking water are storage tank interiors or liners, distribution piping, secondary treatment exchange or adsorption media, or other similar components that would have high potential for contacting the water. Materials associated with components such as valves, meters, pipe fittings, debris screens, gaskets, or similar appurtenances would not be considered to be in substantial contact.

"Surface water" means a body of water open to the atmosphere and subject to surface runoff, including captured rainfall.

"Water right" means a right to make a beneficial use of public waters of the state.

"Well site inspection" means a physical inspection of the area near the existing or proposed well location, and completion of a department or health officer-approved form which identifies the suitability of the site for a public water supply well.

WAC 246-291-020 Applicability.

- (1) The rules of this chapter shall apply to all Group B systems except those systems meeting all of the following:
 - (a) Consists only of distribution or storage facilities and does not have any source or treatment facilities;
 - (b) Obtains all water from, but is not owned by, a public water system where the rules of this chapter or chapter 246-290 WAC apply;

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- (c) Does not sell water directly to any person; and
 - (d) Is not a passenger-conveying carrier in interstate commerce.
- (2) A purveyor of a Group B system meeting all of the conditions under subsection (1) of this section may be required by the department or health officer to comply with the requirements of this chapter if a public health threat exists or is suspected.
- (3) A proposed system shall be classified as a Group A system, and shall meet requirements of chapter 246-290 WAC, if:
- (a) The system design proposes to supply water to another public water system; and
 - (b) The combined number of service connections or total population served meets the definition of a Group A system.

WAC 246-291-025 Bottled water and ice-making facilities.

- (1) Water sources used by facilities that produce bottled water or ice shall meet the requirements under chapter 246-290 WAC.
- (2) In addition to the requirements under chapter 246-290 WAC, the processing of bottled water and ice is regulated by the state department of agriculture under chapter 69.07 RCW, and the United States Food and Drug Administration under CFR 165.110.

WAC 246-291-030 General administration.

- (1) Responsibility for administering this chapter shall remain with the department unless:
 - (a) A local board of health adopts rules or regulations to implement this chapter that are at least as stringent as this chapter; or
 - (b) The department and the health officer for each local health jurisdiction have developed a joint plan of responsibility (JPR). A JPR between the department and local health jurisdiction is an agreement that:
 - (i) Lists the roles and responsibilities for the department and health officer to review and approve water system designs;
 - (ii) Provides for a level of water system supervision necessary to effectively achieve the responsibilities in the JPR;
 - (iii) Is signed by an authorized representative from the department and local health department or district; and
 - (iv) Is reviewed at least once every five years, and updated as needed.

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- (2) The local board of health may adopt rules under RCW 70.05.060 and RCW 70.46.060 that shall be:
- (a) No less stringent, and may be more stringent than this chapter; and
 - (b) Revised, if necessary, within twelve months after the effective date of this chapter. During this time, existing local rules shall remain in effect, except requirements of this chapter that are more stringent than the local board of health rules.
- (3) Group B systems that serve two or fewer service connections are exempt from this chapter, except:
- (a) For systems located in counties with requirements adopted by the local board of health under subsection (2) of this section that apply to Group B systems that serve two or fewer service connections; or
 - (b) For systems with a service connection to facilities or services permitted under one of the following state rules:
 - (i) Food service establishments – under chapter 246-215 WAC;
 - (ii) Private psychiatric and alcoholism hospitals - under chapter 246-322 WAC;
 - (iii) Private alcohol and chemical dependency hospitals - under chapter 246-324 WAC;
 - (iv) Residential treatment facilities - under chapter 246-337 WAC;
 - (v) Temporary worker housing - under chapters 246-358, 246-359, and 296-307 WAC;
 - (vi) Cherry harvest camps - under chapter 246-361 WAC;
 - (vii) Transient accommodations - under chapter 246-360 WAC;
 - (viii) Boarding homes licensing rules - under chapter 388-78A WAC;
 - (ix) Nursing homes - under chapter 388-97 WAC;
 - (x) Minimum licensing requirements for childcare centers - under chapter 170-295 WAC; and
 - (xi) Food inspection - under chapter 16-165 WAC.

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(4) The department may develop guidelines to clarify sections of this chapter as needed.

WAC 246-291-050 Enforcement.

- (1) When a system is out of compliance with this chapter, the department may initiate enforcement actions under RCW 70.119A.030 and RCW 70.119A.040.
- (2) A health officer may initiate enforcement actions as authorized under RCW 70.46.060 and RCW 70.119A.050, and as authorized under local board of health rules.

WAC 246-291-060 Variances.

- (1) A health officer or local board of health, may grant a variance to the standards of this chapter, provided that:
 - (a) The local health jurisdiction has accepted primary responsibility for administering this chapter under WAC 246-291-030;
 - (b) The health officer conditions the approval of a variance to include water quality treatment, monitoring, maintenance and oversight, as necessary, to ensure public health protection; and
 - (c) The health officer obtains sufficient evidence from a purveyor that a proposed Group B system will deliver drinking water that does not exceed a primary MCL under WAC 246-291-170, and will provide an adequate supply of water under WAC 246-291-125(4).
- (2) A request for a variance shall not be considered an adjudicative proceeding as defined in chapter 34.05 RCW.
- (3) A variance shall not be granted for the resident population standard for each dwelling unit, under WAC 246-291-200 (2).
- (4) A variance granted under this section shall lapse five years from the date of issuance for incomplete Group B system construction projects.

WAC 246-291-090 Water system coordination act and satellite management.

- (1) A purveyor shall comply with the applicable coordinated water system plan created under chapter 246-293 WAC if a proposed Group B system is located within the boundaries of a critical water supply service area.

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- (2) The department or health officer shall not approve a design for a new Group B system within the boundaries of a critical water supply service area, unless the local health jurisdiction determines that existing purveyors are unable to provide the service in a timely and reasonable manner, as defined by the applicable coordinated water system plan. If such a determination is made, the department or health officer shall require the new Group B system to be constructed in accordance with the construction standards and specifications in the coordinated water system plan approved for the area.
- (3) A new Group B system must comply with SMA requirements under RCW 70.116.134.

WAC 246-291-120 Design report approval.

- (1) A purveyor shall submit a design report to the department or local health jurisdiction that meets the requirements of this chapter, and receive written department or health officer approval prior to:
 - (a) Installation of a new public water system;
 - (b) Providing service to more than the approved number of service connections; or
 - (c) Use of a new or modified water source.
- (2) An existing Group B system that has not received a prior approval from the department or local health jurisdiction may obtain design approval by fulfilling the requirements of this chapter.
- (3) A design report must contain, at a minimum, all of the following information:
 - (a) Documentation that creation of the Group B system does not conflict with any adopted applicable coordinated water system plan, under chapter 246-293 WAC;
 - (b) Documentation that a purveyor complies with the SMA requirements under RCW 70.116.134;
 - (c) Groundwater source approval, under WAC 246-291-125;
 - (d) Water system planning requirements under WAC 246-291-140 (1), and a draft of the informational notice to the property title as required under WAC 246-291-140 (2);
 - (e) A water system design, under WAC 246-291-200, including, but not limited to:
 - (i) Drawings of each project component, including location, orientation and size;
 - (ii) Material specifications for each project component;
 - (iii) Construction specifications and assembly techniques;

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- (iv) Testing criteria and procedures; and
 - (v) Specific disinfection procedures that comply with requirements under WAC 246-291-220.
- (4) The design report shall be prepared by a professional engineer that meets the following requirements:
- (a) Is licensed in the state of Washington under chapter 196-23 WAC;
 - (b) Has specific expertise regarding design, operation, and maintenance of public water systems; and
 - (c) All documents shall bear the engineer's seal and signature as required under chapter 196-23 WAC.
- (5) Exceptions to the professional engineer requirement are limited to Group B systems that:
- (a) Meet the definition of a simple system;
 - (b) Serve fewer than ten service connections; and
 - (c) Are located in counties in which the local health jurisdiction has accepted primary responsibility under a JPR, or the local board of health has adopted rules under WAC 246-291-030, that provide for an exception to the professional engineering requirement.
- (6) A purveyor shall submit a "Construction Completion Report for Public Water System Projects" to the department or health officer on a form approved by the department or health officer within sixty days of completion of construction, and before use of any approved facility. The form shall:
- (a) Be signed by a professional engineer, unless the project is approved as a simple system accepted under conditions in subsection 5 of this section;
 - (b) Include a statement that the project is constructed and completed according to the design report requirements under this chapter; and
 - (c) Include a statement that the installation, testing, and disinfection of the system are completed according to this chapter.
- (7) A purveyor shall meet the requirements of this section before the use of the water system for any completed project.
- (8) The department or health officer may approve design reports that reflect good engineering practice such as those found in the department guideline titled, "Group B Water System Design Guidelines."

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- (9) A purveyor shall complete construction of work described in an approved design report within five years of the date of departmental or local health jurisdiction design report approval, unless the department or local health jurisdiction determines a need to withdraw the approval sooner.
- (10) All design changes, except for minor field revisions, must be submitted to and approved by the department or health officer in writing.

WAC 246-291-125 Groundwater source approval.

(1) General requirements.

- (a) A purveyor shall obtain drinking water from the highest quality source feasible.
- (b) All permanent source(s) submitted for design approval must be physically connected to the distribution system and be either:
- (i) A drilled well(s) constructed in accordance with chapter 173-160 WAC; or
 - (ii) An intertie with an approved public water system operating in compliance with chapters 246-290 WAC or 246-291 WAC.
- (c) All source(s) submitted to the department or local health jurisdiction for design approval must conform to water quality standards under WAC 246-291-170. The source:
- (i) Must not contain coliform bacteria;
 - (ii) Must not exceed a primary MCL under WAC 246-291-170; and
 - (iii) If directed by the department or local health officer to conduct additional monitoring as required under WAC 246-291-170(8), the source must not exceed a primary MCL under WAC 246-290-310.
- (d) The department or health officer shall not approve a design for a new or modified source that:
- (i) Meets the definition of GWI; or
 - (ii) Meets the definition of a potential GWI, until a hydrogeologic evaluation is completed by a licensed hydrogeologist or engineer that determines the source is not GWI and is not in hydraulic continuity with surface water. All testing and evaluation required to make a GWI determination must be completed before the department or local health officer will review the Group B design report.

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- (e) Before developing or modifying a source, a purveyor shall contact the department or local health jurisdiction to identify any additional requirements.
- (2) A purveyor shall not use a new source or modify an existing source as a drinking water supply without first obtaining department or health officer design approval.
- (3) To obtain source approval for the use of a new or modified source, a purveyor shall provide a copy of the following to the department or health officer:
 - (a) The water right permit, if required, for the source, quantity, type, and place of use;
 - (b) A copy of the water well report (drilling log);
 - (c) A copy of the well site inspection report form completed by the department or local health jurisdiction, or designee;
 - (d) A map showing the project location and vicinity including a six hundred foot radius around the well site designating the preliminary short term groundwater contribution area and one hundred foot sanitary control area, as described in subsection (5) of this section;
 - (e) A map depicting topography, distances to well from existing property lines, buildings, potential sources of contamination within the six hundred foot radius around the well, and any other natural or man-made features affecting the quality or quantity of water;
 - (f) Copies of the recorded legal documents for the sanitary control area;
 - (g) Results from an initial analysis from a certified laboratory of raw source water quality, including the following analyses at a minimum:
 - (i) Coliform bacteria;
 - (ii) Inorganic chemical and physical parameters in WAC 246-291-170 Tables 2, 3 and 4;
 - (iii) Analysis for other contaminants, as directed by the department or health officer in areas where it determines that other contamination may be present.
 - (h) A purveyor shall provide well source development data establishing source capacity to the department or health officer. Data must include:
 - (i) Static water level;
 - (ii) Sustainable yield;
 - (iii) Drawdown;

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- (iv) Recovery rate; and
 - (v) Duration of pumping.
 - (i) The department or health officer may require additional pump testing in locations where there are water resource limitations or known seasonal groundwater fluctuations that may affect future reliability.
- (4) Source capacity.
- (a) Sources for Group B systems with service connections to dwelling units shall be pump tested to determine whether the well(s) and aquifer are capable of reliably supplying water meeting the minimum requirements in Table 1 of this section.
 - (b) Sources for Group B systems with non-residential service connections, or those that have a mixture of residential and non-residential service connections, shall be pump tested to determine whether the well(s) and aquifer are capable of supplying water at the rate required to provide the water volume determined by the system design.
 - (c) Where a locally adopted watershed plan or ecology watershed rule establishes a higher MDD water supply requirement, the higher value shall be used to assess the adequacy of the source of supply.
 - (d) Water use limitations established in locally-adopted watershed plans or ecology watershed rules shall not affect the sizing or design of a Group B system.

Table 1
Minimum source capacity and minimum MDD

County	Gallons per day per dwelling unit
Clallam, Clark, Cowlitz, Grays Harbor, Island, Jefferson, King, Kitsap, Lewis, Mason, Pacific, Pierce, San Juan, Skamania, Skagit, Snohomish, Thurston, Wahkiakum and Whatcom, , ,	750
Adams, Asotin, Benton, Chelan, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Kittitas, Klickitat, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman, and Yakima	1,250

- (5) Sanitary control area (SCA).
- (a) A purveyor shall establish an SCA around all sources to protect the source from existing and potential sources of contamination.

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- (b) The SCA must have a minimum radius of one hundred feet, unless engineering justification submitted by a licensed professional engineer to the department or health officer supports a smaller area. The justification must address geological and hydrological data, well construction details, and other relevant factors necessary to ensure adequate sanitary control.
- (c) The department or health officer may require a larger SCA if geological and hydrological data support such a decision.
- (d) A purveyor shall own the SCA, or the purveyor shall have the right to exercise complete sanitary control of the land through other legal provisions.
- (e) A purveyor shall record a restrictive covenant to the title of each property that comprises the SCA to protect the SCA in perpetuity.

WAC 246-291-140 Water system planning and disclosure requirements.

- (1) A purveyor creating a new or expanding Group B system shall complete the following water system planning elements and submit as a part of the design report, under WAC 246-291-120:
 - (a) Description of system management and ownership;
 - (b) Service area and identification of existing and proposed major facilities;
 - (c) Maximum number of service connections the system can safely and reliably supply;
 - (d) Relationship and compatibility with other locally-adopted plans;
 - (e) Description of how much revenue is needed to operate and maintain the system, and a plan to meet revenue needs;
 - (f) A cross-connection control plan if any existing cross-connections are identified;
 - (g) Identify security measures to be provided to assure the water source, water storage facilities, and the distribution system are under the strict control of the purveyor;
 - (h) For sources with a well pump test showing a yield of 5.0 gpm or less, the design shall include a contingency plan describing short- and long-term measures to restore an adequate water supply in the event the well(s) cannot provide an adequate supply of water.
 - (i) Identify the procedures that will be implemented to notify consumers of any sample results that indicate the presence of *E. coli*, nitrate at a concentration of greater than 10 ppm, or when a circumstance exists that poses a threat of acute contamination.

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- (2) A purveyor shall record the following information on each customer's property title:
 - (a) The name of the water system and its public water system identification number;
 - (b) System owner name and contact information;
 - (c) The following statement, "This property is served by a Group B public water system that had a system design approval under chapter 246-291 WAC";
 - (d) The parcel numbers to be served by the Group B system;
 - (e) If the system is designed and constructed to provide fire suppression;
 - (f) A copy of any variances granted under WAC 246-291-060 to the Group B system;
 - (g) If service connections are metered or not;
 - (h) Indication if the purveyor intends to monitor the system for contaminants, how often monitoring will occur, and how the users of the system will be notified of the results;
 - (i) Contact information for the approving authority (department or local health jurisdiction);
 - (j) Source treatment provided for any contaminants that exceed secondary MCLs;
 - (k) How to obtain a copy of the systems' water users agreement, if one exists; and
 - (l) Other information, as directed by the department or local health officer.

WAC 246-291-170 Water quality requirements.

- (1) General water quality sampling requirements. All samples collected under this section must be:
 - (a) Collected without chlorine, ultraviolet light, ozone, or other disinfectant in use to treat the source;
 - (b) Collected after the well has been pumped sufficiently long to allow for collection of a representative sample of the aquifer; and
 - (c) Analyzed by a certified laboratory.
- (2) To meet the requirements for design approval for a new or modified source under WAC 246-291-125, a purveyor shall obtain, at a minimum, the results from two raw source water samples analyzed for coliform bacteria, that are determined to be satisfactory.

- (3) When an analysis documents a presence of coliform bacteria, a purveyor shall do the following in order:
- (a) Request that the certified laboratory analyze the coliform bacteria sample for *E. col*;
 - (b) Disinfect the source using procedures under WAC 246-291-220; and
 - (c) Collect two repeat samples under the conditions outlined in subsection (1) of this section.
- (4) The department or health officer shall not approve the proposed source if a repeat coliform bacteria sample, collected under subsection (3) of this section, contains a presence of coliform.
- (5) To meet the requirements for design approval for a new or modified source under WAC 246-291-125, a purveyor shall obtain, at a minimum, the results from one raw source water sample analyzed for the inorganic chemical and physical parameters in Tables 2, 3 and 4 of this section.
- (6) When any analysis exceeds a primary MCL in Table 2 of this section, a purveyor shall collect a confirmation raw source water sample and have the sample analyzed for each parameter that exceeded the MCL in the initial sample. If the average concentration from all samples exceeds a primary MCL in Table 2 of this section, the department or health officer shall not approve the proposed source.
- (7) When an analysis exceeds a secondary MCL in Tables 3 and 4 of this section, a purveyor shall include treatment in the system design under WAC 246-291-120 so that the drinking water does not exceed the secondary MCL when delivered to consumers.
- (8) In areas known, or suspected to have contaminants of public health concern, the department or health officer may require a purveyor to submit water samples to test for other contaminants not in Tables 2, 3 or 4 of this section. When any analysis exceeds a primary MCL under WAC 246-290-310, a purveyor shall collect a confirmation sample and have the sample analyzed for each parameter that exceeded the MCL in the initial sample. If the average concentration from all samples exceeds a primary MCL, the department or health officer shall not approve the proposed source.

Table 2
PRIMARY INORGANIC CHEMICAL CONTAMINANTS

Substance	MCLs (mg/L)
Antimony (Sb)	0.006
Arsenic (As)	0.010
Barium (Ba)	2.0
Beryllium (Be)	0.004
Cadmium (Cd)	0.005
Chromium (Cr)	0.1
Cyanide (HCN)	0.2
Fluoride (F)	4.0
Mercury (Hg)	0.002
Nickel (Ni)	0.1
Nitrate (as N)	10.0
Nitrite (as N)	1.0
Selenium (Se)	0.05
Thallium (Tl)	0.002

Table 3
SECONDARY INORGANIC CHEMICAL CONTAMINANTS

Substance	MCLs (mg/L)
Chloride (Cl)	250.0
Fluoride (F)	2.0
Iron (Fe)	0.3
Manganese (Mn)	0.05
Silver (Ag)	0.1
Sulfate (SO ₄)	250.0
Zinc (Zn)	5.0

Table 4
SECONDARY PHYSICAL CHARACTERISTICS

Substance	MCLs
Color	15 Color Units
Specific Conductivity	700 umhos/cm
Total Dissolved Solids (TDS)	500 mg/L

WAC 246-291-200 Design standards.

- (1) A purveyor of a new or expanding Group B system shall use good engineering practices in the hydraulic analysis and design of a public water system, such as those found in the department guideline titled, “Group B Water System Design Guidelines.”
- (2) A purveyor of a new or expanding Group B system designed to supply one or more dwelling units shall:
 - (a) Calculate residential population by using an estimate that shall be no less than the Office of Financial Management (OFM) estimates of average household size under RCW 43.62.020 for the county in which the water system is proposed; and
 - (b) Apply full-time occupancy for each dwelling unit.
- (3) A purveyor shall demonstrate that the source(s) of supply shall be capable of supplying at least the maximum day demand (MDD) to consumers through pipes or other constructed conveyances:
 - (a) For systems with service connections to dwelling units, the MDD used in the design of a Group B system must not be less than as shown in WAC 246-291-125 Table 1 for the specific county in which the system is proposed.
 - (b) Where a locally-adopted watershed plan or ecology watershed rule adopted under Title 173 WAC establishes a higher MDD per dwelling unit water supply requirement, the purveyor shall apply the higher value to the design of the water system.
 - (c) For systems with non-residential service connections, or a mixture of residential and non-residential connections, the engineer or system designer shall refer to Table 1 for the residential MDD, and shall estimate the MDD for the non-residential MDD.
 - (d) Water use limitations established in locally-adopted watershed plans or ecology watershed rules under Title 173 WAC shall not affect the sizing or design of a Group B system.

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- (4) A new or expanding Group B system must be designed with the capacity to deliver the peak hourly demand PHD at 30 psi (210 kPa) under PHD flow conditions measured at all existing and proposed service meters, if installed, or along property lines adjacent to distribution mains if no meter exists under the following conditions:
 - (a) When all equalizing storage has been depleted, if the system is designed to supply PHD in part with equalizing storage; and
 - (b) At the source “pump-on” pressure setting if the system is designed to supply PHD without any equalizing storage
- (5) If the design PHD exceeds the total source pumping capacity, then sufficient equalizing storage must be provided.
- (6) The total volume of atmospheric and pressurized storage must not exceed the volume equivalent of five days of the average day demand of the water system. Average day demand is measured as the total volume of water produced from all sources of supply over a calendar year divided by three hundred sixty-five.
- (7) The minimum design flow and duration required for fire flow and fire suppression storage, if provided, shall be determined by the local fire protection authority, or as required under chapter 246-293 WAC for systems within the boundaries of a designated critical water supply service area. Fire suppression storage is the volume of stored water available during fire suppression activities to satisfy minimum pressure requirements per WAC 246-290-230.
- (8) In the design of a new or expanding Group B system that does not have to comply with minimum fire flow standards, a purveyor shall coordinate with the local fire protection authority to ensure that any hydrants on the system do not create adverse pressure problems within the water system as a result of expected fire suppression activities.
- (9) If fire flow is provided, the distribution system must be designed to provide the maximum day demand for the entire system and the required fire flow at a pressure of at least 20 psi (140 kPa) at all points throughout the distribution system under the condition where the designed volume of fire suppression and equalizing storage has been depleted.
- (10) The Group B system design must contain a water meter that measures the water use of the entire system (totalizing source meter) and a source sample tap.
- (11) A purveyor shall not establish a connection between a Group B system and a source of water not approved by the department or health officer.
- (12) A purveyor shall equip a new or expanding Group B system with a generator disconnect switch.

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(13) A purveyor shall ensure that generally accepted industry standards and practices are used in the elimination or control of all cross-connections, such as:

(a) *Manual of Cross-Connection Control*, published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California (USC Manual), Tenth Edition, October 2009; and

(b) Cross- Connection Control Manual, Accepted Procedure and Practice, published by the Pacific Northwest Section of the American Water Works Association (1995).

(14) A pitless unit, pitless adaptor, and vented sanitary well cap shall conform with the product, material, installation, and testing standards established by the Water Systems Council (WSC) for PAS-97(04).

WAC 246-291-205 Drinking water materials and additives

(1) In the design of a new or expanding Group B water system, all materials shall conform to the ANSI/NSF Standard 61 if in substantial contact with potable water supplies.

(2) Any chemicals specified for use in the design of secondary treatment, with the exception of commercially retailed hypochlorite compounds such as unscented Clorox, Purex, etc., shall comply with ANSI/NSF Standard 60. The design dosage shall not exceed the maximum application dosage recommended for the product as certified by the ANSI/NSF Standard 60.

(3) The specification for pipes, pipe fittings, fittings, fixtures, solder, or flux used in the design of a new or expanding Group B public water system shall be lead-free. Within the context of this section, lead-free shall mean:

(a) No more than eight percent lead in pipes and pipe fittings;

(b) No more than two-tenths of one percent lead in solder and flux; and

(c) Fittings and fixtures that are in compliance with standards established in accordance with 42 USC 300g-6(e).

WAC 246-291-210 Distribution systems.

(1) Finished water storage facilities shall be designed to:

(a) Prevent entry by birds, animals, insects, excessive dust, and other potential sources of external contamination;

(b) Include provisions for:

- (i) A weathertight roof;
- (ii) A lockable access hatch;
- (iii) A screened roof vent;
- (iv) An overflow pipe with atmospheric discharge or other suitable means to prevent a cross-connection;
- (v) Sample tap;
- (vi) A drain to daylight, or an approved alternative that is adequate to protect against cross-connection;
- (vii) A provision for tank isolation in order to perform maintenance procedures; and
- (viii) Other appurtenances appropriate to the protection of stored water from contamination.

(c) Be above normal ground surface if possible; and

(d) If the bottom elevation of a storage reservoir must be below normal ground surface:

- (i) The storage reservoir must be placed above the groundwater table; and
- (ii) The top of a partially buried storage structure must not be less than two feet above normal ground surface.

(2) Systems designed to supply fire hydrants shall have a minimum distribution main size of six inches (150 mm) supplying each hydrant.

(3) A purveyor shall not design a Group B system with individual service booster pumps needed to comply with the requirements under WAC 246-291-200.

WAC 246-291-220 Disinfection of system facilities. No portion of a Group B system containing potable water shall be put into service until the facility has been effectively disinfected as follows:

(1) The water system disinfection procedure(s) to be referenced in the design under WAC 246-291-120 shall conform to the AWWA, APWA/WASHDOT, or other standards acceptable to the department or local health jurisdiction:

(a) Refer to AWWA C651-05 or APWA/WASHDOT (2010 revision) for water main disinfection.

(b) Refer to AWWA C652-02 for reservoir disinfection.

(c) Refer to AWWA C654-03 for well disinfection.

(2) A purveyor constructing new system facilities shall not supply drinking water to the consumer until coliform bacteria samples have been analyzed by a certified laboratory and have been determined to be satisfactory. All samples collected must be:

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- (a) Collected when residual disinfectant is no longer present, and no other treatment is being used;
- (b) Collected after the well has been pumped sufficiently long to allow for collection of a representative sample of the aquifer; and
- (c) Analyzed by a certified laboratory.

WAC 246-291-250 Continuity of service.

A purveyor shall notify consumers in writing at least one year prior to ending water system operation. A purveyor shall provide a copy of the written notice to the approving authority (department or local health jurisdiction).

WAC 246-291-280 Adequacy of existing systems.

- (1) If a purveyor of an existing Group B water system without design approval cannot attain full compliance with the requirements of this chapter, the health officer or local permitting authority may recognize the adequacy of the existing water system to serve existing connections without the purveyor obtaining a design approval of the water system.
- (2) Without design approval meeting all the requirements under this chapter, a Group B system created before the effective date of this chapter may be considered adequate for approvals for service to existing or replacement structures needing potable water.
- (3) Without design approval meeting all requirements under this chapter, a Group B system:
 - (a) Shall not be considered adequate to satisfy a request to a new service connection needing potable water; and
 - (b) Shall not be considered adequate to satisfy a request for a new use of an existing service connection if that use is determined by the local permitting authority to require approved public water supply.
- (4) The minimum standards for determining the adequacy of the existing system without design approval shall be a water system that:
 - (a) Has a source that meets well construction standards, under chapter 173-160 WAC;
 - (b) Does not have a source of contamination in the sanitary control area that could cause a public health risk, under WAC 246-291-125(5), documented in a well site inspection;
 - (c) Meets all water quality standards under WAC 246-291-170; and

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- (d) Has the physical capacity for all existing connections, documented by a minimum 20 psi pressure at all connections under maximum design demand.
- (5) The minimum requirements in this section do not limit the health officer or local permitting authority from adding requirements for determining the adequacy of an existing unapproved water system.
- (6) A Group B system with a department or local health officer design approval prior to the effective date of this rule may serve new service connections even if all the requirements of this chapter are not met, provided that:
 - (a) The expanded use is consistent the Group B system design approval;
 - (b) The expanded use does not exceed the number of approved service connections; and
 - (c) The purveyor complies with all locally-adopted requirements.

WAC 246-291-300 General monitoring requirements.

- (1) The department or health officer may require water quality monitoring when it determines a significant public health risk exists or is suspected due to contamination in the water system, or if the source may be vulnerable to contamination.
- (2) The department may develop guidance for recommended Group B system operations and maintenance, design and operation of treatment, disinfection and testing after repairs or replacement, water quality monitoring, water use monitoring, and periodic inspections.

WAC 246-291-360 Public notification.

- (1) A purveyor shall notify all system consumers in writing within twenty-four hours when the purveyor obtains:
 - (a) A certified laboratory analysis from a water quality sample that indicates a presence of *E. coli*;
 - (b) A certified laboratory analysis from a water quality sample that indicates nitrate at a concentration above 10 ppm; or
 - (c) When circumstances pose a threat of acute contamination.
- (2) The notification must include the following information:
 - (a) A description of the problem;
 - (b) What the purveyor is doing to resolve the problem;

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- (c) What the consumers should do to protect their health, including whether alternative water supplies should be used;
 - (d) When the purveyor expects the problem to be resolved; and
 - (e) Water system contact information, including address, phone number, and if available, an e-mail address.
- (3) Sample public notification templates may be available from the internet on the department's web page.

WAC 246-291-370 Severability.

If any provision of this chapter or its application to any person or circumstances is held invalid, the remainder of this chapter, or the application of the provision to other persons or circumstances, shall not be affected.