PROPOSED RULE MAKING

CR-102 (June 2004)
(Implements RCW 34.05.320)
Do **NOT** use for expedited rule making

Agency: Department of Health

☒ **Preproposal Statement of Inquiry was filed as WSR** 07-24-072 **; or**
☐ **Expedited Rule Making--Proposed notice was filed as WSR _ ; or**
☐ **Proposal is exempt under RCW 34.05.310(4).**

☒ **Original Notice**
☐ **Supplemental Notice to WSR**
☐ **Continuance of WSR**

Title of rule and other identifying information: (Describe Subject)
Chapter 246-290 WAC, Group A Public Water Supplies, Federal Groundwater Rule.

Hearing location(s): Department of Health
Point Plaza East
310 Israel Road SE
Tumwater WA 98504

Date: August 10, 2010 Time: 10:00 a.m.

Date of intended adoption: 08/17/2010
(Note: This is **NOT** the **effective** date)

Submit written comments to:
Name: Theresa Phillips
Address: Department of Health
P O Box 47822
Olympia WA 98504-7822
Website: http://www3.doh.wa.gov/policyreview/
fax (360) 236-2253 by (date) 08/10/2010

Assistance for persons with disabilities: Contact
Theresa Phillips by 08/03/2010
TTY (800) 833-6388 or () 711

Purpose of the proposal and its anticipated effects, including any changes in existing rules:
The purpose of the proposed rule is to: (1) Establish a risk-targeted approach for groundwater systems that are susceptible to fecal contamination; (2) establish corrective action requirements to reduce cases of waterborne illnesses or death; and (3) make editorial changes for clarity and correct technical errors.

Reasons supporting proposal:
The Department of Health (the department) has a primacy agreement with the U.S. Environmental Protection Agency (EPA) to assume lead responsibilities for implementing the federal Safe Drinking Water Act. As the primacy agency, the department must adopt rules no less stringent than EPA rules and regulations. The proposed rules incorporate EPA rules and are required to maintain the primacy agreement with EPA and federal funding for the Drinking Water program.

Statutory authority for adoption:
RCW 43.20.050

Statute being implemented:
RCW 70.119A.080

Is rule necessary because of a:

Federal Law?	☒ Yes	☐ No
Federal Court Decision?	☐ Yes	☒ No
State Court Decision?	☐ Yes	☒ No

If yes, CITATION:
40 CFR, Parts 141 and 142

DATE 07/06/10

NAME (type or print)
Mary C. Selecky

SIGNATURE

TITLE
Secretary

CODE REVISER USE ONLY

OFFICE OF THE CODE REVISER
STATE OF WASHINGTON
FILED

DATE: July 06, 2010
TIME: 11:15 AM

WSR 10-14-094

(COMPLETE REVERSE SIDE)

Agency comments or recommendations, if any, as to statutory language, implementation, enforcement, and fiscal matters:

None

Name of proponent: (person or organization) Department of Health

☐ Private
☐ Public
☒ Governmental

Name of agency personnel responsible for:

	Name	Office Location	Phone
Drafting.....	Theresa Phillips	243 Israel Rd SE, Tumwater, WA 98501	(360) 236-3147
Implementation....	Derrick Dennis	243 Israel Rd SE, Tumwater, WA 98501	(360) 236-3122
Enforcement.....	Derrick Dennis	243 Israel Rd SE, Tumwater, WA 98501	(360) 236-3122

Has a small business economic impact statement been prepared under chapter 19.85 RCW?

☐ Yes. Attach copy of small business economic impact statement.

A copy of the statement may be obtained by contacting:
Name:
Address:

phone
fax
e-mail

☒ No. Explain why no statement was prepared.

A small business economic impact statement (SBEIS) was not prepared. Under RCW 19.85.025 and 34.05.310(4)(c), a SBEIS is not required for proposed rules that adopt or incorporate by reference - without material change - federal statutes or regulations, the rules of other Washington state agencies, or national consensus codes that generally establish industry standards.

Is a cost-benefit analysis required under RCW 34.05.328?

☐ Yes A preliminary cost-benefit analysis may be obtained by contacting:
Name:
Address:

phone
fax
e-mail

☒ No: Please explain: The agency did not complete a cost benefit analysis under RCW 34.05.328. RCW 34.05.328(5)(b)(iii) exempts rules that adopt or incorporate by reference without material change federal statutes or regulations, the rules of other Washington state agencies, or national consensus codes that generally establish industry standards.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

WAC 246-290-002 Guidance. (1) The department has numerous guidance documents available to help purveyors comply with state and federal rules regarding drinking water. These include documents on the following subjects:

(a) Compliance;
(b) Consumer and public education;
(c) Contaminants;
(d) Cross-connection control and backflow prevention;
(e) Emergency response and drinking water security;
(f) Engineering design and water treatment;
(g) Financial assistance and state revolving fund (SRF);
(h) General information;
(i) ((~~Ground water~~)) Groundwater protection;
(j) Growth management;
(k) Operations and maintenance;
(l) Operator certification;
(m) Planning and financial viability;
(n) Regulations;
(o) Small water systems;
(p) System approval;
(q) Water quality monitoring and source protection;
(r) Water system planning; and
(s) Water use efficiency.

(2) The department's guidance documents are available at minimal or no cost by contacting the office of drinking water's publication service at 360-236-3100 or 800-521-0323. Individuals can also request the documents via the internet at http://www.doh.wa.gov/ehp/dw or through conventional mail at P.O. Box 47822, Olympia, Washington 98504-7822.

(3) Federal guidance documents are available from the Environmental Protection Agency (EPA) for a wide range of topics. These are available from the EPA Office of Ground Water and Drinking Water web site at www.epa.gov/safewater/index.html.

AMENDATORY SECTION (Amending WSR WSR 09-21-045, filed 10/13/09, effective 1/4/10)

WAC 246-290-010 Definitions, abbreviations, and acronyms.

"Acute" means posing an immediate risk to human health.

"ADD" means an average day demand.

"AG" means an air gap.

"Alternative filtration technology" means a filtration process for substantial removal of particulates (generally > 2 log *Giardia lamblia* cysts and ≥ 2-log removal of *Cryptosporidium* oocysts) by other than conventional, direct, diatomaceous earth, or slow sand filtration processes.

"Analogous treatment system" means an existing water treatment system that has unit processes and source water quality characteristics that are similar to a proposed treatment system.

"ANSI" means the American National Standards Institute.

"Approved air gap" means a physical separation between the free-flowing end of a potable water supply pipeline and the overflow rim of an open or nonpressurized receiving vessel.

To be an air gap approved by the department, the separation must be at least:

(a) Twice the diameter of the supply piping measured vertically from the overflow rim of the receiving vessel, and in no case be less than one inch, when unaffected by vertical surfaces (sidewalls); and

(b) Three times the diameter of the supply piping, if the horizontal distance between the supply pipe and a vertical surface (sidewall) is less than or equal to three times the diameter of the supply pipe, or if the horizontal distance between the supply pipe and intersecting vertical surfaces (sidewalls) is less than or equal to four times the diameter of the supply pipe and in no case less than one and one-half inches.

"Approved atmospheric vacuum breaker (AVB)" means an AVB of make, model, and size that is approved by the department. AVBs that appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or that are listed or approved by other nationally recognized testing agencies (such as IAPMO, ANSI, or UL) acceptable to the authority having jurisdiction are considered approved by the department.

"Approved backflow preventer" means an approved air gap, an approved backflow prevention assembly, or an approved AVB. The terms "approved backflow preventer," "approved air gap," or "approved backflow prevention assembly" refer only to those approved backflow preventers relied upon by the purveyor for the protection of the public water system. The requirements of WAC 246-290-490 do not apply to backflow preventers installed for other purposes.

"Approved backflow prevention assembly" means an RPBA, RPDA, DCVA, DCDA, PVBA, or SVBA of make, model, and size that is approved by the department. Assemblies that appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or other entity acceptable to the department are considered approved by the department.

"As-built drawing" means the drawing created by an engineer from the collection of the original design plans, including changes made to the design or to the system, that reflects the actual

constructed condition of the water system.

"Assessment source water monitoring" means an evaluation of groundwater sources that may be at risk for fecal contamination. Assessment source water monitoring involves the collection of source water samples at regular intervals and analysis of those samples for fecal indicators as directed by the department.

"Authority having jurisdiction" (formerly known as local administrative authority) means the local official, board, department, or agency authorized to administer and enforce the provisions of the Uniform Plumbing Code as adopted under chapter 19.27 RCW.

"Authorized agent" means any person who:

(a) Makes decisions regarding the operation and management of a public water system whether or not he or she is engaged in the physical operation of the system;

(b) Makes decisions whether to improve, expand, purchase, or sell the system; or

(c) Has discretion over the finances of the system.

"Authorized consumption" means the volume of metered and unmetered water used for municipal water supply purposes by consumers, the purveyor, and others authorized to do so by the purveyor, including, but not limited to, fire fighting and training, flushing of mains and sewers, street cleaning, and watering of parks and landscapes. These volumes may be billed or unbilled.

"AVB" means an atmospheric vacuum breaker.

"Average day demand (ADD)" means the total quantity of water use from all sources of supply as measured or estimated over a calendar year divided by three hundred sixty-five. ADD is typically expressed as gallons per day (gpd) per equivalent residential unit (ERU).

"AWWA" means the American Water Works Association.

"Backflow" means the undesirable reversal of flow of water or other substances through a cross-connection into the public water system or consumer's potable water system.

"Backflow assembly tester" means a person holding a valid BAT certificate issued under chapter 246-292 WAC.

"Backpressure" means a pressure (caused by a pump, elevated tank or piping, boiler, or other means) on the consumer's side of the service connection that is greater than the pressure provided by the public water system and which may cause backflow.

"Backsiphonage" means backflow due to a reduction in system pressure in the purveyor's distribution system and/or consumer's water system.

"Bag filter" means a pressure-driven separation device that removes particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a nonrigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to outside.

"Bank filtration" means a water treatment process that uses a well to recover surface water that has naturally infiltrated into

((~~ground water~~)) groundwater through a river bed or bank(s). Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other well(s).

"BAT" means a backflow assembly tester.

"Best available technology" means the best technology, treatment techniques, or other means that EPA finds, after examination for efficacy under field conditions, are available, taking cost into consideration.

"Blended sample" means a sample collected from two or more individual sources at a point downstream of the confluence of the individual sources and prior to the first connection.

"C" means the residual disinfectant concentration in mg/L at a point before or at the first consumer.

"Cartridge filter" means a pressure-driven separation device that removes particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.

"Category red operating permit" means an operating permit identified under chapter 246-294 WAC. Placement in this category results in permit issuance with conditions and a determination that the system is inadequate.

"CCP" means composite correction program.

"CCS" means a cross-connection control specialist.

"CFR" means the Code of Federal Regulations.

"Chemical contaminant treatment facility" means a treatment facility specifically used for the purpose of removing chemical contaminants.

"Clarification" means a treatment process that uses gravity (sedimentation) or dissolved air (flotation) to remove flocculated particles.

"Closed system" means any water system or portion of a water system in which water is transferred to a higher pressure zone closed to the atmosphere, such as when no gravity storage is present.

"Coagulant" means a chemical used in water treatment to destabilize particulates and accelerate the rate at which they aggregate into larger particles.

"Coagulation" means a process using coagulant chemicals and rapid mixing to destabilize colloidal and suspended particles and agglomerate them into flocs.

"Combination fire protection system" means a fire sprinkler system that:

(a) Is supplied only by the purveyor's water;

(b) Does not have a fire department pumper connection; and

(c) Is constructed of approved potable water piping and materials that serve both the fire sprinkler system and the consumer's potable water system.

"Combined distribution system" means the interconnected distribution system consisting of the distribution systems of

wholesale systems and of the consecutive systems that receive finished water.

"Completely treated water" means water from a surface water source, or a ((~~ground water~~)) groundwater source under the direct influence of surface water (GWI) source that receives filtration or disinfection treatment that fully complies with the treatment technique requirements of Part 6 of this chapter as determined by the department.

"Composite correction program (CCP)" means a program that consists of two elements - a comprehensive performance evaluation (CPE) and comprehensive technical assistance (CTA).

"Composite sample" means a sample in which more than one source is sampled individually by the water system and then composited by a certified laboratory by mixing equal parts of water from each source (up to five different sources) and then analyzed as a single sample.

"Comprehensive monitoring plan" means a schedule that describes both the frequency and appropriate locations for sampling of drinking water contaminants as required by state and federal rules.

"Comprehensive performance evaluation (CPE)" means a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements.

The comprehensive performance evaluation must consist of at least the following components:

(a) Assessment of plant performance;

(b) Evaluation of major unit processes;

(c) Identification and prioritization of performance limiting factors;

(d) Assessment of the applicability of comprehensive technical assistance; and

(e) Preparation of a CPE report.

"Comprehensive technical assistance (CTA)" means ((~~technical assistance intended to identify specific steps that may help a water treatment plant overcome operational or design limitations identified during a comprehensive performance evaluation~~)) the performance improvement phase that is implemented if the CPE results indicate improved performance potential. The system must identify and systematically address plant-specific factors. The CTA is a combination of using CPE results as a basis for follow-up, implementing process control priority-setting techniques, and maintaining long-term involvement to systematically train staff and administrators.

"Confirmation" means to demonstrate the accuracy of results of a sample by analyzing another sample from the same location within a reasonable period of time, generally not to exceed two weeks. Confirmation is when analysis results fall within plus or minus thirty percent of the original sample results.

"Confluent growth" means a continuous bacterial growth covering a portion or the entire filtration area of a membrane filter in which bacterial colonies are not discrete.

"Consecutive system" means a public water system that receives some or all of its finished water from one or more wholesale systems. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

"Construction completion report" means a form provided by the department and completed for each specific construction project to document:

(a) Project construction in accordance with this chapter and general standards of engineering practice;

(b) Physical capacity changes; and

(c) Satisfactory test results.

The completed form must be stamped with an engineer's seal, and signed and dated by a professional engineer.

"Consumer" means any person receiving water from a public water system from either the meter, or the point where the service line connects with the distribution system if no meter is present. For purposes of cross-connection control, "consumer" means the owner or operator of a water system connected to a public water system through a service connection.

"Consumer's water system," as used in WAC 246-290-490, means any potable ((~~and/~~))or industrial water system that begins at the point of delivery from the public water system and is located on the consumer's premises. The consumer's water system includes all auxiliary sources of supply, storage, treatment, and distribution facilities, piping, plumbing, and fixtures under the control of the consumer.

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

"Contingency plan" means that portion of the wellhead protection program section of the water system plan or small water system management program that addresses the replacement of the major well(s) or wellfield in the event of loss due to ((~~ground water~~)) groundwater contamination.

"Continuous monitoring" means determining water quality with automatic recording analyzers that operate without interruption twenty-four hours per day.

"Conventional filtration treatment" means a series of processes including coagulation, flocculation, clarification, and filtration that together result in substantial particulate removal in compliance with Part 6 of this chapter.

"Corrective action plan" means specific written actions and deadlines developed by the water system or the department that the system must follow as a result of either the identification of significant deficiencies during a sanitary survey or the determination of a fecal indicator-positive sample in source water monitoring.

"Cost-effective" means the benefits exceed the costs.

"Council" means the Washington state building code council

under WAC 51-04-015(2).

"CPE" means a comprehensive performance evaluation.

"Critical water supply service area (CWSSA)" means a geographical area which 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 in a manner that efficient and orderly development may best be achieved through coordinated planning by the water utilities in the area.

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

"Cross-connection control program" means the administrative and technical procedures the purveyor implements to protect the public water system from contamination via cross-connections as required in WAC 246-290-490.

"Cross-connection control specialist" means a person holding a valid CCS certificate issued under chapter 246-292 WAC.

"Cross-connection control summary report" means the annual report that describes the status of the purveyor's cross-connection control program.

"CT" or **"CTcalc"** means the product of "residual disinfectant concentration" (C) and the corresponding "disinfectant contact time" (T) i.e., "C" x "T."

"$CT_{99.9}$" means the CT value required for 99.9 percent (3 log) inactivation of *Giardia lamblia* cysts.

"CTA" means comprehensive technical assistance.

"CTreq" means the CT value a system shall provide to achieve a specific percent inactivation of *Giardia lamblia* cysts or other pathogenic organisms of health concern as directed by the department.

"Curtailment" means short-term, infrequent actions by a purveyor and its consumers to reduce their water use during or in anticipation of a water shortage.

"CWSSA" means a critical water supply service area.

"DBPs" means disinfection byproducts.

"DCDA" means a double check detector assembly.

"DCVA" means a double check valve assembly.

"Dead storage" means the volume of stored water not available to all consumers at the minimum design pressure under WAC 246-290-230 (5) and (6).

"Demand forecast" means an estimate of future water system water supply needs assuming historically normal weather conditions and calculated using numerous parameters, including population, historic water use, local land use plans, water rates and their impacts on consumption, employment, projected water use efficiency savings from implementation of a water use efficiency program, and other appropriate factors.

"Department" means the Washington state department of health or health officer as identified in a joint plan of operation under

WAC 246-290-030(1).

"Design and construction standards" means department design guidance and other peer reviewed documents generally accepted by the engineering profession as containing fundamental criteria for design and construction of water facility projects. Design and construction standards are comprised of performance and sizing criteria and reference general construction materials and methods.

"Diatomaceous earth filtration" means a filtration process for substantial removal of particulates (> 2 log *Giardia lamblia* cysts) in which:

(a) A precoat cake of graded diatomaceous earth filter media is deposited on a support membrane (septum); and

(b) Water is passed through the cake on the septum while additional filter media, known as body feed, is continuously added to the feed water to maintain the permeability of the filter cake.

"Direct filtration" means a series of processes including coagulation, flocculation, and filtration (but excluding sedimentation) that together result in substantial particulate removal in compliance with Part 6 of this chapter.

"Direct service connection" means a service hookup to a property that is contiguous to a water distribution main and where additional distribution mains or extensions are not needed to provide service.

"Disinfectant contact time (T in CT)" means:

(a) When measuring the first or only C, the time in minutes it takes water to move from the point of disinfectant application to a point where the C is measured; and

(b) For subsequent measurements of C, the time in minutes it takes water to move from one C measurement point to the C measurement point for which the particular T is being calculated.

"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.

"Disinfection profile" means a summary of *Giardia lamblia* inactivation through a surface water treatment plant.

"Distribution coliform sample" means a sample of water collected from a representative location in the distribution system at or after the first service and analyzed for coliform presence in compliance with this chapter.

"Distribution-related projects" means distribution projects such as storage tanks, booster pump facilities, transmission mains, pipe linings, and tank coating. It does not mean source of supply (including interties) or water quality treatment projects.

"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.

"Domestic or other nondistribution system plumbing problem," means contamination of a system having more than one service connection with the contamination limited to the specific service connection from which the sample was taken.

"Dual sample set" means a set of two samples collected at the same time and same location, with one sample analyzed for TTHM and the other sample analyzed for HAA5. Dual sample sets are collected for the purposes of conducting an IDSE under WAC 246-290-300 (6)(b)(i)(F) and determining compliance with the TTHM and HAA5 MCLs under WAC 246-290-310(4).

"Duplicate (verification) sample" means a second sample collected at the same time and location as the first sample and used for verification.

"DVGW" means Deutsche Vereinigung des Gas und Wasserfaches.

"Elected governing board" means the elected officers with ultimate legal responsibility for operational, technical, managerial, and financial decisions for a public water system.

"Emergency" means an unforeseen event that causes damage or disrupts normal operations and requires immediate action to protect public health and safety.

"Emergency source" means any source that is approved by the department for emergency purposes only, is not used for routine or seasonal water demands, is physically disconnected, and is identified in the purveyor's emergency response plan.

"Engineering design review report" means a form provided by the department and completed for a specific distribution-related project to document:

(a) Engineering review of a project report and/or construction documents under the submittal exception process in WAC 246-290-125(3); and

(b) Design in accordance with this chapter and general standards of engineering practice.

(c) The completed form must be stamped with engineer's seal, and signed and dated by a professional engineer.

"EPA" means the Environmental Protection Agency.

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

"Equivalent residential unit (ERU)" means a system-specific unit of measure used to express the amount of water consumed by a typical full-time single family residence.

"ERU" means an equivalent residential unit.

"Existing service area" means a specific area within which direct service or retail service connections to customers of a public water system are currently available.

"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 and/or its number of approved service connections. Exceptions:

(a) A system that connects new approved individual retail or direct service connections onto an existing distribution system within an existing service area; or

(b) A distribution system extension in an existing service area identified in a current and approved water system plan or

project report.

"Filter profile" means a graphical representation of individual filter performance in a direct or conventional surface water filtration plant, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed.

"Filtration" means a process for removal of particulate matter from water by passage through porous media.

"Financial viability" means the capability of a water system to obtain sufficient funds to construct, operate, maintain, and manage a public water system, on a continuing basis, in full compliance with federal, state, and local requirements.

"Finished water" means water introduced into a public water system's distribution system and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals).

"Finished water storage facility" means a water storage structure that is integrated with a water system's distribution network to provide for variable system demands including, but not limited to, daily equalizing storage, standby storage, or fire reserves, or to provide for disinfectant contact time.

"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.

"Fire suppression storage" means the volume of stored water available during fire suppression activities to satisfy minimum pressure requirements per WAC 246-290-230.

"First consumer" means the first service connection associated with any source (i.e., the point where water is first withdrawn for human consumption, excluding connections where water is delivered to another water system covered by these regulations).

"Flocculation" means a process enhancing agglomeration and collection of colloidal and suspended particles into larger, more easily settleable or filterable particles by gentle stirring.

"Flowing stream" means a course of running water flowing in a definite channel.

"Flow-through fire protection system" means a fire sprinkler system that:

(a) Is supplied only by the purveyor's water;

(b) Does not have a fire department pumper connection;

(c) Is constructed of approved potable water piping and materials to which sprinkler heads are attached; and

(d) Terminates at a connection to a toilet or other plumbing fixture to prevent stagnant water.

"Forecasted demand characteristics" means the factors that may affect a public water system's projected water needs.

"Future service area" means a specific area a public water system plans to provide water service. This is determined by a written agreement between purveyors under WAC 246-293-250 or by the

purveyor's elected governing board or governing body if not required under WAC 246-293-250.

"GAC" means granular activated carbon.

"GAC10" means granular activated carbon filter beds with an empty-bed contact time of ten minutes based on average daily flow and a carbon reactivation frequency of every one hundred eighty days, except that the reactivation frequency for GAC10 used as a best available technology for compliance with MCLs under WAC 246-290-310(4) shall be one hundred twenty days.

"GAC20" means granular activated carbon filter beds with an empty-bed contact time of twenty minutes based on average daily flow and a carbon reactivation frequency of every two hundred forty days.

"Governing body" means the individual or group of individuals with ultimate legal responsibility for operational, technical, managerial, and financial decisions for a public water system.

"gph" means gallons per hour.

"gpm" means gallons per minute.

"Grab sample" means a water quality sample collected at a specific instant in time and analyzed as an individual sample.

"Groundwater system" means all public water systems that use groundwater including:

(a) Consecutive systems receiving finished groundwater; or

(b) Surface water systems with groundwater sources except those systems that combine all sources prior to treatment.

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

(a) Significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia* or, *Cryptosporidium*; or

(b) Significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH closely correlating to climatological or surface water conditions where natural conditions cannot prevent the introduction of surface water pathogens into the source at the system's point of withdrawal.

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

"GWI" means ((~~ground water~~)) groundwater under the direct influence of surface water.

"GWR" means groundwater rule.

"HAA5" means haloacetic acids (five).

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

"Heterotrophic Plate Count (HPC)" means a procedure to measure a class of bacteria that use organic nutrients for growth. The density of these bacteria in drinking water is measured as colony forming units per milliliter and is referred to as the HPC.

"High health cross-connection hazard" means a cross-connection involving any substance that could impair the quality of potable water and create an actual public health hazard through injury, poisoning, or spread of disease.

"HPC" means heterotrophic plate count.

"Human consumption" means the use of water for drinking, bathing or showering, hand washing, food preparation, cooking, or oral hygiene.

"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 is used to establish any need for improvements to existing systems or to substantiate 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.

"IAPMO" means the International Association of Plumbing and Mechanical Officials.

"IDSE" means an initial distribution system evaluation.

"Inactivation" means a process which renders pathogenic microorganisms incapable of producing disease.

"Inactivation ratio" means the ratio obtained by dividing CTcalc by CTreq.

"Incompletely treated water" means water from a surface or GWI source that receives filtration and/or disinfection treatment that does not fully comply with the treatment technique requirements of Part 6 of this chapter as determined by the department.

"In-line filtration" means a series of processes, including coagulation and filtration (but excluding flocculation and sedimentation) that together result in particulate removal.

"In-premises protection" means a method of protecting the health of consumers served by the consumer's potable water system, located within the property lines of the consumer's premises by the installation of an approved air gap or backflow prevention assembly at the point of hazard, which is generally a plumbing fixture.

"Intertie" means an interconnection between public water systems permitting the exchange or delivery of water between those systems.

"kPa" means kilo pascal (SI units of pressure).

"Lake or reservoir" means a natural or man-made basin or hollow on the earth's surface in which water collects or is stored that may or may not have a current or single direction of flow.

"Legionella" means a genus of bacteria containing species which cause a type of pneumonia called Legionnaires' Disease.

"Limited alternative to filtration" means a process that ensures greater removal and/or inactivation efficiencies of pathogenic organisms than would be achieved by the combination of filtration and chlorine disinfection.

"Local plans and regulations" means any comprehensive plan or development regulation adopted under chapter 36.70A RCW or any

other applicable comprehensive plan, land use plan, or development regulation adopted by a city, town, or county for the applicable service area.

"Locational running annual average (LRAA)" means the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

"Low cross-connection hazard" means a cross-connection that could impair the quality of potable water to a degree that does not create a hazard to the public health, but does adversely and unreasonably affect the aesthetic qualities of potable waters for domestic use.

"LRAA" means the locational running annual average.

"Major project" means all construction projects subject to the State Environmental Policy Act (SEPA) under WAC 246-03-030 (3)(a) and include all surface water source development, all water system storage facilities greater than one-half million gallons, new transmission lines longer than one thousand feet and larger than eight inches in diameter located in new rights of way and major extensions to existing water distribution systems involving use of pipes greater than eight inches in diameter, that are designed to increase the existing service area by more than one square mile.

"Mandatory curtailment" means curtailment required by a public water system of specified water uses and consumer classes for a specified period of time.

"Marginal costs" means the costs incurred by producing the next increment of supply.

"Maximum contaminant level (MCL)" means the maximum permissible level of a contaminant in water the purveyor delivers to any public water system user, measured at the locations identified under WAC 246-290-300, Table 3.

"Maximum contaminant level violation" means a confirmed measurement above the MCL and for a duration of time, where applicable, as outlined under WAC 246-290-310.

"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. MDD is typically expressed as gallons per day per ERU (gpd/ERU).

"MCL" means the maximum contaminant level.

"MDD" means the maximum day demand.

"Membrane filtration" means a pressure or vacuum driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

"mg/L" means milligrams per liter (1 mg/L = 1 ppm).

"mL" means a milliliter.

"mm" means a millimeter.

"Monitoring waiver" means an action taken by the department under WAC 246-290-300 (4)(g) or (8)(f) to allow a water system to reduce specific monitoring requirements based on a determination of low source vulnerability to contamination.

"MRDL" means the maximum residual disinfectant level.

"MRDLG" means the maximum residual disinfectant level goal.

"MTTP" means maximum total trihalomethane potential.

"Municipal water supplier" means an entity that supplies water for municipal water supply purposes.

"Municipal water supply purposes" means a beneficial use of water:

(a) For residential purposes through fifteen or more residential service connections or for providing residential use of water for a nonresidential population that is, on average, at least twenty-five people for at least sixty days a year;

(b) For governmental or governmental proprietary purposes by a city, town, public utility, district, county, sewer district, or water district; or

(c) Indirectly for the purposes in (a) or (b) of this definition through the delivery of treated or raw water to a public water system for such use.

(i) If water is beneficially used under a water right for the purposes listed in (a), (b), or (c) of this definition, any other beneficial use of water under the right generally associated with the use of water within a municipality is also for "municipal water supply purposes," including, but not limited to, beneficial use for commercial, industrial, irrigation of parks and open spaces, institutional, landscaping, fire flow, water system maintenance and repair, or related purposes.

(ii) If a governmental entity holds a water right that is for the purposes listed in (a), (b), or (c) of this definition, its use of water or its delivery of water for any other beneficial use generally associated with the use of water within a municipality is also for "municipal water supply purposes," including, but not limited to, beneficial use for commercial, industrial, irrigation of parks and open spaces, institutional, landscaping, fire flow, water system maintenance and repair, or related purposes.

"Nested storage" means one component of storage is contained within the component of another.

"Nonacute" means posing a possible or less than immediate risk to human health.

"Nonresident" means a person having access to drinking water from a public water system, but who lives elsewhere. Examples include travelers, transients, employees, students, etc.

"Normal operating conditions" means those conditions associated with the designed, day-to-day provision of potable drinking water that meets regulatory water quality standards and the routine service expectations of the system's consumers at all times, including meeting fire flow demands. Operation under conditions such as power outages, floods, or unscheduled transmission or distribution disruptions, even if considered in the system design, are considered abnormal.

"NSF" means NSF International (formerly known as the National Sanitation Foundation (NSF)).

"NTNC" means nontransient noncommunity.

"NTU" means a nephelometric turbidity unit.

"ONORM" means Osterreichisches Normungsinstitut.

"Operational storage" means the volume of distribution storage associated with source or booster pump normal cycling times under normal operating conditions and is additive to the equalizing and standby storage components, and to fire flow storage if this storage component exists for any given tank.

"PAA" means a project approval application.

"pCi/L" means picocuries per liter.

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

"Peak hourly flow" means, for the purpose of CT calculations, the greatest volume of water passing through the system during any one hour in a day.

"Performance criteria" means the level at which a system shall operate in order to maintain system reliability compliance, in accordance with WAC 246-290-420, and to meet consumers' reasonable expectations.

"Permanent residence" means any dwelling that is, or could reasonably be expected to be, occupied on a continuous basis.

"Permanent source" means a public water system supply source that is used regularly each year, and based on expected operational requirements of the system, will be used more than three consecutive months in any twelve-month period. For seasonal water systems that are in operation for less than three consecutive months per year, their sources shall also be considered to be permanent.

"PHD" means peak hourly demand.

"Plant intake" means the works or structures at the head of a conduit through which water is diverted from a source (e.g., river or lake) into the treatment plant.

"Point of disinfectant application" means the point where the disinfectant is added, and where water downstream of that point is not subject to contamination by untreated surface water.

"Population served" means the number of persons, resident and nonresident, having immediate access to drinking water from a public water system, whether or not persons have actually consumed water from that system. The number of nonresidents shall be the average number of persons having immediate access to drinking water on days access was provided during that month. In the absence of specific population data, the number of residents shall be computed by multiplying the number of active services by two and one-half.

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

"Potential GWI" means a source identified by the department as possibly under the influence of surface water, and includes, but is not limited to, all wells with a screened interval fifty feet or

less from the ground surface at the wellhead and located within two hundred feet of a surface water, and all Ranney wells, infiltration galleries, and springs.

"ppm" means parts per million (1 ppm = 1 mg/L).

"Premises isolation" means a method of protecting a public water system by installation of approved air gaps or approved backflow prevention assemblies at or near the service connection or alternative location acceptable to the purveyor to isolate the consumer's water system from the purveyor's distribution system.

"Presedimentation" means a preliminary treatment process used to remove gravel, sand, and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant.

"Pressure filter" means an enclosed vessel containing properly sized and graded granular media through which water is forced under greater than atmospheric pressure.

"Primary disinfection" means a treatment process for achieving inactivation of *Giardia lamblia* cysts, viruses, or other pathogenic organisms of public health concern to comply with the treatment technique requirements of Part 6 of this chapter.

"Primary standards" means standards based on chronic, nonacute, or acute human health effects.

"Primary turbidity standard" means an accurately prepared formazin solution or commercially prepared polymer solution of known turbidity (prepared in accordance with "standard methods") that is used to calibrate bench model and continuous turbidimeters (instruments used to measure turbidity).

"Project approval application (PAA)" means a department form documenting ownership of water system, design engineer for the project, and type of project.

"Protected ((~~ground water~~)) groundwater source" means a ((~~ground water~~)) groundwater source the purveyor shows to the department's satisfaction as protected from potential sources of contamination on the basis of hydrogeologic data and/or satisfactory water quality history.

"psi" means pounds per square inch.

"Public forum" means a meeting open to the general public that allows for their participation.

"Public water system" is defined and referenced under WAC 246-290-020.

"Purchased source" means water a purveyor purchases from a public water system not under the control of the purveyor for distribution to the purveyor's consumers.

"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. Purveyor also means the authorized agents of these entities.

"PVBA" means a pressure vacuum breaker assembly.

"RAA" means the running annual average.

"Reclaimed water" means effluent derived in any part from

sewage from a wastewater treatment system that has been adequately and reliably treated, so that as a result of that treatment, it is suitable for beneficial use or a controlled use that would not otherwise occur, and it is no longer considered wastewater.

"Record drawings" means the drawings bearing the seal and signature of a professional engineer that reflect the modifications made to construction documents, documenting actual constructed conditions of the water system facilities.

"Recreational tract" means an area that is clearly defined for each occupant, but has no permanent structures with internal plumbing, and the area has been declared in the covenants or on the recorded plat in order to be eligible for reduced design considerations.

"Regional public water supplier" means a water system that provides drinking water to one, or more, other public water systems.

"Regularly" means four hours or more per day for four days or more per week.

"Removal credit" means the level (expressed as a percent or log) of *Giardia* and virus removal the department grants a system's filtration process.

"Repeat sample" means a sample collected to confirm the results of a previous analysis.

"Resident" means an individual living in a dwelling unit served by a public water system.

"Residual disinfectant concentration" means the analytical level of a disinfectant, measured in milligrams per liter, that remains in water following the application (dosing) of the disinfectant after some period of contact time.

"Retail service area" means the specific area defined by the municipal water supplier where the municipal water supplier has a duty to provide service to all new service connections. This area must include the municipal water supplier's existing service area and may also include areas where future water service is planned if the requirements of RCW 43.20.260 are met.

"RPBA" means reduced pressure backflow assembly.

"RPDA" means reduced pressure detector assembly.

"SAL" means state advisory level.

"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 **Group A** public water system.

"Sanitary survey" means a review, inspection, and assessment of a public water system, by the department or department designee ((~~including, but not limited to~~)), to determine the adequacy of the system and its operation for producing and distributing safe and reliable drinking water. Each survey includes, but is not limited to, an evaluation of the following components:

(a) Source;

(b) ((~~Facilities;~~)) Treatment;

(c) ((~~Equipment;~~)) Distribution system;

(d) ((~~Administration and operation;~~)) Finished water storage;

(e) ((~~Maintenance procedures;~~)) Pump, pump facilities, and controls;

(f) Monitoring, reporting, and data verification;

(g) ((~~Recordkeeping;~~)) System management and operation; and

(h) ((~~Planning documents and schedules; and~~

~~(i) Management practices~~)) Operator compliance.

"Satellite system management agency (SMA)" means a person or entity that is approved by the department to own or operate public water systems on a regional or county-wide basis without the necessity for a physical connection between the systems.

"SCA" means a sanitary control area.

"SDWA" means the Safe Drinking Water Act.

"Seasonal source" means a public water system source used on a regular basis, that is not a permanent or emergency source.

"Secondary standards" means standards based on factors other than health effects.

"SEPA" means the State Environmental Policy Act.

"Service area" means the specific area or areas a water system currently serves or plans to provide water service. This may be comprised of the existing service area, retail service area, future service area, and include areas where water is provided to other public water systems.

"Service connection" means a connection to a public water system designed to provide potable water to a single family residence, or other residential or nonresidential population. When the connection provides water to a residential population without clearly defined single family residences, the following formulas shall be used in determining the number of services to be included as residential connections on the WFI form:

(a) Divide the average population served each day by two and one-half; or

(b) Using actual water use data, calculate the total ERUs represented by the service connection in accordance with department design guidance.

(c) In no case shall the calculated number of services be less than one.

"Severe health cross-connection hazard" means a cross-connection which could impair the quality of potable water and create an immediate, severe public health hazard through poisoning or spread of disease by contaminants from radioactive material processing plants, nuclear reactors, or wastewater treatment plants.

((~~**"Significant noncomplier"** means a system that is violating or has violated department rules, and the violations may create, or have created an imminent or a significant risk to human health.~~

~~The violations include, but are not limited to:~~

~~(a) Repeated violations of monitoring requirements;~~

~~(b) Failure to address an exceedance of permissible levels of regulated contaminants; or~~

~~(c) Failure to comply with treatment technique standards or requirements.~~))

"Simple disinfection" means any form of disinfection that requires minimal operational control in order to maintain the disinfection at proper functional levels, and that does not pose safety concerns that would require special care, equipment, or expertise. Examples include hypochlorination, UV-light, contactor chlorination, or any other form of disinfection practice that is safe to use and easy to routinely operate and maintain.

"Slow sand filtration" means a process involving passage of source water through a bed of sand at low velocity (generally less than 0.10 gpm/ft^2) that results in substantial particulate removal (> 2 log *Giardia lamblia* cysts) by physical and biological mechanisms.

"SMA" means a satellite system management agency.

"SOC" means a synthetic organic chemical.

"Societal perspective" means:

A point of view that includes a broad spectrum of public benefits, including, but not limited to:

(a) Enhanced system reliability;

(b) Savings that result from delaying, deferring, or minimizing capital costs; and

(c) Environmental benefits such as increased water in streams, improvements in aquifer recharge and other environmental factors.

"Source meter" means a meter that measures total output of a water source over specific time periods.

"Source water" means untreated water that is not subject to recontamination by surface runoff and:

(a) For unfiltered systems, enters the system immediately before the first point of disinfectant application; and

(b) For filtered systems, enters immediately before the first treatment unit of a water treatment facility.

"SPI" means a special purpose investigation.

"Special purpose investigation (SPI)" means on-site inspection of a public water system by the department or designee to address a potential public health concern, regulatory violation, or consumer complaint.

"Special purpose sample" means a sample collected for reasons other than the monitoring compliance specified in this chapter.

"Spring" means a source of water where an aquifer comes in contact with the ground surface.

"SRF" means the state revolving fund.

<u>**"SSNC"** means state significant noncomplier.</u>

"Standard methods" means the book, titled *Standard Methods for the Examination of Water and Waste Water,* jointly published by the American Public Health Association, American Water Works Association (AWWA), and Water Pollution Control Federation. This book is available through public libraries or may be ordered from AWWA, 6666 West Quincy Avenue, Denver, Colorado 80235. The edition to be used is that specified by EPA for the relevant drinking water parameter in 40 CFR Part 141.

"Standby storage" means the volume of stored water available for use during a loss of source capacity, power, or similar short-

term emergency.

"State advisory level (SAL)" means a level established by the department and state board of health for a contaminant without an existing MCL. The SAL represents a level that when exceeded, indicates the need for further assessment to determine if the chemical is an actual or potential threat to human health.

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

"State building code" means the codes adopted by and referenced in chapter 19.27 RCW; the state energy code; and any other codes so designated by the Washington state legislature as adopted and amended by the council.

"State revolving fund (SRF)" means the revolving loan program financed by the state and federal governments and managed by the state for the purpose of assisting water systems to meet their capital needs associated with complying with the federal Safe Drinking Water Act under chapter 246-296 WAC.

"State significant noncomplier" means a system that is violating or has violated department rules, and the violations may create, or have created an imminent or a significant risk to human health.

The violations include, but are not limited to:

(a) Repeated violations of monitoring requirements;

(b) Failure to address an exceedance of permissible levels of regulated contaminants;

(c) Failure to comply with treatment technique standards or requirements;

(d) Failure to comply with waterworks operator certification requirements; or

(e) Failure to submit to a sanitary survey.

"Subpart H System" see definition for **"surface water system."**

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

"Surface water system" means a public water system that uses in whole, or in part, source water from a surface supply, or GWI supply. This includes systems that operate surface water treatment facilities, and systems that purchase "completely treated water" (as defined in this subsection). A "surface water system" is also referred to as a "Subpart H System" in some federal regulatory language adopted by reference and the two terms are considered equivalent for the purposes of this chapter.

"Susceptibility assessment" means the completed Susceptibility Assessment Survey Form developed by the department to evaluate the hydrologic setting of the water source and assess its contribution to the source's overall susceptibility to contamination from surface activities.

"SUVA" means specific ultraviolet absorption.

"SVBA" means spill resistant vacuum breaker assembly.

"SWTR" means the surface water treatment rule.

"Synthetic organic chemical (SOC)" means a manufactured carbon-based chemical.

"System capacity" means the system's operational, technical,

managerial, and financial capability to achieve and maintain compliance with all relevant local, state, and federal plans and regulations.

"System physical capacity" means the maximum number of service connections or equivalent residential units (ERUs) that the system can serve when considering the limitation of each system component such as source, treatment, storage, transmission, or distribution, individually and in combination with each other.

"T" means disinfectant contact time in minutes.

"Time-of-travel" means the time required for ((~~ground water~~)) groundwater to move through the water bearing zone from a specific point to a well.

"TNC" means transient noncommunity.

"TNTC" means too numerous to count.

"TOC" means total organic carbon.

"Too numerous to count (TNTC)" means the total number of bacterial colonies exceeds 200 on a 47-mm diameter membrane filter used for coliform detection.

"Tracer study" means a field study conducted to determine the disinfectant contact time, T, provided by a water system component, such as a clearwell or storage reservoir, used for *Giardia lamblia* cyst and virus inactivation. The study involves introducing a tracer chemical at the inlet of the contact basin and measuring the resulting outlet tracer concentration as a function of time.

"Transmission line" means pipes used to convey water from source, storage, or treatment facilities to points of distribution or distribution mains, and from source facilities to treatment or storage facilities. This also can include transmission mains connecting one section of distribution system to another section of distribution system as long as this transmission main is clearly defined on the plans and no service connections are allowed along the transmission main.

"Treatment technique requirement" means a department-established requirement for a public water system to provide treatment, such as filtration or disinfection, as defined by specific design, operating, and monitoring requirements. A "treatment technique requirement" is established in lieu of a primary MCL when monitoring for the contaminant is not economically or technologically feasible.

"Triggered source water monitoring" means collection of groundwater source samples as a result of a total coliform-positive routine sample in the distribution system under WAC 246-290-300(3).

"Trihalomethane (THM)" means one of a family of organic compounds, named as derivatives of methane, where three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure. THMs may occur when chlorine, a halogen, is added to water containing organic material and are generally found in water samples as disinfection byproducts.

"TTHM" means total trihalomethane.

"Turbidity event" means a single day or series of consecutive days, not to exceed fourteen, when one or more turbidity measurement each day exceeds 5 NTU.

"Two-stage lime softening" means a process in which chemical addition and hardness precipitation occur in each of two distinct unit clarification processes in series prior to filtration.

"T10" means the time it takes ten percent of the water passing through a system contact tank intended for use in the inactivation of *Giardia lamblia* cysts, viruses, and other microorganisms of public health concern, as determined from a tracer study conducted at peak hourly flow or from published engineering reports or guidance documents for similarly configured tanks.

"ug/L" means micrograms per liter.

"UL" means the Underwriters Laboratories, Inc.

"umhos/cm" means micromhos per centimeter.

"Unapproved auxiliary water supply" means a water supply (other than the purveyor's water supply) on or available to the consumer's premises that is either not approved for human consumption by the health agency having jurisdiction or is not otherwise acceptable to the purveyor.

"Uncovered finished water storage facility" means a tank, reservoir, or other facility used to store water, which will undergo no further treatment to reduce microbial pathogens except residual disinfection and is directly open to the atmosphere without a suitable water-tight roof or cover.

"Uniform Plumbing Code" means the code adopted under RCW 19.27.031(4) and implemented under chapter 51-56 WAC. This code establishes statewide minimum plumbing standards applicable within the property lines of the consumer's premises.

"UPC" means the Uniform Plumbing Code.

"Used water" means water which has left the control of the purveyor.

"UTC" means the utilities and transportation commission.

"Verification" means to demonstrate the results of a sample to be precise by analyzing a duplicate sample. Verification occurs when analysis results fall within plus or minus thirty percent of the original sample.

"Virus" means a virus of fecal origin which is infectious to humans and transmitted through water.

"VOC" means a volatile organic chemical.

"Volatile organic chemical (VOC)" means a manufactured carbon-based chemical that vaporizes quickly at standard pressure and temperature.

"Voluntary curtailment" means a curtailment of water use requested, but not required of consumers.

"WAC" means the Washington Administrative Code.

"Waterborne disease outbreak" means the significant occurrence of acute infectious illness, epidemiologically associated with drinking water from a public water system, as determined by the appropriate local health agency or the department.

"Water demand efficiency" means minimizing water use by the public water system's consumers through purveyor sponsored activities that may include, but are not limited to distributing water saving devices, providing rebates or incentives to promote

water efficient technologies or by providing water audits to homes, businesses, or landscapes.

"Water facilities inventory (WFI) form" means the department form summarizing each public water system's characteristics.

"Water right" means a permit, claim, or other authorization, on record with or accepted by the department of ecology, authorizing the beneficial use of water in accordance with all applicable state laws.

"Water right self-assessment" means an evaluation of the legal ability of a water system to use water for existing or proposed usages in conformance with state water right laws. The assessment may be done by a water system, a purveyor, the department of ecology, or any combination thereof.

"Watershed" means the region or area that:

(a) Ultimately drains into a surface water source diverted for drinking water supply; and

(b) Affects the physical, chemical, microbiological, and radiological quality of the source.

"Water shortage" means a situation during which the water supplies of a system cannot meet normal water demands for the system, including peak periods.

"Water shortage response plan" means a plan outlining policies and activities to be implemented to reduce water use on a short-term basis during or in anticipation of a water shortage.

"Water supply characteristics" means the factors related to a public water system's source of water supply that may affect its availability and suitability to provide for both short-term and long-term needs.

Factors include, but are not limited to:

(a) Source location;

(b) Name of any body of water and water resource inventory area from which water is diverted or withdrawn;

(c) Production capacity;

(d) The source's natural variability;

(e) The system's water rights for the source;

(f) Other legal demands on the source such as water rights for other uses;

(g) Conditions established to protect species listed under the Endangered Species Act in 50 CFR 17.11;

(h) Instream flow restrictions established under Title 173 WAC; and

(i) Any conditions established by watershed plans approved under chapter 90.82 RCW and RCW 90.54.040(1) or salmon recovery plans under chapter 77.85 RCW.

"Water supply efficiency" means increasing a public water system's transmission, storage and delivery potential through activities that may include, but are not limited to:

(a) System-wide water audits;

(b) Documenting authorized uses;

(c) Conducting leak surveys; and

(d) Repairs on:

(i) Meters;

(ii) Lines;
(iii) Storage facilities; and
(iv) Valves.

"Water use efficiency (WUE)" means increasing water supply efficiency and water demand efficiency to minimize water withdrawals and water use.

"Water use efficiency program" means policies and activities focusing on increasing water supply efficiency and water demand efficiency to minimize water withdrawals and water use.

"Well field" means a group of wells one purveyor owns or controls that:

(a) Draw from the same aquifer or aquifers as determined by comparable inorganic chemical analysis and comparable static water level and top of the open interval elevations; and

(b) Discharge water through a common pipe and the common pipe shall allow for collection of a single sample before the first distribution system connection.

"Wellhead protection area (WHPA)" means the portion of a well's, wellfield's or spring's zone of contribution defined using WHPA criteria established by the department.

"WFI" means a water facilities inventory form.

"Wholesale system" means a public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

"WHPA" means a wellhead protection area.

"WUE" means water use efficiency.

"Zone of contribution" means the area surrounding a pumping well or spring that encompasses all areas or features that supply ((~~ground water~~)) groundwater recharge to the well or spring.

AMENDATORY SECTION (Amending WSR 09-21-045, filed 10/13/09, effective 1/4/10)

WAC 246-290-025 Adoption by reference. The following sections and subsections of Title 40 Code of Federal Regulations (CFR) Part 141 National Primary Drinking Water Regulations revised as of July 1, 2009, and including all amendments and modifications thereto effective as of the date of adoption of this chapter are adopted by reference:

141.2 Definitions. Only those definitions listed as follows:

Action level;

Corrosion inhibitor;

Effective corrosion inhibitor residual;

Enhanced coagulation;

Enhanced softening;

Haloacetic acids (five) (HAA5);

First draw sample;

Large water system;

Lead service line;

Maximum residual disinfectant level (MRDL);

Maximum residual disinfectant level goal (MRDLG);

Medium-size water system;

Optimal corrosion control treatment;

Service line sample;

Single family structure;

Small water system;

Specific ultraviolet absorption (SUVA); and

Total Organic Carbon (TOC).

141.12	Maximum contaminant levels for organic chemicals.
141.13	Maximum contaminant levels for turbidity.
141.21	Coliform monitoring.
141.22	Turbidity sampling and analytical requirements.
141.23(a) - excluding (i)(2)	141.23(j), Inorganic chemical sampling.
141.23(m) -	141.23(o)
141.24(a) -	141.24(d), Organic chemicals other than total trihalomethanes.

141.24 (f)(1) - 141.24 (f)(15),

141.24 (f)(18), 141.24 (f)(19),

141.24 (f)(21), 141.24 (f)(22)

141.24 (g)(1) - 141.24 (g)(9),

141.24 (g)(12) - 141.24 (g)(14),

141.24 (h)(1) - 141.24 (h)(11),

141.24 (h)(14) - 141.24 (h)(17)

141.24 (h)(20)

141.25(a),	141.25 (c) - (d), Analytical methods for radioactivity.
141.26	Monitoring frequency and compliance for radioactivity in community water systems.
141.31(d)	Reporting of public notices and compliance certifications.
141.33(e)	Record maintenance of public notices and certifications.
141.40	Monitoring requirements for unregulated contaminants.
141.61	Maximum contaminant levels for organic contaminants.
141.62, excluding (b)	Maximum contaminant levels for inorganic chemical and physical contaminants.

141.64	Maximum contaminant levels and Best Available Technologies (BATs) for disinfection byproducts.
141.65(c)	Best Available Technologies (BATs) for Maximum Residual Disinfectant Levels.
141.66	Maximum contaminant levels for radionuclides.
Control of Lead and Copper	
141.80	General requirements.
141.81	Applicability of corrosion control treatment steps to small, medium-size and large water systems.
141.82(a) -	141.82(h) Description of corrosion control treatment requirements.
141.83	Source water treatment requirements.
141.84	Lead service line replacement requirements.
141.85	Public education and supplemental monitoring requirements.
141.86 (a) - (f)	Monitoring requirements for lead and copper in tap water.
141.87	Monitoring requirements for water quality parameters.
141.88	Monitoring requirements for lead and copper in source water.
141.89	Analytical methods for lead and copper testing.
141.90, excluding (a)(4)	Reporting requirements.
141.91	Recordkeeping requirements.
Disinfectants and Disinfection Byproducts (D/DBP)	
141.130	General requirements.
141.131	Analytical requirements.
141.132	Monitoring requirements.
141.133	Compliance.
141.134	Reporting and recordkeeping.
141.135	Treatment technique for control of disinfection byproduct precursors.
((~~Enhanced Filtration - Reporting and Recordkeeping~~))	
Subpart O - Consumer Confidence Reports	
141.153 (h)(6)	Contents of the reports.
Enhanced Filtration - Reporting and Recordkeeping	
141.175(b)	Individual filter reporting and follow-up action requirements for systems treating surface water with conventional, direct, or in-line filtration and serving at least 10,000 people.
Subpart Q - Public Notification	

141.201, excluding (3)(ii) of Table 1	General public notification requirements.
141.202, excluding (3) of Table 1	Tier 1 Public Notice - Form, manner, and frequency of notice.
141.203	Tier 2 Public Notice - Form, manner, and frequency of notice.
141.204	Tier 3 Public Notice - Form, manner, and frequency of notice.
141.205	Content of the public notice.
141.206	Notice to new billing units or new customers.
141.207	Special notice of the availability of unregulated contaminant monitoring results.
141.208	Special notice for exceedances of the SMCL for fluoride.
141.211	Special notice for *Cryptosporidium* monitoring failure.

Appendix A - NPDWR violations and situations requiring PN

Appendix B - Standard health effects language for PN

Appendix C - List of acronyms used in PN regulation

141.400	General requirements and applicability.
141.402(c)	Groundwater source microbial monitoring and analytical methods.
141.403 (b)(3)(i) through (iii)	Treatment technique requirements for groundwater systems.

Subpart T - Enhanced Filtration and Disinfection - Systems Serving Fewer Than 10,000 People

141.530 - 141.544	Disinfection profile and benchmark.
141.563	Follow-up actions required.
141.570, excluding (c)	Reporting requirements.

Subpart U and V - Initial Distribution System Evaluations and Stage 2 Disinfection Byproducts Requirements.

141.600 - 141.605	Initial distribution system evaluations.
141.620 - 141.629	Stage 2 Disinfection Byproducts Requirements.

Subpart W - Enhanced Treatment for *Cryptosporidium*

141.700-722 Enhanced Treatment for *Cryptosporidium*

Part 143 - National Secondary Drinking Water Regulations

143.1	Purpose.
143.2	Definitions.
143.3	Secondary maximum contaminant levels.
143.4	Monitoring.

Copies of the incorporated sections and subsections of Title

40 CFR are available from the Department of Health, P.O. Box 47822, Olympia, Washington 98504-7822, or by calling the department's drinking water hotline at 800-521-0323.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

WAC 246-290-100 Water system plan. (1) The purpose of this section is to establish a uniform process for purveyors to:

(a) Demonstrate the system's operational, technical, managerial, and financial capability to achieve and maintain compliance with relevant local, state, and federal plans and regulations;

(b) Demonstrate how the system will address present and future needs in a manner consistent with other relevant plans and local, state, and federal laws, including applicable land use plans;

(c) Establish eligibility for funding under chapter 246-296 WAC.

(2) Purveyors of the following categories of community public water systems shall submit a water system plan for review and approval by the department:

(a) Systems having one thousand or more services;

(b) Systems required to develop water system plans under the Public Water System Coordination Act of 1977 (chapter 70.116 RCW);

(c) Any system experiencing problems related to planning, operation, and/or management as determined by the department;

(d) All new systems;

(e) Any expanding system; and

(f) Any system proposing to use the document submittal exception process in WAC 246-290-125.

(3) The purveyor shall work with the department to establish the level of detail for a water system plan. In general, the scope and detail of the plan will be related to size, complexity, water supply characteristics, forecasted demand characteristics, past performance, and use of the water system. Project reports may be combined with a water system plan.

(4) In order to demonstrate system capacity, the water system plan shall address the following elements, as a minimum, for a period of at least twenty years into the future:

(a) Description of the water system, including:

(i) Ownership and management, including the current names, addresses, and telephone numbers of the owners, operators, and emergency contact persons for the system;

(ii) System history and background;

(iii) Related plans, such as coordinated water system plans, abbreviated coordinated water system plans, local land use plans, ((~~ground water~~)) groundwater management plans, and basin plans;

(iv) Service area maps, characteristics, agreements, and

policies. Water systems must include their existing service area and future service area. Municipal water suppliers must define their retail service area and meet the requirements under WAC 246-290-106. Municipal water suppliers must identify where their water rights place of use will be expanded to their service area if the requirements under WAC 246-290-107 have been met; and

(v) Satellite management, if applicable.

(b) Basic planning data, including:

(i) Current population, service connections, water use, and equivalent residential units; and

(ii) Sufficient water production and consumption data to identify trends including the following elements:

(A) Monthly and annual production totals for each source, including water purchased from another public water system;

(B) Annual usage totals for each customer class as determined by the purveyor;

(C) Annual usage totals for water supplied to other public water systems; and

(D) For systems serving one thousand or more total connections, a description of the seasonal variations in consumption patterns of each customer class defined by the purveyor.

(iii) Designated land use, zoning, future population, and water demand for a consecutive six-year and twenty-year planning period within the water system's service area.

(c) Demand forecasts, developed under WAC 246-290-221, for a consecutive six-year and twenty-year planning period. These shall show future use with and without savings expected from the system's water use efficiency program.

(d) For systems serving one thousand or more total connections, a demand forecast projecting demand if the measures deemed cost-effective per WAC 246-290-810 were implemented.

(e) System analysis, including:

(i) System design standards;

(ii) Water quality analysis;

(iii) System inventory description and analysis; and

(iv) Summary of system deficiencies.

(f) Water resource analysis, including:

(i) A water use efficiency program. Municipal water suppliers must meet the requirements in WAC 246-290-810;

(ii) Source of supply analysis, which includes:

(A) An evaluation of water supply alternatives if additional water rights will be pursued within twenty years; and

(B) A narrative description of the system's water supply characteristics and the foreseeable effect from current and future use on the water quantity and quality of any body of water from which its water is diverted or withdrawn based on existing data and studies;

(iii) A water shortage response plan as a component of the reliability and emergency response requirements under WAC 246-290-420;

(iv) Water right self-assessment;

(v) Water supply reliability analysis;

(vi) Interties; and

(vii) For systems serving one thousand or more total connections, an evaluation of opportunities for the use of reclaimed water, where they exist, as defined in RCW 90.46.010(4).

(g) Source water protection under WAC 246-290-135.

(h) Operation and maintenance program under WAC 246-290-415 and 246-290-654(5), as applicable.

(i) Improvement program, including a six-year capital improvement schedule.

(j) Financial program, including demonstration of financial viability by providing:

(i) A summary of past income and expenses;

(ii) A one-year balanced operational budget for systems serving one thousand or more connections or a six-year balanced operational budget for systems serving less than one thousand connections;

(iii) A plan for collecting the revenue necessary to maintain cash flow stability and to fund the capital improvement program and emergency improvements; and

(iv) An evaluation that has considered:

(A) The affordability of water rates; and

(B) The feasibility of adopting and implementing a rate structure that encourages water demand efficiency.

(k) Other documents, such as:

(i) Documentation of SEPA compliance;

(ii) Agreements; and

(iii) Comments from each local government with jurisdiction and adjacent utilities.

(5) Purveyors intending to implement the project report and construction document submittal exceptions authorized under WAC 246-290-125 must include:

(a) Standard construction specifications for distribution mains; and/or

(b) Design and construction standards for distribution-related projects, including:

(i) Description of project report and construction document internal review procedures, including engineering design review and construction completion reporting requirements;

(ii) Construction-related policies and requirements for external parties, including consumers and developers;

(iii) Performance and sizing criteria; and

(iv) General reference to construction materials and methods.

(6) The department, at its discretion, may require reports from purveyors identifying the progress in developing their water system plans.

(7) Purveyors shall transmit water system plans to adjacent utilities and each local government with jurisdiction, to assess consistency with ongoing and adopted planning efforts.

(8) Prior to department approval of a water system plan or a water system plan update, the purveyor shall:

(a) Hold an informational meeting for the water system

consumers and notify consumers in a way that is appropriate to the size of the water system; and

(b) Obtain the approval of the water system plan from the purveyor's governing body or elected governing board.

(9) Department approval of a water system plan shall be in effect for six years from the date of written approval unless:

(a) Major projects subject to SEPA as defined in WAC 246-03-030 (3)(a) are proposed that are not addressed in the plan;

(b) Changes occur in the basic planning data significantly affecting system improvements identified; or

(c) The department requests an updated plan or plan amendment.

(10) The purveyor shall update the plan and obtain department approval at least every six years. If the system no longer meets the conditions of subsection (2) of this section, the purveyor shall as directed by the department, either:

(a) Submit a water system plan amendment for review and approval with the scope to be determined by the department; or

(b) Meet the requirements under WAC 246-290-105.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

WAC 246-290-107 Place of use expansion. The place of use of a surface or ((~~ground water~~)) groundwater right may be expanded to include any portion of the approved service area that was not previously within the place of use for the water right when documented in an approved planning or engineering document under chapter 43.20 RCW or in accordance with procedures adopted under chapter 70.116 RCW. This occurs as an effect of the department's approval of a service area identified in a water system plan, water system plan amendment, small water system management program, engineering document, or as an effect of the local legislative authority's approval of a service area as part of a coordinated water system plan.

(1) The following conditions must be met:

(a) The municipal water supplier is in compliance with the terms of the water system plan or small water system management program, including those regarding water use efficiency.

(b) The alteration of the place of use is not inconsistent regarding an area added to the place of use with any local plans and regulations.

(c) The alteration of the place of use is not inconsistent regarding an area added to the place of use with any watershed plan approved under chapter 90.82 RCW or a comprehensive watershed plan approved under RCW 90.54.040(1) after September 3, 2003, if such a watershed plan has been approved for the area.

(2) As part of the planning or engineering document, municipal water suppliers must:

(a) Identify the portions of the service area where the place of use will be expanded.

(b) Document that subsection (1)(a) and (c) of this section are met.

(c) Meet the requirements of WAC 246-290-108 for the portions of the service area where the place of use will be expanded.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

WAC 246-290-130 Source approval. (1) Every purveyor shall obtain drinking water from the highest quality source feasible. No new source, previously unapproved source, or modification of an existing source shall be used as a public water supply without department approval. No intake or other connection shall be maintained between a public water system and a source of water not approved by the department.

(2) Before initiating source development or modification, the purveyor shall contact the department to identify submittal requirements.

(3) Any party seeking source approval shall provide the department sufficient documentation, in a project report, construction documents, or in supplemental documents, that the source:

(a) Is reasonable and feasible for the type and size of the system;

(b) May legally be used in conformance with state water rights laws;

(c) Supplies water that is physically and reliably available in the necessary quantities, as shown in:

(i) A hydrogeologic assessment of the proposed source;

(ii) A general description of the watershed, spring, and/or aquifer recharge area affecting the quantity or quality of flow, which includes seasonal variation and upstream water uses that may significantly affect the proposed source;

(iii) For ((~~ground water~~)) groundwater and spring sources, well source development data that are available from a pump test at the maximum design rate and duration, or are available from other sources of information, that establish pump settings (depth) in the well and demonstrate adequacy of water quantity to meet design criteria while not leading to water quality problems;

(iv) For ((~~ground water~~)) groundwater and spring sources, installation of a source meter or other equivalent device that reliably measures volume of flow into the system;

(d) Is, or is not, a GWI under WAC 246-290-640, and meets or can meet the applicable requirements for GWI sources as described in that section including treatment;

(e) Adequately provides for source protection, as shown in:

(i) For surface water and GWI sources, the watershed control program identified under WAC 246-290-135 and Part 6 of this chapter;

(ii) For wells, a preliminary department susceptibility assessment or equivalent information, and preliminary WHPA delineation and contaminant inventory, under the requirements for sanitary control and wellhead protection under WAC 246-290-135;

(f) Is designed and constructed in conformance with this chapter, and relevant requirements of chapter 173-160 WAC (department of ecology well construction standards);

(g) Meets water quality standards under WAC 246-290-310, as shown in an initial water quality analysis that includes, at a minimum, the following:

(i) Bacteriological;

(ii) Complete inorganic chemical and physical except that the MCL for arsenic under WAC 246-290-310 does not apply to TNC systems;

(iii) Complete VOC;

(iv) Radionuclides, if source approval is requested for a community system;

(v) SOC, except where waived or not required under WAC 246-290-310; and

(vi) Any other information required by the department relevant to the circumstances of the particular source.

Sources that otherwise would not meet water quality standards may be approved if treatment is provided.

(4) The required documentation under subsection (3) of this section shall include, at a minimum:

(a) A water right self-assessment;

(b) A map showing the project location and vicinity;

(c) A map depicting topography, distances to the surface water intake, well or spring from existing property lines, buildings, potential sources of contamination, ditches, drainage patterns, and any other natural or man-made features affecting the quality or quantity of water;

(d) The dimensions, location, and legal documentation of the SCA under WAC 246-290-135;

(e) A copy of the on-site inspection form completed by the department or local health department representative;

(f) A copy of the water well report including the unique well identification tag number, depth to open interval or top of screened interval, overall depth of well from the top of the casing, vertical elevation, and location (both plat location and latitude/longitude); and

(g) Documentation of source meter installation. The purveyor may utilize other documents, such as a water system plan, susceptibility assessment, wellhead protection program, project report, or construction documents, to provide the documentation and information to the department, provided that the documents are current, and the purveyor indicates the location in the document of the relevant information.

(5) If treatment of a source is necessary to meet water

quality standards, the purveyor may be required to meet the provisions of WAC 246-290-250 and Part 6 of this chapter, if applicable, prior to or as a condition of approval.

(6) An intertie must be adequately described in a written agreement between the purveyor and the supplier of the water, and otherwise meet the requirements of WAC 246-290-132.

(7) The purveyor shall not construct facilities for source development and use without prior approval of the department pursuant to the provisions of WAC 246-290-120.

(8) The purveyor may request a conditional source approval, such as one that sets limits on use or requires interim treatment, if further analysis of the quality of the source is required before final approval.

(9) For sources or supplies of water used by bottled water or ice plants to produce bottled water or ice:

(a) If the bottled water or ice plant is a Group A community water system and the plant uses the system's source for the water that is bottled or made into ice, the source and supply used for the bottled water and ice shall meet the applicable Group A requirements;

(b) If the bottled water or ice plant uses its own source for the water that is bottled or made into ice, and the plant is not a Group A community water system, the owner or operator shall obtain source approval from the department, and the source water shall meet the ongoing source water quality monitoring requirements for a Group A community system;

(c) If the bottled water or ice plant purchases the water for bottling or making ice from another source or supply, the water shall meet the minimum requirements for a Group A community water system, and the owner or operator of the plant shall ensure that the water meets the requirements;

(d) The source or supply for the water that is bottled or made into ice shall be protected from contamination prior to the bottling or ice making process; and

(e) In addition to the requirements imposed under this subsection, the processing of bottled water shall be subject to regulation by the state department of agriculture and the United States Food and Drug Administration.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

WAC 246-290-135 Source water protection. (1) The department may require monitoring and controls in addition to those specified in this section if((~~, in the opinion of~~)) the department((~~,~~)) determines a potential risk exists to the water quality of a source.

(2) SCA.

(a) The purveyor shall maintain an SCA around all sources for the purpose of protecting them from existing and potential sources of contamination.

(b) For wells and springs, the minimum SCA shall have a radius of one hundred feet (thirty meters) and two hundred feet (sixty meters) respectively, unless engineering justification demonstrates that a smaller area can provide an adequate level of source water protection. The justification shall address geological and hydrological data, well construction details, mitigation measures, and other relevant factors necessary to assure adequate sanitary control.

(c) The department may require a larger SCA than specified in (b) of this subsection, or additional mitigation measures if land use, geological, ((~~and/~~))or hydrological data support the decision. It shall be the purveyor's responsibility to obtain the protection needed.

(d) The purveyor shall prohibit the construction, storage, disposal, or application of any source of contamination within the SCA without the permission of the purveyor.

(e) The SCA shall be owned by the purveyor in fee simple, or the purveyor shall have the right to exercise complete sanitary control of the land through other legal provisions.

(f) A purveyor, owning all or part of the SCA in fee simple or having possession and control, shall send to the department copies of legal documentation, such as a duly recorded declaration of covenant, restricting the use of the land. This legal documentation shall state:

(i) Constructing, storing, disposing, or applying any source of contamination is prohibited without the permission of the purveyor; and

(ii) If any change in ownership of the system or SCA is considered, all affected parties shall be informed of these requirements.

(g) Where portions of the control area are in the possession and control of another, the purveyor shall obtain a duly recorded restrictive covenant which shall run with the land, restricting the use of the land in accordance with this chapter and provide the department with copies of the appropriate documentation.

(3) Wellhead protection.

(a) Purveyors of water systems using ((~~ground water~~)) groundwater or spring sources shall develop and implement a wellhead protection program.

(b) The wellhead protection program shall be part of the water system plan required under WAC 246-290-100 or the small water system management program required under WAC 246-290-105.

(c) The purveyor's wellhead protection program shall contain, at a minimum, the following elements:

(i) A completed susceptibility assessment or equivalent information;

(ii) WHPA delineation for each well, wellfield, or spring with the six month, one, five and ten year time of travel boundaries marked, or boundaries established using alternate criteria approved

by the department in those settings where ((~~ground water~~)) groundwater time of travel is not a reasonable delineation criteria. WHPA delineations shall be done in accordance with recognized methods such as those described in the following sources:

(A) Department guidance on wellhead protection; or

(B) EPA guidance for delineation of wellhead protection areas;

(iii) An inventory, including identification of site locations and owners/operators, of all known and potential ((~~ground water~~)) groundwater contamination sources located within the defined WHPA(s) having the potential to contaminate the source water of the well(s) or spring(s). This list shall be updated every two years;

(iv) Documentation of purveyor's notification to all owners/operators of known or potential sources of ((~~ground water~~)) groundwater contamination listed in (c)(B)(iii) of this subsection;

(v) Documentation of purveyor's notification to regulatory agencies and local governments of the boundaries of the WHPA(s) and the findings of the WHPA inventory;

(vi) A contingency plan to ensure consumers have an adequate supply of potable water in the event that contamination results in the temporary or permanent loss of the principal source of supply (major well(s) or wellfield); and

(vii) Documentation of coordination with local emergency incident responders (including police, fire and health departments), including notification of WHPA boundaries, results of susceptibility assessment, inventory findings, and contingency plan.

(4) Watershed control program.

(a) Purveyors of water systems using surface water or GWI sources shall develop and implement a watershed control program under Part 6 of chapter 246-290 WAC as applicable.

(b) The watershed control program shall be part of the water system plan required in WAC 246-290-100 or the small water system management program required in WAC 246-290-105.

(c) The purveyor's watershed control program shall contain, at a minimum, the following elements:

(i) Watershed description and inventory, including location, hydrology, land ownership and activities that may adversely affect source water quality;

(ii) An inventory of all potential surface water contamination sources and activities, including identification of site locations and owner/operators, located within the watershed and having the significant potential to contaminate the source water quality;

(iii) Watershed control measures, including documentation of ownership and relevant written agreements, and monitoring of activities and water quality;

(iv) System operation, including emergency provisions; and

(v) Documentation of water quality trends.

(d) The purveyor shall submit the watershed control program to the department for approval. Following department approval, the purveyor shall implement the watershed control program as approved.

(e) Purveyors of systems using unfiltered surface or GWI

sources and meeting the criteria to remain unfiltered as specified in WAC 246-290-690 shall submit an annual report to the department that summarizes the effectiveness of the watershed control program. Refer to WAC 246-290-690 for further information about this report.

(f) The purveyor shall update the watershed control program at least every six years, or more frequently if required by the department.

AMENDATORY SECTION (Amending WSR 99-07-021, filed 3/9/99, effective 4/9/99)

WAC 246-290-250 Treatment design. (1) Treatment systems or devices shall be piloted and designed to ensure finished water quality conforms to water quality standards established in WAC 246-290-310.

(2) Treatment systems or devices for surface water or GWI sources shall be designed in accordance with the provisions of Part 6 of this chapter and the applicable provisions herein.

(3) Predesign studies, including pilot studies as appropriate, shall be required for proposed surface water and GWI sources ((~~and those ground water sources requiring treatment~~)) and those groundwater sources requiring treatment. The goal of the predesign study shall be to establish the most effective method, considering economics, to produce satisfactory finished water quality meeting the requirements of this chapter and complying with the treatment technique requirements in Part 6 of chapter 246-290 WAC. The predesign study shall be included as part of the project report under WAC 246-290-110. Refer to WAC 246-290-676 for requirements relating specifically to the filtration facility pilot study. The purveyor shall not establish nor maintain a bypass to divert water around any feature of a treatment process, except by written permission of the department.

(4) All well and spring sources not determined to be GWI's shall have continuous disinfection that meets the ((~~operational~~)) requirements of WAC 246-290-451 ((~~(3) and (4)~~)). The department may modify the requirement for disinfection for public water systems that demonstrate the well or spring sources (not confirmed as GWI's) have satisfactory bacteriological histories at the source and have SCAs in accordance with WAC 246-290-135.

(5) Purveyors shall use appropriate treatment technologies, such as those outlined in department guidance on water treatment, and shall address water treatment facilities in their water system plans pursuant to WAC 246-290-100.

(6) Project reports for the design of treatment facilities shall meet the requirements of WAC 246-290-110.

(7) Construction specifications for treatment facilities shall meet the requirements of WAC 246-290-120.

AMENDATORY SECTION (Amending WSR 09-21-045, filed 10/13/09, effective 1/4/10)

WAC 246-290-300 Monitoring requirements. (1) General.

(a) The monitoring requirements specified in this section are minimums. The department may require additional monitoring when:

(i) Contamination is present or suspected in the water system;

(ii) A ((~~ground water~~)) groundwater source is determined to be a potential GWI;

(iii) The degree of source protection is not satisfactory;

(iv) Additional monitoring is needed to verify source vulnerability for a requested monitoring waiver;

(v) Under other circumstances as identified in a department order; or

(vi) Additional monitoring is needed to evaluate continuing effectiveness of a treatment process where problems with the treatment process may exist.

(b) Special purpose samples collected by the purveyor shall not count toward fulfillment of the monitoring requirements of this chapter unless the quality of data and method of sampling and analysis are acceptable to the department.

(c) The purveyor shall ensure samples required by this chapter are collected, transported, and submitted for analysis according to EPA-approved methods. The analyses shall be performed by a laboratory accredited by the state. Qualified water utility, accredited laboratory, health department personnel, and other parties approved by the department may conduct measurements for pH, temperature, residual disinfectant concentration, alkalinity, bromide, chlorite, TOC, SUVA, ((~~and~~)) turbidity, calcium, conductivity, orthophosphate, and silica as required by this chapter, provided, these measurements are made ((~~in accordance with~~)) according to EPA approved methods.

(d) Compliance samples required by this chapter shall be taken at locations listed in Table 3 of this section.

(e) Purveyors failing to comply with a monitoring requirement shall notify:

(i) The department under WAC 246-290-480; and

(ii) The owner or operator of any consecutive system served and the appropriate water system users under 40 CFR 141.201 and Part 7, Subpart A of this chapter.

(2) Selling and receiving water.

(a) Source monitoring. Purveyors, with the exception of those that "wheel" water to their consumers (i.e., sell water that has passed through another purchasing purveyor's distribution system), shall conduct source monitoring under this chapter for the sources under their control. The level of monitoring shall satisfy the monitoring requirements associated with the total population served by the source.

(b) Distribution system monitoring. The purveyor of a system that receives and distributes water shall perform distribution-related monitoring requirements. Monitoring shall include, but not be limited to, the following:

(i) Collect coliform samples under subsection (3) of this section;

(ii) Collect disinfection byproduct samples as required by subsection (6) of this section;

(iii) Perform the distribution system residual disinfectant concentration monitoring under subsection (6) of this section, and as required under WAC 246-290-451 or 246-290-694. Systems with fewer than one hundred connections shall measure residual disinfectant concentration at the same time and location that a routine or repeat coliform sample is collected, unless the department determines that more frequent monitoring is necessary to protect public health;

(iv) Perform lead and copper monitoring required under 40 CFR 141.86, 141.87, and 141.88;

(v) Perform the distribution system monitoring under 40 CFR 141.23(b) for asbestos if applicable;

(vi) Other monitoring as required by the department.

(c) Reduced monitoring for regional programs. The receiving purveyor may receive reductions in the coliform, lead and copper, disinfection byproduct (including THMs and HAA5) and distribution system disinfectant residual concentration monitoring requirements, provided the receiving system:

(i) Purchases water from a purveyor that has a department-approved regional monitoring program;

(ii) Has a written agreement with the supplying system or regional water supplier that is acceptable to the department, and which identifies the responsibilities of both the supplying and receiving system(s) with regards to monitoring, reporting and maintenance of the distribution system; and

(iii) Has at least one compliance monitoring location for disinfection byproducts, if applicable.

(d) Periodic review of regional programs. The department may periodically review the sampling records of public water systems participating in a department-approved monitoring program to determine if continued reduced monitoring is appropriate. If the department determines a change in the monitoring requirements of the receiving system is appropriate:

(i) The department shall notify the purveyor of the change in monitoring requirements; and

(ii) The purveyor shall conduct monitoring as directed by the department.

(3) Bacteriological.

(a) The purveyor shall be responsible for collection and submittal of coliform samples from representative points throughout the distribution system. Samples shall be collected after the first service and at regular time intervals each month the system provides water to consumers. Samples shall be collected that represent normal system operating conditions.

(i) Systems providing disinfection treatment shall((~~, when taking a~~)) measure the residual disinfectant concentration within the distribution system at the same time and location of routine ((~~or~~)) and repeat samples((~~, measure residual disinfectant~~

~~concentration within the distribution system at the same time and location and comply with the residual disinfection monitoring requirements under WAC 246-290-451~~)).

(ii) Systems providing disinfection treatment shall assure that disinfectant residual concentrations are measured and recorded on all coliform sample report forms submitted for compliance purposes.

(b) Coliform monitoring plan.

(i) The purveyor shall prepare a written coliform monitoring plan and base routine monitoring upon the plan. The plan shall include coliform sample collection sites and a sampling schedule.

(ii) The purveyor shall:

(A) Keep the coliform monitoring plan on file with the system and make it available to the department for inspection upon request;

(B) Revise or expand the plan at any time the plan no longer ensures representative monitoring of the system, or as directed by the department; and

(C) Submit the plan to the department for review and approval when requested and as part of the water system plan required under WAC 246-290-100.

(c) Monitoring frequency. The number of required routine coliform samples is based on total population served.

(i) Purveyors of **community** systems shall collect and submit for analysis no less than the number of routine samples listed in Table 1 during each calendar month of operation;

(ii) Unless directed otherwise by the department, purveyors of **noncommunity** systems shall collect and submit for analysis no less than the number of samples required in Table 1, and no less than required under 40 CFR 141.21. Each month's population shall be based on the average daily population and shall include all residents and nonresidents served during that month. During months when the average daily population served is less than twenty-five, routine sample collection is not required when:

(A) Using only protected ((~~ground water~~)) groundwater sources;

(B) No coliform were detected in samples during the previous month; and

(C) One routine sample has been collected and submitted for analysis during one of the previous two months.

(iii) Purveyors of systems serving both a resident and a nonresident population shall base their minimum sampling requirement on the total of monthly populations served, both resident and nonresident as determined by the department, but no less than the minimum required in Table 1; and

(iv) Purveyors of systems with a nonresident population lasting two weeks or less during a month shall sample as directed by the department. Sampling shall be initiated at least two weeks prior to the time service is provided to consumers.

(v) Purveyors of TNC systems shall not be required to collect routine samples in months where the population served is zero or the system has notified the department of an unscheduled closure.

(d) Invalid samples. When a routine or repeat coliform sample

is determined invalid under WAC 246-290-320 (2)(d), the purveyor shall:

(i) Not include the sample in the determination of monitoring compliance; and

(ii) Take follow-up action as defined in WAC 246-290-320 (2)(d).

(e) Assessment source water monitoring. If directed by the department, a groundwater system must conduct assessment source water monitoring which may include, but is not limited to, collection of at least one representative groundwater source sample each month the source provides groundwater to the public, for a minimum of twelve months.

(i) Sampling must be conducted as follows:

(A) Source samples must be collected at a location prior to any treatment. If the water system's configuration does not allow sampling at the source itself, the department may approve an alternative source sampling location representative of the source water quality.

(B) Source samples must be at least 100 mL in size and must be analyzed for *E. coli* using one of the analytical methods under 40 CFR 141.402(c).

(ii) A groundwater system may use a triggered source water sample collected under WAC 246-290-320 (2)(g) to meet the requirements for assessment source water monitoring.

(iii) Groundwater systems with an *E. coli* positive assessment source water sample that is not invalidated under WAC 246-290-320 (2)(g)(vii), and consecutive systems receiving water from this source must:

(A) Provide Tier 1 public notice under Part 7, Subpart A of this chapter and special notification under WAC 246-290-71005 (4) and (5); and

(B) Take corrective action as required under WAC 246-290-453(1).

(iv) The purveyor of a groundwater system that fails to conduct assessment source water monitoring as directed by the department shall provide Tier 2 public notice under Part 7, Subpart A of this chapter.

(f) The purveyor using a surface water or GWI source shall collect representative source water samples for bacteriological density analysis under WAC 246-290-664 and 246-290-694 as applicable.

TABLE 1

MINIMUM MONTHLY ROUTINE COLIFORM SAMPLING REQUIREMENTS

Population Served [1]		Minimum Number of Routine Samples/Calendar Month	
During Month		When NO samples with a coliform presence were collected during the previous month	When ANY samples with a coliform presence were collected during the previous month
1 -	1,000	1*	5
1,001 -	2,500	2*	5
2,501 -	3,300	3*	5
3,301 -	4,100	4*	5
4,101 -	4,900	5	5
4,901 -	5,800	6	6
5,801 -	6,700	7	7
6,701 -	7,600	8	8
7,601 -	8,500	9	9
8,501 -	12,900	10	10
12,901 -	17,200	15	15
17,201 -	21,500	20	20
21,501 -	25,000	25	25
25,001 -	33,000	30	30
33,001 -	41,000	40	40
41,001 -	50,000	50	50
50,001 -	59,000	60	60
59,001 -	70,000	70	70
70,001 -	83,000	80	80
83,001 -	96,000	90	90
96,001 -	130,000	100	100
130,001 -	220,000	120	120
220,001 -	320,000	150	150
320,001 -	450,000	180	180
450,001 -	600,000	210	210
600,001 -	780,000	240	240
780,001 -	970,000	270	270
970,001 -	1,230,000[3]	300	300

[1] Does not include the population of a consecutive system that purchases water. The sampling requirement for consecutive systems is a separate determination based upon the population of that system.

[2] Noncommunity systems using only protected ((~~ground water~~)) groundwater sources and serving less than 25 individuals, may collect and submit for analysis, one sample every three months.

[3] Systems serving populations larger than 1,230,000 shall contact the department for the minimum number of samples required per month.

*In addition to the provisions of subsection (1)(a) of this section, if a system of this size cannot show evidence of having been subject to a sanitary survey on file with the department, or has been determined to be at risk to bacteriological concerns following a survey, the minimum number of samples required per month may be increased by the department after additional consideration of factors such as monitoring history, compliance record, operational problems, and water quality concerns for the system.

(4) Inorganic chemical and physical.

(a) A complete inorganic chemical and physical analysis shall

consist of the primary and secondary chemical and physical substances.

(i) Primary chemical and physical substances are antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate (as N), nitrite (as N), selenium, sodium, thallium, and for unfiltered surface water, turbidity. (Except that the MCL for arsenic under WAC 246-290-310 does not apply to TNC systems.)

(ii) Secondary chemical and physical substances are chloride, color, hardness, iron, manganese, specific conductivity, silver, sulfate, total dissolved solids*, and zinc.

* Required only when specific conductivity exceeds seven hundred micromhos/centimeter.

(b) Purveyors shall monitor for all primary and secondary chemical and physical substances identified in Table 4 and Table 5. Samples shall be collected in accordance with the monitoring requirements referenced in 40 CFR 141.23 introductory text, 141.23(a) through 141.23(j), excluding (i)(2), and 40 CFR 143.4, except for composite samples for systems serving less than three thousand three hundred one persons. For these systems, compositing among different systems may be allowed if the systems are owned or operated by a department-approved satellite management agency.

(c) Samples required by this subsection shall be taken at designated locations under 40 CFR 141.23(a) through 141.23(j), excluding (i)(2), and 40 CFR 143.4, and Table 3 herein.

(i) Wellfield samples shall be allowed from department designated wellfields; and

(ii) Under 40 CFR 141.23 (a)(3), alternate sampling locations may be used if approved by the department. The process for determining these alternate sites is described in department guidance. Purveyors of community and NTNC systems may ask the department to approve an alternate sampling location for multiple sources within a single system that are blended prior to entry to the distribution system. Alternate sampling plans shall address the following:

(A) Source vulnerability;

(B) Individual source characteristics;

(C) Previous water quality information;

(D) Status of monitoring waiver applications; and

(E) Other information deemed necessary by the department.

(d) Composite samples:

(i) Under 40 CFR 141.23 (a)(4), purveyors may ask the certified lab to composite samples representing as many as five individual samples from within one system. Sampling procedures and protocols are outlined in department guidance; and

(ii) For systems serving a population of less than three thousand three hundred one, the department may approve composite sampling between systems when those systems are part of an approved satellite management agency.

(e) When the purveyor provides treatment for one or more inorganic chemical or physical contaminants, the department may require the purveyor to sample before and after treatment. The department shall notify the purveyor if and when this additional

source sampling is required.

(f) Inorganic monitoring plans.

(i) Purveyors of community and NTNC systems shall prepare an inorganic chemical monitoring plan and base routine monitoring on the plan.

(ii) The purveyor shall:

(A) Keep the monitoring plan on file with the system and make it available to the department for inspection upon request;

(B) Revise or expand the plan at any time the plan no longer reflects the monitoring requirements, procedures or sampling locations, or as directed by the department; and

(C) Submit the plan to the department for review and approval when requested and as part of the water system plan required under WAC 246-290-100.

(g) Monitoring waivers.

(i) Purveyors may request in writing, a monitoring waiver from the department for any nonnitrate/nitrite inorganic chemical and physical monitoring requirements identified in this chapter.

(ii) Purveyors requesting a monitoring waiver shall comply with applicable subsections of 40 CFR 141.23 (b)(3), and 141.23 (c)(3).

(iii) Purveyors shall update and resubmit requests for waiver renewals as applicable during each compliance cycle or period or more frequently as directed by the department.

(iv) Failure to provide complete and accurate information in the waiver application shall be grounds for denial of the monitoring waiver.

(h) The department may require the purveyor to repeat sample for confirmation of results.

(i) Purveyors with emergency and seasonal sources shall monitor those sources when they are in use.

(5) Lead and copper. Monitoring for lead and copper shall be conducted in accordance with 40 CFR 141.86 (a) - (f), 141.87, and 141.88.

(6) Disinfection byproducts (DBP), disinfectant residuals, and disinfection byproduct precursors (DBPP). Purveyors of community and NTNC systems providing water treated with chemical disinfectants and TNC systems using chlorine dioxide shall monitor as follows:

(a) General requirements.

(i) Systems shall collect samples during normal operating conditions.

(ii) All monitoring shall be conducted in accordance with the analytical requirements in 40 CFR 141.131.

(iii) Systems may consider multiple wells drawing from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required, with department approval in accordance with department guidance.

(iv) Systems required to monitor under this subsection shall prepare and implement a monitoring plan in accordance with 40 CFR 141.132(f) or 40 CFR 141.622, as applicable.

(A) Community and NTNC surface water and GWI systems that

deliver water that has been treated with a disinfectant other than ultraviolet light and serve more than three thousand three hundred people shall submit a monitoring plan to the department.

(B) The department may require submittal of a monitoring plan from systems not specified in subsection (6)(a)(iv)(A) of this section, and may require revision of any monitoring plan.

(C) Failure to monitor for TTHM, HAA5, or bromate will be treated as a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages ((~~and the systems' failure to monitor makes it impossible to determine compliance with MCL's or MRDL's~~)).

(D) Failure to monitor for chlorine and chloramine residuals will be treated as a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages and the systems' failure to monitor makes it impossible to determine compliance with the MRDLs.

(b) Disinfection byproducts - **Community** and **NTNC** systems only.

(i) TTHMs and HAA5.

(A) Systems shall monitor for TTHM and HAA5 in accordance with 40 CFR 141.132 (b)(1)(i) until the dates set in Table 2. On and after the dates set in Table 2, the systems shall monitor in accordance with 40 CFR 141.620, 141.621, and 141.622.

Table 2

Population Served	Routine Monitoring Start Date[1]
100,000 or more	April 1, 2012
50,000 - 99,999	October 1, 2012
10,000 - 49,999	October 1, 2013
Less than 10,000	October 1, 2013[2]
	October 1, 2014[3]

[1] Systems that have nonemergency interties with other systems must comply with the dates associated with the largest system in their combined distribution system.

[2] Surface water and GWI systems that did not have to do *Cryptosporidium* monitoring under 40 CFR 141.701 (a)(4).

[3] Surface water and GWI systems that also did *Cryptosporidium* monitoring under 40 CFR 141.701 (a)(4).

(B) With department approval, systems may reduce monitoring in accordance with 40 CFR 141.132 (b)(1)(ii) and (iii), or 40 CFR 141.623, as applicable.

(C) Systems on department-approved reduced monitoring schedules may be required to return to routine monitoring, or initiate increased monitoring in accordance with 40 CFR 141.132 (b)(1)(iv), 40 CFR 141.625, or 40 CFR 141.627, as applicable.

(D) The department may return systems on increased monitoring to routine monitoring if, after one year, annual average results for TTHMs and HAA5 are less than or equal to 0.060 mg/L and 0.045 mg/L, respectively, or monitoring results are consistently below the MCLs indicating that increased monitoring is no longer necessary. After the dates set in Table 2, systems must meet

requirements of 40 CFR 141.628 and 40 CFR 141.625(c) to return to routine monitoring.

(E) After the dates set in Table 2, systems must calculate operational evaluation levels each calendar quarter and take action, as needed, in accordance with 40 CFR 141.626.

(F) NTNC systems serving ten thousand or more people and community systems must comply with the provisions of 40 CFR Subpart U - Initial Distribution System Evaluation at:

40 CFR 141.600	General requirements.
40 CFR 141.601	Standard monitoring.
40 CFR 141.602	System specific studies.
40 CFR 141.603	40/30 certification.
40 CFR 141.604	Very small system waivers.
40 CFR 141.605	Subpart V compliance monitoring location recommendations.

(ii) Chlorite - Only systems that use **chlorine dioxide.**

(A) Systems using chlorine dioxide shall conduct daily and monthly monitoring in accordance with 40 CFR 141.132 (b)(2)(i) and additional chlorite monitoring in accordance with 40 CFR 141.132 (b)(2)(ii).

(B) With department approval, monthly monitoring may be reduced in accordance with 40 CFR 141.132 (b)(2)(iii)(B). Daily monitoring at entry to distribution required by 40 CFR 141.132 (b)(2)(i)(A) may not be reduced.

(iii) Bromate - Only systems that use **ozone.**

(A) Systems using ozone for disinfection or oxidation must conduct bromate monitoring in accordance with 40 CFR 141.132 (b)(3)(i).

(B) With department approval, monthly bromate monitoring may be reduced to once per quarter in accordance with 40 CFR 141.132 (b)(3)(ii)(B).

(c) Disinfectant residuals.

(i) Chlorine and chloramines. Systems that deliver water continuously treated with chlorine or chloramines, including consecutive systems, shall monitor and record the residual disinfectant level in the distribution system under WAC 246-290-300 (2)(b), 246-290-451((~~(6)~~)) (7), 246-290-664(6), or 246-290-694(8), but in no case less than as required by 40 CFR 141.74 (b)(6), 40 CFR 141.74 (c)(3), 40 CFR 141.132(c), or 40 CFR 141.624.

(ii) Chlorine dioxide. Community, NTNC, or TNC systems that use chlorine dioxide shall monitor in accordance with 40 CFR 141.132 (c)(2) and record results.

(d) Disinfection byproducts precursors.

Community and NTNC surface water or GWI systems that use conventional filtration with sedimentation as defined in WAC 246-290-660(3) shall monitor under 40 CFR 141.132(d), and meet the requirements of 40 CFR 141.135.

(7) Organic chemicals.

(a) Purveyors of community and NTNC water systems shall comply with monitoring requirements under 40 CFR 141.24 (a) - (d), 141.24

(f)(1) - (f)(15), 141.24 (f)(18) - (19), 141.24 (f)(21), 141.24 (g)(1) - (9), 141.24 (g)(12) - (14), 141.24 (h)(1) - (11), and 141.24 (h)(14) - (17).

(b) Sampling locations shall be as defined in 40 CFR 141.24(f), 141.24(g), and 141.24(h).

(i) Wellfield samples shall be allowed from department designated wellfields; and

(ii) Under 40 CFR 141.24 (f)(3) and 141.24 (h)(3), alternate sampling locations may be allowed if approved by the department. These alternate locations are described in department guidance. Purveyors may ask the department to approve an alternate sampling location for multiple sources within a single system that are blended prior to entry to the distribution system. The alternate sampling location shall consider the following:

(A) Source vulnerability;

(B) An updated organic monitoring plan showing location of all sources with current and proposed sampling locations;

(C) Individual source characteristics;

(D) Previous water quality information;

(E) Status of monitoring waiver applications; and

(F) Other information deemed necessary by the department.

(c) Composite samples:

(i) Purveyors may ask the certified lab to composite samples representing as many as five individual samples from within one system. Sampling procedures and protocols are outlined in department guidance;

(ii) For systems serving a population of less than three thousand three hundred one, the department may approve composite sampling between systems when those systems are part of an approved satellite management agency.

(d) The department may require the purveyor to sample both before and after treatment for one or more organic contaminants. The department shall notify the purveyor if and when this additional source sampling is required.

(e) Organic chemical monitoring plans.

(i) Purveyors of community and NTNC systems shall prepare an organic chemical monitoring plan and base routine monitoring on the plan.

(ii) The purveyor shall:

(A) Keep the monitoring plan on file with the system and make it available to the department for inspection upon request;

(B) Revise or expand the plan at any time the plan no longer reflects the monitoring requirements, procedures or sampling locations, or as directed by the department; and

(C) Submit the plan to the department for review and approval when requested and as part of the water system plan required under WAC 246-290-100.

(f) Monitoring waivers.

(i) Purveyors may request in writing, a monitoring waiver from the department for any organic monitoring requirement except those relating to unregulated VOCs;

(ii) Purveyors requesting a monitoring waiver shall comply

with 40 CFR 141.24 (f)(7), 141.24 (f)(10), 141.24 (h)(6), and 141.24 (h)(7);

(iii) Purveyors shall update and resubmit requests for waiver renewals as directed by the department; and

(iv) Failure to provide complete and accurate information in the waiver application shall be grounds for denial of the monitoring waiver.

(g) Purveyors with emergency and seasonal sources shall monitor those sources under the applicable requirements of this section when they are actively providing water to consumers.

(8) Radionuclides. Monitoring for radionuclides shall be conducted under 40 CFR 141.26.

(9) *Cryptosporidium* and *E. coli* source monitoring. Purveyors with surface water or GWI sources shall monitor the sources in accordance with 40 CFR 141.701 and 702.

(10) Other substances.

On the basis of public health concerns, the department may require the purveyor to monitor for additional substances.

TABLE 3

MONITORING LOCATION

Sample Type	Sample Location
Asbestos	One sample from distribution system or if required by department, from the source.
Bacteriological	From representative points throughout distribution system.
Cryptosporidium and *E. coli* (Source Water) - WAC 246-290-630(16)	Under 40 CFR 141.703.
Complete Inorganic Chemical & Physical	From a point representative of the source, after treatment, and prior to entry to the distribution system.
Lead/Copper	From the distribution system at targeted sample tap locations.
Nitrate/Nitrite	From a point representative of the source, after treatment, and prior to entry to the distribution system.
Disinfection Byproducts - TTHMs and HAA5 - WAC 246-290-300(6)	Under 40 CFR 141.132 (b)(1) (Subpart L of the CFR).
Disinfection Byproducts - TTHMs and HAA5 - WAC 246-290-300(7)	Under 40 CFR 141.600 - 629 (IDSE and LRAA in Subparts U and V of the CFR).
Disinfection Byproducts - Chlorite (Systems adding chlorine dioxide)	Under 40 CFR 141.132 (b)(2).
Disinfection Byproducts - Bromate (Systems adding ozone)	Under 40 CFR 141.132 (b)(3).
Disinfectant Residuals - Chlorine and Chloramines	Under 40 CFR 141.132 (c)(1).
Disinfectant Residuals - Chlorine dioxide	Under 40 CFR 141.132 (c)(2).

Sample Type	Sample Location
Disinfection Precursors - Total Organic Carbon (TOC)	Under 40 CFR 141.132(d).
Disinfection Precursors - Bromide (Systems using ozone)	From the source before treatment.
Radionuclides	From a point representative of the source, after treatment and prior to entry to distribution system.
Organic Chemicals (VOCs & SOCs)	From a point representative of the source, after treatment and prior to entry to distribution system.
Other Substances (unregulated chemicals)	From a point representative of the source, after treatment, and prior to entry to the distribution system, or as directed by the department.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

WAC 246-290-320 Follow-up action. (1) General.

(a) When an MCL or MRDL violation or exceedance occurs, the purveyor shall take follow-up action as described in this section.

(b) When a primary standard violation occurs, the purveyor shall:

(i) Notify the department under WAC 246-290-480;

(ii) Notify the consumers served by the system and the owner or operator of any consecutive system served in accordance with 40 CFR 141.201 through 208, and Part 7, Subpart A of this chapter;

(iii) Determine the cause of the contamination; and

(iv) Take action as directed by the department.

(c) When a secondary standard violation occurs, the purveyor shall notify the department and take action as directed by the department.

(d) The department may require additional sampling for confirmation of results.

(2) Bacteriological.

(a) When coliform bacteria are present in any sample and the sample is not invalidated under (d) of this subsection, the purveyor shall ensure the following actions are taken:

(i) The sample is analyzed for fecal coliform or *E. coli*. When a sample with a coliform presence is not analyzed for *E. coli* or fecal coliforms, the sample shall be considered as having a fecal coliform presence for MCL compliance purposes;

(ii) Repeat samples are collected in accordance with (b) of this subsection;

(iii) Triggered source water monitoring is conducted in accordance with (g) of this subsection unless the department determines and documents in writing that the total coliform positive sample collected was caused by a distribution system deficiency;

(iv) The department is notified in accordance with WAC 246-290-480; and

((~~(iv)~~)) (v) The cause of the coliform presence is determined and corrected.

(b) Repeat samples.

(i) The purveyor shall collect repeat samples in order to confirm the original sample results and to determine the cause of the coliform presence. Additional treatment, such as batch or shock chlorination, shall not be instituted prior to the collection of repeat samples unless prior authorization by the department is given. Following collection of repeat samples, and before the analytical results are known, there may be a need to provide interim precautionary treatment or other means to insure public health protection. The purveyor shall contact the department to determine the best interim approach in this situation.

(ii) The purveyor shall collect and submit for analysis a set of repeat samples for every sample in which the presence of coliforms is detected. A set of repeat coliform samples consists of:

(A) Four repeat samples for systems collecting one routine coliform sample each month; or

(B) Three repeat samples for all systems collecting more than one routine coliform sample each month.

(iii) The purveyor shall collect repeat sample sets according to Table 7;

(iv) The purveyor shall collect one set of repeat samples for each sample with a coliform presence. All samples in a set of repeat samples shall be collected on the same day and submitted for analysis within twenty-four hours after notification by the laboratory of a coliform presence, or as directed by the department.

(v) When repeat samples have coliform presence, the purveyor shall:

(A) Contact the department and collect a minimum of one additional set of repeat samples as directed by the department; or

(B) Collect one additional set of repeat samples for each sample where coliform presence was detected.

(vi) The purveyor of a system providing water to consumers via a single service shall collect repeat samples from the same location as the sample with a coliform presence. The set of repeat samples shall be collected:

(A) On the same collection date;

(B) Over consecutive days with one sample collected each day until the required samples in the set of repeat samples are collected; or

(C) As directed by the department.

(vii) If a sample with a coliform presence was collected from

the first two or last two active services, the purveyor shall monitor as directed by the department;

(viii) The purveyor may change a previously submitted routine sample to a sample in a set of repeat samples when the purveyor:

(A) Collects the sample within five active adjacent service connections of the location from which the initial sample with a coliform presence was collected;

(B) Collects the sample after the initial sample with a coliform presence was submitted for analysis;

(C) Collects the sample on the same day as other samples in the set of repeat samples, except under (b)(iv) of this subsection; and

(D) Requests and receives approval from the department for the change.

(ix) The department may determine that sets of repeat samples specified under this subsection are not necessary during a month when a nonacute coliform MCL violation is determined for the system.

Table 7
REPEAT SAMPLE REQUIREMENTS

# OF ROUTINE SAMPLES COLLECTED EACH MONTH	# OF SAMPLES IN A SET OF REPEAT SAMPLES	LOCATIONS FOR REPEAT SAMPLES (COLLECT AT LEAST ONE SAMPLE PER SITE)
1	4	♢ Site of previous sample with a coliform presence ♢ Within 5 active services upstream of site of sample with a coliform presence ♢ Within 5 active services downstream of site of sample with a coliform presence ♢ At any other active service or from a location most susceptible to contamination (i.e., well or reservoir)
more than 1	3	♢ Site of previous sample with a coliform presence ♢ Within 5 active services upstream of site of sample with a coliform presence ♢ Within 5 active services downstream of site of sample with a coliform presence

(c) Monitoring frequency following a coliform presence. Systems having one or more coliform presence samples that were not invalidated during the previous month shall collect and submit for analysis the minimum number of samples shown in the last column of Table 2.

(i) The purveyor may obtain a reduction in the monitoring frequency requirement when one or more samples with a coliform presence were collected during the previous month, if the purveyor proves to the satisfaction of the department;

(A) The cause of the sample with a coliform presence; and

(B) The problem is corrected before the end of the next month

the system provides water to the public.

(ii) If the monitoring frequency requirement is reduced, the purveyor shall collect and submit at least the minimum number of samples required when no samples with a coliform presence were collected during the previous month.

(d) Invalid samples. Routine and repeat coliform samples may be determined to be invalid under any of the following conditions:

(i) A certified laboratory determines that the sample results show:

(A) Multiple tube technique cultures that are turbid without appropriate gas production;

(B) Presence-absence technique cultures that are turbid in the absence of an acid reaction;

(C) Occurrence of confluent growth patterns or growth of TNTC (too numerous to count) colonies without a surface sheen using a membrane filter analytic technique;

(ii) The analyzing laboratory determines there is excess debris in the sample.

(iii) The analyzing laboratory establishes that improper sample collection or analysis occurred;

(iv) The department determines that a nondistribution system problem has occurred as indicated by:

(A) All samples in the set of repeat samples collected at the same location, including households, as the original coliform presence sample also are coliform presence; and

(B) All other samples from different locations (households, etc.) in the set of repeat samples are free of coliform.

(v) The department determines a coliform presence result is due to a circumstance or condition that does not reflect water quality in the distribution system.

(e) Follow-up action when an invalid sample is determined. The purveyor shall take the following action when a coliform sample is determined to be invalid:

(i) Collect and submit for analysis an additional coliform sample from the same location as each invalid sample within twenty-four hours of notification of the invalid sample; or

(ii) In the event that it is determined that the invalid sample resulted from circumstances or conditions not reflective of distribution system water quality, collect a set of samples in accordance with Table 7; and

(iii) Collect and submit for analysis samples as directed by the department.

(f) Invalidated samples shall not be included in determination of the sample collection requirement for compliance with this chapter.

(g) Triggered source water monitoring.

(i) All groundwater systems with their own groundwater source(s) must conduct triggered source water monitoring unless the following conditions exist:

(A) The system has submitted a project report and received approval that it provides at least 4-log treatment of viruses (using inactivation, removal, or a department approved combination

of 4-log virus inactivation and removal) before or at the first customer for each groundwater source; and

(B) The system is conducting compliance monitoring under WAC 246-290-453(2).

(ii) Any groundwater source sample required under this subsection must be collected at the source prior to any treatment unless otherwise approved by the department.

(iii) Any source sample collected under this subsection must be at least 100 mL in size and must be analyzed for *E. coli* using one of the analytical methods under 40 CFR 141.402(c).

(iv) Groundwater systems must collect at least one sample from each groundwater source in use at the time a routine sample collected under WAC 246-290-300(3) is total coliform-positive and not invalidated under (d) of this subsection. These source samples must be collected within twenty-four hours of notification of the total coliform-positive sample. The following exceptions apply:

(A) The twenty-four hour time limit may be extended if granted by the department and will be determined on a case-by-case basis. If an extension is granted, the system must sample by the deadline set by the department.

(B) Systems with more than one groundwater source may meet the requirements of (g)(iv) of this subsection by sampling a representative groundwater source or sources. The system must have an approved triggered source water monitoring plan that identifies one or more groundwater sources that are representative of each monitoring site in the system's coliform monitoring plan under WAC 246-290-300 (3)(b). This plan must be approved by the department before representative sampling will be allowed.

(C) Groundwater systems serving one thousand people or fewer may use a repeat sample collected from a groundwater source to meet the requirements of (b) and (g)(iv) of this subsection. If the repeat sample collected from the groundwater source is *E. coli* positive, the system must comply with (g)(v) of this subsection.

(v) Groundwater systems with an *E. coli* positive source water sample that is not invalidated under (g)(vii) of this subsection, must:

(A) Provide Tier 1 public notice under Part 7, Subpart A of this chapter and special notification under WAC 246-290-71005 (4) and (5);

(B) If directed by the department, take corrective action as required under WAC 246-290-453(1); and

(C) Systems that are not directed by the department to take corrective action must collect five additional samples from the same source within twenty-four hours of being notified of the *E. coli* positive source water sample. If any of the five additional samples are *E. coli* positive, the system must take corrective action under WAC 246-290-453(1).

(vi) Any consecutive groundwater system that has a total coliform-positive routine sample collected under WAC 246-290-300(3) and not invalidated under (d) of this subsection, must notify each wholesale system it receives water from within twenty-four hours of being notified of the total coliform-positive sample and comply

with (g) of this subsection.

(A) A wholesale groundwater system that receives notice from a consecutive system under (g)(vi) of this subsection must conduct triggered source water monitoring under (g) of this subsection unless the department determines and documents in writing that the total coliform-positive sample collected was caused by a distribution system deficiency in the consecutive system.

(B) If the wholesale groundwater system source sample is *E. coli* positive, the wholesale system must notify all consecutive systems served by that groundwater source within twenty-four hours of being notified of the results and must meet the requirements of (g)(v) of this subsection.

(C) Any consecutive groundwater system receiving water from a source with an *E. coli* positive sample must notify all their consumers as required under (g)(v)(A) of this subsection.

(vii) An *E. coli* positive groundwater source sample may be invalidated only if the following conditions apply:

(A) The system provides the department with written notice from the laboratory that improper sample analysis occurred; or

(B) The department determines and documents in writing that there is substantial evidence that the *E. coli* positive groundwater sample is not related to source water quality.

(viii) If the department invalidates an *E. coli* positive groundwater source sample, the system must collect another source water sample within twenty-four hours of being notified by the department of its invalidation decision and have it analyzed using the same analytical method. The department may extend the twenty-four hour time limit under (g)(iv)(A) of this subsection.

(ix) Groundwater systems that fail to meet any of the monitoring requirements of (g) of this subsection must conduct Tier 2 public notification under Part 7, Subpart A of this chapter.

(3) Inorganic chemical and physical follow-up monitoring shall be conducted in accordance with the following:

(a) For nonnitrate/nitrite primary inorganic chemicals, 40 CFR 141.23 (a)(4), 141.23 (b)(8), 141.23 (c)(7), 141.23 (c)(9), 141.23 (f)(1), 141.23(g), 141.23(m) and 141.23(n);

(b) For nitrate, 40 CFR 141.23 (a)(4), 141.23 (d)(2), 141.23 (d)(3), 141.23 (f)(2), 141.23(g), 141.23(m), 141.23(n), and 141.23(o);

(c) For nitrite, 40 CFR 141.23 (a)(4), 141.23 (e)(3), 141.23 (f)(2), and 141.23(g); or

(d) The purveyor of any public water system providing service that has secondary inorganic MCL exceedances shall take follow-up action as required by the department. Follow-up action shall be commensurate with the degree of consumer acceptance of the water quality and their willingness to bear the costs of meeting the secondary standard. For new community water systems and new nontransient noncommunity water systems without active consumers, treatment for secondary contaminant MCL exceedances will be required.

(4) Lead and copper follow-up monitoring shall be conducted in accordance with 40 CFR 141.85(d), 141.86 (d)(2), 141.86 (d)(3),

141.87(d) and 141.88(b) through 141.88(d).

(5) Turbidity.

Purveyors monitoring turbidity in accordance with Part 6 of this chapter shall provide follow-up under WAC 246-290-634.

(6) Organic chemicals. Follow-up monitoring shall be conducted in accordance with the following:

(a) For VOCs, 40 CFR 141.24 (f)(11) through 141.24 (f)(15), and 141.24 (f)(22); or

(b) For SOCs, 40 CFR 141.24(b), 141.24(c) and 141.24 (h)(7) through 141.24 (h)(11), and 141.24 (h)(20).

(7) Radionuclide follow-up monitoring shall be conducted under 40 CFR 141.26 (a)(2)(iv), 141.26 (a)(3)(ii) through (v), 141.26 (a)(4), 141.26 (b)(6), and 141.26 (c)(5).

(8) The department shall determine the purveyor's follow-up action when a substance not included in this chapter is detected.

AMENDATORY SECTION (Amending WSR 99-07-021, filed 3/9/99, effective 4/9/99)

WAC 246-290-415 Operations and maintenance. (1) The purveyor shall ensure that the system is operated in accordance with the operations and maintenance program as established in the approved water system plan required under WAC 246-290-100 or the small water system management program under WAC 246-290-105.

(2) The operations and maintenance program shall include the following elements as applicable:

(a) Water system management and personnel;

(b) Operator certification;

(c) Comprehensive monitoring plan for all contaminants under WAC 246-290-300;

(d) Emergency response program;

(e) Cross-connection control program; and

(f) Maintenance of service reliability in accordance with WAC 246-290-420.

(3) The purveyor shall ensure that the system is operated in accordance with good operations procedures such as those available in texts, handbooks, and manuals available from the following sources:

(a) American Water Works Association (AWWA), 6666 West Quincy Avenue, Denver, Colorado 80235;

(b) American Society of Civil Engineers (ASCE), 345 East 47th Street, New York, New York 10017-2398;

(c) Ontario Ministry of the Environment, 135 St. Clair Avenue West, Toronto, Ontario M4V1B5, Canada;

(d) The Chlorine Institute, 2001 "L" Street NW, Washington, D.C. 20036;

(e) California State University, 600 "J" Street, Sacramento, California 95819;

(f) Health Research Inc., Health Education Services Division, P.O. Box 7126, Albany, New York 12224; and

(g) Any other standards acceptable to the department.

(4) The purveyor shall not establish or maintain a bypass to divert water around any feature of a treatment process, except by written approval from the department.

(5) The purveyor shall take preventive or corrective action as directed by the department when results of an inspection conducted by the department indicate conditions which are currently or may become a detriment to system operation.

(6) The purveyor of a system using surface water or GWI shall meet operational requirements specified in Part 6 of this chapter.

(7) The purveyor shall have a certified operator if required under chapter 70.119 RCW and chapter 246-292 WAC.

(8) The purveyor shall at all times employ reasonable security measures to assure the raw water intake facilities, water treatment processes, water storage facilities, and the distribution system are protected from possible damage or compromise by unauthorized persons, animals, vegetation, or similar intruding agents. Such measures include elements such as locks on hatches, fencing of facilities, screening of reservoir vents or openings, and other recommendations as may be found in the current edition of the *Recommended Standards for Water Works, A Committee Report of the Great Lakes - Upper Mississippi River Board of State Public Health and Environmental Managers.*

(9) All purveyors utilizing ((~~ground water~~)) groundwater wells shall monitor well levels from ground level to the static water level on a seasonal basis, including low demand and high demand periods, to document the continuing availability of the source to meet projected, long-term demands. Purveyors shall maintain this data and provide it to the department upon request.

(10) All operation and maintenance practices shall conform to Part 5 of this chapter.

AMENDATORY SECTION (Amending WSR 03-08-037, filed 3/27/03, effective 4/27/03)

WAC 246-290-416 Sanitary surveys. (1) All public water systems shall submit to a sanitary survey conducted by the department, or the department's designee, based upon the following schedule:

(a) For community ((~~and nontransient noncommunity~~)) water systems, every ((~~five~~)) three years((~~, or more frequently as determined by the department. The sanitary surveys shall be consistent with the schedules presented in 40 CFR 141.21; and~~)). In accordance with 40 CFR 141.21 (d)(3), community water systems may qualify to be surveyed every five years if the system meets the following criteria:

(i) Provides at least 4-log treatment of viruses (using inactivation, removal, or a department-approved combination of 4-log inactivation and removal) before or at the first customer for all its groundwater sources; or

(ii) Has no total coliform MCL violations since the last sanitary survey;

(iii) Has no more than one total coliform monitoring violation since the last sanitary survey; and

(iv) Has no unresolved significant deficiencies from the current sanitary survey.

(b) For transient noncommunity and nontransient noncommunity water systems, every five years ((~~unless the system uses only disinfected ground water and has an approved wellhead protection program, in which case the survey shall be every ten years. The sanitary surveys shall be conducted consistent with schedules presented in 40 CFR 141.21~~)).

(c) For community ((~~public~~)) water systems that use a surface water or GWI source, every three years. Sanitary surveys may be reduced to every five years upon written approval from the department.

(d) The department may schedule a sanitary survey or increases the frequency of surveys if it determines a public health threat exists or is suspected.

(2) All public water system purveyors shall be responsible for:

(a) Ensuring cooperation in scheduling sanitary surveys with the department, or its designee; ((~~and~~))

(b) At the department's request, provide any existing information that will enable the department to conduct a sanitary survey;

(c) Ensuring the unrestricted availability of all facilities and records at the time of ((~~the~~)) a sanitary survey or special purpose investigation; and

(d) Taking preventive or corrective action as directed by the department when results of a sanitary survey indicate conditions which are currently or may become a detriment to system operation or public health.

(3) All public water systems that use a surface water or GWI source shall, within forty-five days following receipt of a sanitary survey report that identifies significant deficiencies, identify in writing to the department how the system will correct the deficiencies and propose a schedule to complete the corrections. The department may modify the schedule if necessary to protect the health of water system users.

(4) A groundwater system with significant deficiencies must meet the treatment technique requirements of WAC 246-290-453(1) and the special notification requirements under WAC 246-290-71005 (4) and (5) except where the department determines that the significant deficiency is in a portion of the distribution system that is served solely by surface water or GWI.

AMENDATORY SECTION (Amending WSR 03-08-037, filed 3/27/03, effective 4/27/03)

WAC 246-290-451 Disinfection of drinking water. (1) No portion of a public water system containing potable water shall be put into service, nor shall service be resumed until the facility has been effectively disinfected.

(a) In cases of new construction, drinking water shall not be furnished to the consumer until satisfactory bacteriological samples have been analyzed by a laboratory certified by the state; and

(b) In cases of existing water mains, when the integrity of the main is lost resulting in a significant loss of pressure that places the main at risk to cross-connection contamination, the purveyor shall use standard industry practices such as flushing, disinfection, and/or bacteriological sampling to ensure adequate and safe water quality prior to the return of the line to service;

(c) If a cross-connection is confirmed, the purveyor shall satisfy the reporting requirements as described under WAC 246-290-490(8).

(2) The procedure used for disinfection shall conform to standards published by the American Water Works Association, or other industry standards acceptable to the department.

(3) The purveyor of a system using surface water or GWI shall meet disinfection requirements specified in Part 6 of this chapter.

(4) The purveyor of a system using ((~~ground water and required to disinfect, shall meet the following disinfection requirements, unless otherwise directed by the department:~~

~~(a) Minimum contact time at a point at or before the first consumer of:~~

~~(i) Thirty minutes if 0.2 mg/L free chlorine residual is maintained;~~

~~(ii) Ten minutes if 0.6 mg/L free chlorine residual is maintained; or~~

~~(iii) Any combination of free chlorine residual concentration (C), measured in mg/L, and contact time (T), measured in minutes, that results in a CT product (C X T) of greater than or equal to six; or~~

~~(iv) Contact time (T) for surface water or GWI sources shall be determined in accordance with WAC 246-290-636.~~

~~(b) Detectable residual disinfectant concentration in all active parts of the distribution system, measured as total chlorine, free chlorine, combined chlorine, or chlorine dioxide;~~

~~(c) Water in the distribution system with an HPC level less than or equal to 500 organisms/mL is considered to have a detectable residual disinfectant concentration.~~

~~(4) The department may require the purveyor to provide longer contact times, higher chlorine residuals, or additional treatment to protect the health of consumers served by the public water system.~~

~~(5) The purveyor of a system using surface water or GWI shall meet disinfection requirements specified in Part 6 of this chapter.~~

~~(6) The purveyor of a system adding a chemical disinfectant shall monitor residual disinfectant concentration at representative points in the system on a daily basis, and at the same time and location of routine and repeat coliform sample collection. Frequency of disinfection residual monitoring may be reduced upon written request to the department if it can be shown that disinfection residuals can be maintained on a reliable basis without the provision of daily monitoring, but shall be no less frequent than specified in WAC 246-290-300 (3)(a)(i).~~

~~(7) The analyses shall be conducted in accordance with "standard methods." To assure adequate monitoring of chlorine residual, the department may require the use of continuous chlorine residual analyzers and recorders~~)) groundwater shall meet the requirements under subsection (6) of this section if required by the department to disinfect for any of the following reasons:

(a) Determination that the groundwater source is in hydraulic connection to surface water under WAC 246-290-640(4);

(b) A history of unsatisfactory source coliform sampling; or

(c) A microbiological contaminant threat within the sanitary control area as defined in WAC 246-290-135.

(5) The purveyor of a groundwater system that is required to disinfect as a result of becoming a SSNC due to repeated total coliform MCL or major repeat violations shall meet the requirements under subsection (7) of this section.

(6) If disinfection is required under subsection (4) of this section, the following requirements must be met:

(a) Provide a minimum contact time at or before the first customer of:

(i) Thirty minutes if 0.2 mg/L free chlorine residual is maintained;

(ii) Ten minutes if 0.6 mg/L free chlorine residual is maintained; or

(iii) Any combination of free chlorine residual concentration (C), measured in mg/L and contact time (T), measured in minutes, that result in a CT product (C x T) of greater than or equal to six; and

(b) Maintain a detectable residual disinfectant concentration in all active parts of the distribution system, measured as total chlorine, free chlorine, combined chlorine, or chlorine dioxide.

(c) The department may require the purveyor to provide longer contact times, higher chlorine residuals, or additional treatment to protect the health of consumers served by the water system.

(d) To demonstrate the required level of treatment is maintained, the purveyor shall:

(i) Monitor the residual disinfectant concentration at the point of entry to the distribution system, or at a department-approved location, at least once every Monday through Friday (except holidays) that water is supplied;

(ii) Calculate the daily CT value at or before the first customer; and

(iii) Submit monthly groundwater treatment reports to the department using a department-approved form by the tenth day of the

following month.

(e) All analyses required in this subsection shall be conducted in accordance with EPA standard methods.

(f) The purveyor may be required to monitor the residual disinfectant concentration each calendar day water is supplied to the distribution system if the department considers treatment operation is unreliable.

(g) The department may require the use of continuous residual analyzers and recorders to assure adequate monitoring of residual concentrations.

(7) If disinfection is required under subsection (5) of this section, or a chemical disinfectant is added to a groundwater source for any other reason, the following requirements must be met:

(a) Monitor residual disinfectant concentration at representative points throughout the distribution system once each day, excluding weekends and holidays, and at the same time and location of routine and repeat coliform sample collection. Frequency of disinfection residual monitoring may be reduced upon written request to the department if it can be shown that disinfection residuals can be maintained on a reliable basis without the provision of daily monitoring.

(b) Maintain a detectable residual disinfectant concentration in all active parts of the distribution system, measured as total chlorine, free chlorine, combined chlorine, or chlorine dioxide. Water in the distribution system with an HPC level less than or equal to 500 organisms/mL is considered to have a detectable residual disinfectant concentration.

(c) The department may require the purveyor to provide higher chlorine residuals, or additional treatment to protect the health of consumers served by the water system.

(d) All analyses required in this subsection shall be conducted in accordance with EPA standard methods.

(e) The department may require the use of continuous residual analyzers and recorders to assure adequate monitoring of residual concentrations.

NEW SECTION

WAC 246-290-453 Treatment techniques for groundwater systems. (1) Groundwater systems with significant deficiencies identified under WAC 246-290-416, or source fecal contamination as determined under WAC 246-290-320 (2)(g)(v)(C) or 246-290-300 (3)(e), or as directed by the department under WAC 246-290-320 (2)(g)(v)(B) must:

(a) Take one or more of the following corrective actions:

(i) Correct all significant deficiencies;

(ii) Provide an alternate source of water;

(iii) Eliminate the source of contamination; or

(iv) Provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the groundwater source.

(b) Consult with the department regarding appropriate corrective action within thirty days unless otherwise directed by the department to implement a specific corrective action.

(c) Complete corrective action as directed by the department or be in compliance with an approved corrective action plan within one hundred twenty days (or earlier if directed by the department) of receiving written notice from the department of a significant deficiency or source fecal contamination under this subsection. Any modifications of a corrective action plan must be approved by the department.

(2) When treatment is installed to provide at least 4-log treatment of viruses under subsection (1)(a)(iv) of this section, compliance monitoring must be conducted as follows:

(a) For chemical disinfection, conduct compliance monitoring under 40 CFR 141.403 (b)(3)(i).

(i) For groundwater systems serving greater than three thousand three hundred people, conduct compliance monitoring under 40 CFR 141.403 (b)(3)(i)(A).

(ii) For groundwater systems serving three thousand three hundred or fewer people, conduct compliance monitoring under 40 CFR 141.403 (b)(3)(i)(B).

(b) For membrane filtration, conduct compliance monitoring under 40 CFR 141.403 (b)(3)(ii).

(c) For alternative treatment, conduct compliance monitoring under 40 CFR 141.403 (b)(3)(iii).

(d) For new sources, conduct compliance monitoring under 40 CFR 141.403 (b)(2)(i) through (iii).

(3) A groundwater system may discontinue 4-log treatment of viruses installed under subsection (1)(a)(iv) of this section or WAC 246-290-451(4) if the department determines and documents in writing that 4-log treatment of viruses is no longer necessary for that groundwater source. A system that discontinues 4-log treatment of viruses is subject to the triggered source water monitoring requirements under WAC 246-290-320 (2)(g).

(4) Failure to meet the compliance monitoring requirements under subsection (2) of this section is a monitoring violation and requires Tier 3 public notification under Part 7, Subpart A of this chapter.

(5) Failure to provide 4-log treatment of viruses under subsection (1)(a)(iv) of this section is a treatment technique violation if the failure is not corrected within four hours of the time the purveyor determines that at least 4-log treatment of viruses is not maintained and requires Tier 2 public notification under Part 7, Subpart A of this chapter.

(6) Failure to complete corrective action as directed by the department or be in compliance with an approved corrective action plan within one hundred twenty days (or earlier if directed by the department) of receiving notice from the department of a

significant deficiency or an *E. coli* positive groundwater sample that is not invalidated under WAC 246-290-320 (2)(g)(vii) is a treatment technique violation and requires Tier 2 public notification under Part 7, Subpart A of this chapter.

AMENDATORY SECTION (Amending WSR 09-21-045, filed 10/13/09, effective 1/4/10)

WAC 246-290-480 Recordkeeping and reporting. (1) Records. The purveyor shall keep the following records of operation and water quality analyses:

(a) Bacteriological and turbidity analysis results shall be kept for five years. Chemical analysis results shall be kept for as long as the system is in operation. Records of source meter readings shall be kept for ten years. Other records of operation and analyses required by the department shall be kept for three years. All records shall bear the signature of the operator in responsible charge of the water system or his or her representative. Systems shall keep these records available for inspection by the department and shall send the records to the department if requested. Actual laboratory reports may be kept or data may be transferred to tabular summaries, provided the following information is included:

(i) The date, place, and time of sampling, and the name of the person collecting the sample;

(ii) Identification of the sample type (routine distribution system sample, repeat sample, source or finished water sample, or other special purpose sample);

(iii) Date of analysis;

(iv) Laboratory and person responsible for performing analysis;

(v) The analytical method used; and

(vi) The results of the analysis.

(b) Records of action taken by the system to correct violations of primary drinking water standards. For each violation, records of actions taken to correct the violation, and copies of public notifications shall be kept for no less than ((~~three~~)) ten years after the last corrective action taken.

(c) Copies of any written reports, summaries, or communications relating to sanitary surveys or SPIs of the system conducted by system personnel, by a consultant or by any local, state, or federal agency, shall be kept for ten years after completion of the sanitary survey or SPI involved.

(d) Copies of project reports, construction documents and related drawings, inspection reports and approvals shall be kept for the life of the facility.

(e) Where applicable, records of the following shall be kept for a minimum of three years:

(i) Chlorine residual;

(ii) Fluoride level;

(iii) Water treatment plant performance including, but not limited to:

(A) Type of chemicals used and quantity;

(B) Amount of water treated;

(C) Results of analyses; and

(iv) Other information as specified by the department.

(f) The purveyor shall retain copies of public notices made under Part 7, Subpart A of this chapter and certifications made to the department under 40 CFR 141.33(e) for a period of at least three years after issuance.

(g) Purveyors using conventional, direct, or in-line filtration that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes within their treatment plant shall, beginning no later than June 8, 2004, collect and retain on file the following information for review and evaluation by the department:

(i) A copy of the recycle notification and information submitted to the department under WAC 246-290-660 (4)(a)(i).

(ii) A list of all recycle flows and the frequency with which they are returned.

(iii) Average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

(iv) Typical filter run length and a written summary of how filter run length is determined.

(v) The type of treatment provided for the recycle flow.

(vi) Data on the physical dimensions of the equalization and/or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.

(h) Purveyors required to conduct disinfection profiling and benchmarking under 40 CFR 141.530 through 141.544 shall retain the results on file indefinitely.

(i) Copies of monitoring plans developed under this chapter shall be kept for the same period of time as the records of analyses taken under the plan are required to be kept under (a) of this subsection.

(j) Purveyors using surface water or GWI sources must keep the records required by 40 CFR 141.722.

(2) Reporting.

(a) Unless otherwise specified in this chapter, the purveyor shall report to the department within forty-eight hours the failure to comply with any national primary drinking water regulation (including failure to comply with any monitoring requirements) as set forth in this chapter. For violations assigned to Tier 1 in WAC 246-290-71001, the department must be notified as soon as possible, but no later than twenty-four hours after the violation is known.

(b) The purveyor shall submit to the department reports

required by this chapter, including tests, measurements, and analytic reports. Monthly reports are due before the tenth day of the following month, unless otherwise specified in this chapter.

(c) The purveyor shall submit to the department copies of any written summaries or communications relating to the status of monitoring waivers during each monitoring cycle or as directed by the department.

(d) Source meter readings shall be made available to the department.

(e) Water facilities inventory form (WFI).

(i) Purveyors of **community** and **NTNC** systems shall submit an annual WFI update to the department;

(ii) Purveyors of **TNC** systems shall submit an updated WFI to the department as requested;

(iii) Purveyors shall submit an updated WFI to the department within thirty days of any change in name, category, ownership, or responsibility for management of the water system, or addition of source or storage facilities; and

(iv) At a minimum the completed WFI shall provide the current names, addresses, and telephone numbers of the owners, operators, and emergency contact persons for the system.

(f) Bacteriological. The purveyor shall notify the department of the presence of:

(i) Coliform in a sample, within ten days of notification by the laboratory; and

(ii) Fecal coliform or *E. coli* in a sample, by the end of the business day in which the purveyor is notified by the laboratory. If the purveyor is notified of the results after normal close of business, then the purveyor shall notify the department before the end of the next business day.

(g) Systems monitoring for disinfection byproducts under WAC 246-290-300(6) shall report information to the department as specified in (a) and (b) of this subsection, and 40 CFR 141.134(b).

(h) Systems monitoring for disinfectant residuals under WAC 246-290-300(6) shall report information to the department as specified in ((~~subsection (2)~~)) (a) and (b) of this ((~~section~~)) subsection, and 40 CFR 141.134((~~(b)~~)) (c).

(i) Systems required to monitor for disinfection byproduct precursor removal under WAC 246-290-300(6) shall report information to the department as specified in (a) and (b) of this subsection, and 40 CFR 141.134(d).

(j) Systems required to monitor for disinfection byproducts under WAC 246-290-300(6) shall report information to the department as specified in (a) and (b) of this subsection, and 40 CFR 141.600 - 629.

(k) Systems subject to the enhanced treatment requirements for *Cryptosporidium* under WAC 246-290-630(4) shall report information to the department as specified in 40 CFR 141.706 and 141.721.

(l) Systems that use acrylamide and epichlorohydrin in the treatment of drinking water, must certify annually in writing to the department that the combination (or product) of dose and monomer level does not exceed the levels specified in (l)(i) and

(ii) of this subsection. Certifications shall reference maximum use levels established by an ANSI-accredited listing organization approved by the department.

(i) Acrylamide = 0.05 percent dosed at 1 ppm (or equivalent); and

(ii) Epichlorohydrin = 0.01 percent dosed at 20 ppm (or equivalent).

(m) Use of products that exceed the specified levels constitutes a treatment technique violation and the public must be notified under the public notice requirements under Part 7, Subpart A of this chapter.

(n) Systems shall submit to the department, in accordance with 40 CFR 141.31(d), a certification that the system has complied with the public notification regulations (Part 7, Subpart A of this chapter) when a public notification is required. Along with the certification, the system shall submit a representative copy of each type of notice.

NEW SECTION

WAC 246-290-485 Recordkeeping and reporting for groundwater systems. (1) Records. In addition to the requirements of WAC 246-290-480, the purveyor shall keep the following records:

(a) Records of corrective actions. For each action, records shall be kept for at least ten years.

(b) Records of public notification as required under WAC 246-290-71005 (4) and(5) and shall be kept for at least three years.

(c) Records of invalidation of groundwater source samples under WAC 246-290-320 (2)(g)(vii), and shall be kept for at least five years.

(d) For consecutive systems, records of notification to the wholesale system of total-coliform positive routine samples that are not invalidated under WAC 246-290-320 (2)(d), and shall be kept for at least five years.

(e) For all systems that are required to perform compliance monitoring under WAC 246-290-453:

(i) Records of department-specified minimum disinfectant residual, and shall be kept for at least ten years.

(ii) Records of the lowest residual disinfectant concentration, and the date and duration of any failure to maintain the department-prescribed minimum residual disinfectant concentration for a period of more than four hours, and shall be kept for at least five years.

(iii) Records of department-specified compliance requirements for membrane filtration and of department-specified parameters for department-approved alternative treatment, and shall be kept for at least five years.

(iv) Records of the date and duration of any failure to meet

the membrane operating, membrane integrity, or alternative treatment operating requirements for more than fours hours, and shall be kept for at least five years.

(2) Reporting. In addition to the requirements of WAC 246-290-480:

(a) Systems conducting compliance monitoring under WAC 246-290-453(2) must notify the department any time the system fails to meet department-specified requirements as soon as possible, but no later than the next business day, for the following requirements:

(i) Minimum residual disinfectant concentration;

(ii) Membrane operating criteria or membrane integrity; and

(iii) Alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within four hours.

(b) The system must notify the department within thirty days of completing corrective action under WAC 246-290-453(1).

AMENDATORY SECTION (Amending WSR 99-07-021, filed 3/9/99, effective 4/9/99)

WAC 246-290-620 Applicability of surface water treatment requirements. (1) The requirements of Part 6 of this chapter apply to water systems that:

(a) Use surface sources or ((~~ground water~~)) groundwater sources under the direct influence of surface water (GWI); or

(b) Purchase surface or GWI water from an approved public water system or other entity acceptable to the department.

(2) The requirements of Part 6 of this chapter do not apply to water systems that use unfiltered surface or GWI sources as emergency sources, provided the source is physically disconnected from the system at all times until it is needed, and the purveyor meets the following conditions:

(a) Has a department-approved emergency response plan; and

(b) Provides disinfection treatment that meets the requirements under WAC 246-290-662 (2)(d).

(3) The requirements of WAC 246-290-640 apply to **Group A** systems that use sources potentially under the influence of surface water as determined by the department.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

WAC 246-290-630 General requirements. (1) The purveyor shall ensure that treatment is provided for surface and GWI sources

consistent with the treatment technique requirements specified in Part 6 of chapter 246-290 WAC.

(2) The purveyor shall install and properly operate water treatment processes to ensure at least:

(a) 99.9 percent (3 log) removal and/or inactivation of *Giardia lamblia* cysts;

(b) 99.99 percent (4 log) removal and/or inactivation of viruses; and

(c) 99 percent (2 log) removal of *Cryptosporidium* oocysts if required to filter.

(3) The purveyor shall ensure that the requirements of subsection (2) of this section are met between a point where the source water is not subject to contamination by untreated surface water and a point at or before the first consumer.

(4) The department may require higher levels of removal and/or inactivation of *Giardia lamblia* cysts, *Cryptosporidium* oocysts, and viruses than specified in subsection (2) of this section if deemed necessary to protect the health of consumers served by the system.

(5) The purveyor shall ensure that personnel operating a system subject to Part 6 of chapter 246-290 WAC meet the requirements under chapter 70.119 RCW and chapter 246-292 WAC.

(6) The purveyor of a **Group A community** system serving water from a surface or GWI source to the public before January 1, 1991, shall comply with applicable minimum treatment requirements. The purveyor shall meet either:

(a) The filtration and disinfection requirements under WAC 246-290-660 and 246-290-662 respectively;

(b) The criteria to remain unfiltered under WAC 246-290-690 and the disinfection requirements under WAC 246-290-692; or

(c) The criteria to provide a limited alternative to filtration under WAC 246-290-691 and the disinfection requirements under WAC 246-290-692.

(7) The purveyor of a **Group A noncommunity** system serving water from a surface or GWI source, shall meet either:

(a) The filtration and disinfection requirements under WAC 246-290-660 and 246-290-662, respectively; or

(b) The criteria to provide a limited alternative to filtration under WAC 246-290-691 and the disinfection requirements under WAC 246-290-692.

(8) The purveyor of a **Group A** system first serving water from a surface or GWI source to the public after December 31, 1990, shall meet either:

(a) The filtration and disinfection requirements under WAC 246-290-660 and 246-290-662, respectively; or

(b) The criteria to provide a limited alternative to filtration under WAC 246-290-691 and the disinfection requirements under WAC 246-290-692.

(9) The purveyor of a system required to install filtration may choose to provide a limited alternative to filtration or abandon the surface or GWI source as a permanent or seasonal source and develop an alternate, department-approved source. Purveyors that develop alternate ((~~ground water~~)) groundwater sources or

purchase water from a department-approved public water system using a ((~~ground water~~)) groundwater source shall no longer be subject to Part 6 of chapter 246-290 WAC, once the alternate source is approved by the department and is on line.

(10) A purveyor that chooses to provide a limited alternative to filtration shall submit an application to the department that contains the information necessary to determine whether the source can meet the criteria.

(11) If a limited alternative to filtration is provided, then the purveyor shall install and properly operate treatment processes to ensure greater removal and/or inactivation efficiencies of *Giardia lamblia* cysts, viruses, or other pathogenic organisms of public health concern (including *Cryptosporidium* oocysts) than would be achieved by the combination of filtration and chlorine disinfection.

(12) Systems that were required to develop a disinfection profile under 40 CFR 141.172 shall provide that profile and a calculated disinfection benchmark, as described in 40 CFR 141.172 (c)(2) and (3), along with other project information specified in WAC 246-290-110, when proposing any change to the disinfection treatment system. The proposal for change shall include an analysis of how the proposed change will affect the current level of disinfection. The profile must also be available for inspection during routine sanitary surveys conducted under WAC 246-290-416.

(13) Community and nontransient noncommunity systems serving less than ten thousand persons must meet the disinfection profiling and benchmarking provisions required under 40 CFR 141.530 through 141.544.

(14) Systems required to develop a disinfection profile under 40 CFR 141.530 shall provide that profile and a calculated disinfection benchmark, as described in 40 CFR 141.543 along with other project information specified in WAC 246-290-110, when proposing any change to the disinfection treatment system. The proposal for change shall include an analysis of how the proposed change will affect the current level of disinfection. The profile must also be available for inspection during routine sanitary surveys conducted under WAC 246-290-416.

(15) A system using conventional, direct, or in-line filtration that must arrange for the conduct of a CPE, under 40 CFR 141.175 (b)(4) or 40 CFR 141.563, may be required to arrange for CTA. The department will determine the need for CTA on a case-by-case basis.

(16) Water systems subject to the requirements of Part 6 of this chapter must also comply with the enhanced treatment requirements for *Cryptosporidium* under 40 CFR Subpart W. The requirements are in addition to the requirements of Part 6 of this chapter and include:

(a) General requirements under 40 CFR 141.700;

(b) Source monitoring requirements under 40 CFR 141.701-707;

(c) Disinfection profiling and benchmarking requirements under 40 CFR 141.708-709;

(d) Treatment technique requirements under 40 CFR 141.710-714;

(e) Requirements for microbial toolbox components under 40 CFR 141.715-720; and

(f) Reporting and recordkeeping requirements under 40 CFR 141.721-722.

(17) Water systems using UV reactors to obtain treatment credit for *Cryptosporidium* removal must:

(a) Validate the reactors using the validation testing procedures specified under 40 CFR 141.720 (d)(2); or

(b) Validate the reactor under Austrian ONORM Standards or German DVGW Standards.

AMENDATORY SECTION (Amending WSR 03-08-037, filed 3/27/03, effective 4/27/03)

WAC 246-290-634 Follow-up to treatment technique violations. When a treatment technique violation occurs, the purveyor:

(1) Shall report to the department in accordance with:

(a) WAC 246-290-666 for purveyors providing filtration or required to filter;

(b) WAC 246-290-674 for purveyors installing filtration; or

(c) WAC 246-290-696 for purveyors meeting the criteria to remain unfiltered or providing a limited alternative to filtration;

(2) Shall notify the public in accordance with Part 7, Subpart A of this chapter;

(3) Shall determine the cause of the violation;

(4) Shall take action as directed by the department which may include conducting a CCP. A CCP may include both a CPE and CTA; ((~~and~~))

(5) Shall identify and systematically address plant-specific factors identified in the CPE during the CTA, if required; and

(6) May be subject to enforcement under WAC 246-290-050.

AMENDATORY SECTION (Amending WSR 99-07-021, filed 3/9/99, effective 4/9/99)

WAC 246-290-640 Determination of GWI sources. (1) Until the department has made a source GWI determination, the purveyor shall monitor in accordance with the requirements for ((~~ground water~~)) groundwater sources in WAC 246-290-300 or as directed by the department and provide follow-up in accordance with WAC 246-290-320.

(2) The purveyor, after being notified by the department that one or more of the system sources have been classified as potential GWI, may elect to seek approval from the department to modify the

potential GWI source to mitigate surface water influences prior to compliance with subsection (3) of this section, and if so, shall:

(a) Complete a project report, for departmental approval, that describes the proposed source-related modifications, including the schedule for their completion and an explanation of why the source should be reclassified upon completion of the source modifications; and

(b) Demonstrate compliance, if directed by the department, with the requirements of subsection (3) of this section upon completion of the source-related modifications.

(3) The purveyor using a source identified as a potential GWI shall provide to the department all information necessary to determine whether the source is under direct surface water influence. Information shall include, but not be limited to:

(a) Site-specific source water quality data, including temperature, conductivity, ((~~and/~~))or other appropriate parameters as determined by the department;

(b) Documentation of source construction characteristics;

(c) Documentation of hydrogeology;

(d) Distance to surface water; and

(e) Water quality results from nearby surface water(s), including temperature, conductivity, and/or other appropriate parameters as determined by the department.

(4) Upon a determination by the department that one or more potential GWI source(s) being used are in hydraulic connection to a surface water, the purveyor shall:

(a) Secure the services of a professional engineer to direct further evaluation and actions regarding the source;

(b) Provide disinfection treatment of the source in accordance with WAC 246-290-451; and

(c) Provide microscopic particulate analyses (MPA) results for review by the department based upon a sampling plan approved by the department.

(5) A purveyor notified by the department that one or more GWI sources are in use shall:

(a) Within ninety days of notification submit a project report to the department that includes an implementation schedule for compliance with the treatment techniques specified in Part 6 of this chapter;

(b) Notify consumers served by the system; and

(c) Comply with the applicable requirements of WAC 246-290-670.

(6) After completion of the requirements in subsection (3) of this section, the purveyor may modify a GWI source to mitigate direct surface influence. In such cases, the purveyor shall:

(a) Include in a project report, for submittal to the department for approval, a description of the proposed approaches and schedule for source modification; and

(b) Comply again with subsection (3) of this section upon completion of source modifications to be considered for source reclassification.

(7) The department may reevaluate a ((~~ground water~~))

groundwater source for direct surface influence, if conditions impacting source classification have changed.

AMENDATORY SECTION (Amending WSR 99-07-021, filed 3/9/99, effective 4/9/99)

WAC 246-290-670 Compliance requirements for existing unfiltered systems installing filtration. (1) The purveyor of an existing unfiltered system shall:

(a) Install filtration within eighteen months after department notification; and

(b) Be subject to the interim compliance requirements as determined by the department and in conformance with 40 CFR 141.13 and WAC 246-290-632.

(2) The purveyor under an enforcement action or compliance agreement that is dated prior to the effective date of Part 6 of chapter 246-290 WAC, shall adhere to the compliance schedule for installation of filtration established in the departmental order or bilateral compliance agreement in lieu of the dates specified in subsection (1) of this section.

(3) The purveyor required to install filtration shall submit an action plan and schedule to the department for review and approval. The plan shall:

(a) Be submitted within ninety days of departmental notification; and

(b) Document the purveyor's plan and implementation schedule to comply with one of the following:

(i) Subparts A and B of Part 6 of chapter 246-290 WAC, if continuing to use the surface or GWI source as a permanent source and installing filtration;

(ii) Subparts A and D of Part 6 of chapter 246-290 WAC, if abandoning the surface or GWI source and purchasing completely treated water from a department-approved public water system using surface or GWI water; or

(iii) All other applicable sections of this chapter, if abandoning the surface or GWI source and developing an alternate department-approved ((~~ground water~~)) groundwater source.

(4) Between written departmental notification of the filtration requirement and installation of filtration, the purveyor shall meet:

(a) The interim disinfection requirements under WAC 246-290-672 or as otherwise directed by the department;

(b) The interim monitoring and reporting requirements under WAC 246-290-674; and

(c) All other applicable requirements of this chapter.

(5) The purveyor installing filtration shall ensure that when completed, the final treatment processes, consisting of filtration and disinfection, will comply with the requirements under WAC 246-

290-660 and 246-290-662, respectively.

AMENDATORY SECTION (Amending WSR 99-07-021, filed 3/9/99, effective 4/9/99)

WAC 246-290-686 Compliance requirements for unfiltered systems. (1) The purveyor using an unfiltered surface or GWI source shall comply with:

(a) Subparts A and D of Part 6 of chapter 246-290 WAC; and

(b) All other applicable sections of this chapter.

(2) The purveyor purchasing water from a system using a surface or GWI source shall comply with:

(a) The applicable requirements of Subpart A of Part 6 of chapter 246-290 WAC;

(b) The disinfection, monitoring and reporting requirements under WAC 246-290-692 (5)(b), 246-290-694 (8)(b) and 246-290-696(4) respectively when purchasing completely treated surface or GWI water; or

(c) The treatment technique, monitoring and reporting requirements as directed by the department when the purveyor is purchasing incompletely treated surface or GWI water.

(3) The purveyor using an unfiltered GWI source shall be subject to the effective dates, compliance requirements, and violations specified in Table 12.

Table 12
COMPLIANCE REQUIREMENTS FOR SYSTEMS USING UNFILTERED GWI SOURCES

REQUIREMENTS BECOME EFFECTIVE	APPLICABLE PART 6 REQUIREMENTS	VIOLATION TYPE	
		Turbidity MCL	Treatment Technique
Six months after GWI determination	Only Analytical, Monitoring and Reporting Requirements (WAC 246-290-638, 246-290-694 and 246-290-696 respectively)	Refer to 40 CFR 141.13 and 141.22	Not in effect yet
Eighteen months after GWI determination	Subparts A and D	No longer in effect	In effect as defined in WAC 246-290-632

(4) Purveyors of **community** systems using surface water sources had the option to remain unfiltered if they demonstrated compliance with the department's criteria to remain unfiltered by December 30, 1991.

(5) A purveyor that served water to the public before January 1, 1991, using a GWI source may have that source remain unfiltered, if, within eighteen months of GWI determination, the purveyor complies with Part 6 of this chapter and, the source water quality and site-specific conditions under WAC 246-290-690 or 246-290-691

as demonstrated through monitoring conducted in accordance with WAC 246-290-694.

(6) The purveyor with sources that are approved to remain unfiltered shall comply with the source water quality and site-specific conditions under WAC 246-290-690 or 246-290-691 as demonstrated through monitoring conducted in accordance with WAC 246-290-694.

(7) The purveyor shall install filtration when the system fails to meet one or more of the source water quality and site-specific conditions under WAC 246-290-690 and 246-290-691, or the department determines that installation of filtration is necessary to protect the health of consumers served by the water system.

(8) The purveyor, in response to a written notification by the department, shall install filtration within eighteen months.

(9) The purveyor may comply with the requirements to install filtration by:

(a) Constructing a water treatment facility that is designed, operated, and maintained in accordance with Subparts A, B, and C of Part 6 of this chapter;

(b) Satisfying the source water quality and site-specific criteria specified in WAC 246-290-691 and constructing treatment facilities that are designed, operated, and maintained to provide a limited alternative to filtration in accordance with WAC 246-290-692; or

(c) Abandoning the surface water or GWI source, and:

(i) Developing an alternate, department-approved ((~~ground water~~)) groundwater source; or

(ii) Purchasing completely treated water from a department-approved public water system.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

WAC 246-290-71005 Special public notification requirements. (1) The purveyor of community or NTNC water systems required to monitor under ((~~WAC 246-290-300(7)~~)) 40 CFR 141.40 shall notify the water system users of the availability of the results of monitoring for unregulated contaminants no later than twelve months after the monitoring results are known. The form and manner of the public notice to the water system users shall be in accordance with 40 CFR 141.204 (c), (d)(1), and (d)(3). The notice must also identify a person and provide the telephone number to contact for information on the monitoring results.

(2) The purveyor of a community water system that ((~~experiences a secondary MCL violation for~~)) exceeds the fluoride secondary MCL of 2.0 mg/L but does not exceed the fluoride primary MCL of 4.0 mg/L shall provide notice, in accordance with the form, manner, timing, distribution, and content requirements of 40 CFR

141.208.

(3) The purveyor of a water system using surface water or GWI sources that repeatedly fails to monitor for *Cryptosporidium* or determine the bin classification or mean *Cryptosporidium* level, must notify the public under 40 CFR 141.211.

(4) The purveyor of a community groundwater system that receives notice from the department of a significant deficiency or an *E. coli* positive groundwater source sample that is not invalidated by the department, must notify the public under WAC 246-290-72013.

(5) The purveyor of a noncommunity groundwater system with a significant deficiency that has not been corrected within twelve months of being notified or earlier if directed must notify the public under WAC 246-290-72013. The system must continue to notify the public annually until the significant deficiency is corrected. The information must include:

(a) The nature of the significant deficiency and the date it was identified by the department;

(b) A department-approved plan and schedule for correcting the significant deficiency including interim measures, progress to date, and which interim measures have been completed;

(c) In communities with a large proportion of non-English speaking consumers, the notice must contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where the consumers may contact the system to obtain a translated copy of the notice or assistance with the appropriate language; and

(d) If directed by the department, a system with significant deficiencies that have been corrected must inform its customers of the significant deficiencies, how the deficiencies were corrected, and the date(s) of correction under (a) through (c) of this subsection.

AMENDATORY SECTION (Amending WSR 00-15-080, filed 7/19/00, effective 8/19/00)

WAC 246-290-72003 Report contents--Source water. Information on the source of the water delivered:

(1) Each report must identify the source(s) of the water delivered by the community water system by providing information on:

(a) The type of the water, for example, surface water, ((~~ground water~~)) groundwater, spring water, or purchased water; and

(b) The commonly used name (if any) and location of the body (or bodies) of water.

(2) If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In addition, systems are

encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information.

(3) Where a system has received a source water assessment from the department, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the department or written by the purveyor.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

WAC 246-290-72012 Regulated contaminants.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Microbiological Contaminants						
Total Coliform Bacteria	MCL: (systems that collect ≥ 40 samples/ month) more than 5% of monthly samples are positive; (systems that collect < 40 samples/ month) 2 or more positive samples per monthly sampling period	-	MCL: (systems that collect ≥ 40 samples/ month) more than 5% of monthly samples are positive; (systems that collect < 40 samples/ month) 2 or more positive samples per monthly sampling period	0	Naturally present in the environment	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
Fecal coliform and *E. coli*	0	-	0	0	Human and animal fecal waste	Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Fecal indicators (*E. coli*)	TT	-	TT	N/A	Human and animal fecal waste	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
Total organic carbon (ppm)	TT	-	TT	N/A	Naturally present in the environment	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these by-products in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
Turbidity (NTU)	TT((-))	-	TT	N/A	Soil runoff	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
Giardia lamblia Viruses *Cryptosporidium*	TT((-))	-	TT((-))	N/A	Human and animal fecal waste	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Heterotrophic plate count (HPC) bacteria	TT((-))	-	TT((-))	N/A	HPC measures a range of bacteria that are naturally present in the environment	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
Legionella	TT((-))	-	TT((-))	N/A	Found naturally in water; multiplies in heating systems	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
Radioactive Contaminants						
Beta/photon emitters (mrem/yr)	4 mrem/yr	-	4	N/A 0	Decay of natural and man-made deposits	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Alpha emitters (pCi/l)	15 pCi/l	-	15	N/A 0	Erosion of natural deposits	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Combined radium (pCi/l)	5 pCi/l	-	5	N/A 0	Erosion of natural deposits	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
Uranium (pCi/l)	30 micro g/l	-	30	0	Erosion of natural deposits	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.
Inorganic Contaminants						
Antimony (ppb)	.006	1000	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Arsenic (ppb) *Effective 1/23/06	.05 0.010	1000 1000	50 10	N/A 0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
Asbestos (MFL)	7 MFL	-	7	7	Decay of asbestos cement water mains; Erosion of natural deposits	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
Barium (ppm)	2	-	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Beryllium (ppb)	.004	1000	4	4	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
Cadmium (ppb)	.005	1000	5	5	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
Chromium (ppb)	.1	1000	100	100	Discharge from steel and pulp mills; Erosion of natural deposits	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
Copper (ppm)	AL = 1.3	-	AL = 1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Cyanide (ppb)	.2	1000	200	200	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
Fluoride (ppm)	4	-	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
Lead (ppb)	AL = .015	1000	AL = 15	0	Corrosion of household plumbing systems; Erosion of natural deposits	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
Mercury [inorganic] (ppb)	.002	1000	2	2	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
Nitrate (ppm)	10	-	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Nitrite (ppm)	1	-	1	1	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Selenium (ppb)	.05	1000	50	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
Thallium (ppb)	.002	1000	2	0.5	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
Synthetic Organic Contaminants including Pesticides and Herbicides						
2,4-D (ppb)	.07	1000	70	70	Runoff from herbicide used on row crops	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
2,4,5-TP [Silvex](ppb)	.05	1000	50	50	Residue of banned herbicide	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
Acrylamide	TT	-	TT	0	Added to water during sewage/ wastewater treatment	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
Alachlor (ppb)	.002	1000	2	0	Runoff from herbicide used on row crops	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
Atrazine (ppb)	.003	1000	3	3	Runoff from herbicide used on row crops	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
Benzo(a)pyrene [PAH] (nanograms/l)	.0002	1,000,000	200	0	Leaching from linings of water storage tanks and distribution lines	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Carbofuran (ppb)	.04	1000	40	40	Leaching of soil fumigant used on rice and alfalfa	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
Chlordane (ppb)	.002	1000	2	0	Residue of banned termiticide	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
Dalapon (ppb)	.2	1000	200	200	Runoff from herbicide used on rights of way	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
Di(2-ethylhexyl) adipate (ppb)	.4	1000	400	400	Discharge from chemical factories	Some people who drink water containing di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience toxic effects or reproductive difficulties.
Di(2-ethylhexyl) phthalate (ppb)	.006	1000	6	0	Discharge from rubber and chemical factories	Some people who drink water containing di (2-ethylhexyl) phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
Dibromochloropropane (ppt)	.0002	1,000,000	200	0	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.
Dinoseb (ppb)	.007	1000	7	7	Runoff from herbicide used on soybeans and vegetables	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
Diquat (ppb)	.02	1000	20	20	Runoff from herbicide use	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Dioxin [2,3,7,8-TCDD] (ppq)	.00000003	1,000,000,000	30	0	Emissions from waste incineration and other combustion; Discharge from chemical factories	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
Endothall (ppb)	.1	1000	100	100	Runoff from herbicide use	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
Endrin (ppb)	.002	1000	2	2	Residue of banned insecticide	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
Epichlorohydrin	TT	-	TT	0	Discharge from industrial chemical factories; An impurity of some water treatment chemicals	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.
Ethylene dibromide (ppt)	.00005	1,000,000	50	0	Discharge from petroleum refineries	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
Glyphosate (ppb)	.7	1000	700	700	Runoff from herbicide use	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
Heptachlor (ppt)	.0004	1,000,000	400	0	Residue of banned pesticide	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
Heptachlor epoxide (ppt)	.0002	1,000,000	200	0	Breakdown of heptachlor	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Hexachlorobenzene (ppb)	.001	1000	1	0	Discharge from metal refineries and agricultural chemical factories	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
Hexachlorocyclo-penta-diene (ppb)	.05	1000	50	50	Discharge from chemical factories	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
Lindane (ppt)	.0002	1,000,000	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
Methoxychlor (ppb)	.04	1000	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
Oxamyl [Vydate] (ppb)	.2	1000	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
PCBs [Polychlorinated biphenyls] (ppt)	.0005	1,000,000	500	0	Runoff from landfills; Discharge of waste chemicals	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
Pentachlorophenol (ppb)	.001	1000	1	0	Discharge from wood preserving factories	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
Picloram (ppb)	.5	1000	500	500	Herbicide runoff	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Simazine (ppb)	.004	1000	4	4	Herbicide runoff	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
Toxaphene (ppb)	.003	1000	3	0	Runoff/leaching from insecticide used on cotton and cattle	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
Volatile Organic Contaminants						
Benzene (ppb)	.005	1000	5	0	Discharge from factories; Leaching from gas storage tanks and landfills	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
Bromate (ppb)	.010	1000	10	0	By-product of drinking water disinfection	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
Carbon tetrachloride (ppb)	.005	1000	5	0	Discharge from chemical plants and other industrial activities	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Chloramines (ppm)	MRDL = 4	-	MRDL = 4	MRDL G = 4	Water additive used to control microbes	Some people who use drinking water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
Chlorine (ppm)	MRDL = 4	-	MRDL = 4	MRDL G = 4	Water additive used to control microbes	Some people who use drinking water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Chlorite (ppm)	1	-	1	0.8	By-product of drinking water disinfection	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant mothers who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
Chlorine dioxide (ppb)	MRDL = .8	1000	MRDL = 800	MRDL G = 800	Water additive used to control microbes	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant mothers who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.
Chlorobenzene (ppb)	.1	1000	100	100	Discharge from chemical and agricultural chemical factories	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
o-Dichlorobenzene (ppb)	.6	1000	600	600	Discharge from industrial chemical factories	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
p-Dichlorobenzene (ppb)	.075	1000	75	75	Discharge from industrial chemical factories	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
1,2-Dichloroethane (ppb)	.005	1000	5	0	Discharge from industrial chemical factories	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
1,1-Dichloroethylene (ppb)	.007	1000	7	7	Discharge from industrial chemical factories	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
cis-1,2-Dichloroethylene (ppb)	.07	1000	70	70	Discharge from industrial chemical factories	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
trans-1,2-Dichloroethylene (ppb)	.1	1000	100	100	Discharge from industrial chemical factories	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
Dichloromethane (ppb)	.005	1000	5	0	Discharge from pharmaceutical and chemical factories	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
1,2-Dichloropropane (ppb)	.005	1000	5	0	Discharge from industrial chemical factories	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
Ethylbenzene (ppb)	.7	1000	700	700	Discharge from petroleum refineries	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
Haloacetic Acids (HAA) (ppb)	.060	1000	60	n/a	By-product of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
Styrene (ppb)	.1	1000	100	100	Discharge from rubber and plastic factories; Leaching from landfills	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
Tetrachloroethylene (ppb)	.005	1000	5	0	Discharge from factories and dry cleaners	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
1,2,4-Trichlorobenzene (ppb)	.07	1000	70	70	Discharge from textile-finishing factories	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
1,1,1-Trichloroethane (ppb)	.2	1000	200	200	Discharge from metal degreasing sites and other factories	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
1,1,2-Trichloroethane (ppb)	.005	1000	5	3	Discharge from industrial chemical factories	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
Trichloroethylene (ppb)	.005	1000	5	0	Discharge from metal degreasing sites and other factories	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
TTHMs [Total trihalomethanes] (ppb)	.080	1000	80	N/A	By-product of drinking water disinfection	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
Toluene (ppm)	1	-	1	1	Discharge from petroleum factories	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
Vinyl Chloride (ppb)	.002	1000	2	0	Leaching from PVC piping: Discharge from plastics factories	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
Xylenes (ppm)	10	-	10	10	Discharge from petroleum factories; Discharge from chemical factories	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.
Treatment Technique Violations						
Groundwater rule TT violations	TT	-	TT	N/A	-	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

Key

AL = Action Level

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

MFL = million fibers per liter

MRDL = Maximum Residual Disinfectant Level

MRDLG = Maximum Residual Disinfectant Level Goal

mrem/year = millirems per year (a measure of radiation absorbed by the body)

N/A = Not Applicable

Contaminant (units)	traditional MCL in mg/L	to convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
NTU = Nephelometric Turbidity Units (a measure of water clarity)						
pCi/1 = picocuries per liter (a measure of radioactivity)						
ppm = parts per million, or milligrams per liter (mg/1)						
ppb = parts per billion, or micrograms per liter (Φ g/1)						
ppt = parts per trillion, or nanograms per liter						
ppq = parts per quadrillion, or picograms per liter						
TT = Treatment Technique						

NEW SECTION

WAC 246-290-72013 Report contents--Groundwater systems. (1) This section specifies the requirements for information to be included in each report for groundwater systems. It applies to the following situations:

(a) A significant deficiency that is uncorrected at the time of the report;

(b) An *E. coli* positive groundwater sample that is not invalidated under WAC 246-290-320 (2)(g)(vii) at the time of the report.

(2) The system must report annually the information in subsection (1)(a) and (b) of this section until the department determines the significant deficiency or *E. coli* positive groundwater sample is addressed under WAC 246-290-453(1).

(3) Each report must include:

(a) The nature of the significant deficiency or the source of the fecal contamination and the date the significant deficiency was identified by the department or the dates of the *E. coli* positive source water samples;

(b) If the fecal contamination has been addressed under WAC 246-290-453(1) and the date of such action;

(c) For each significant deficiency or fecal contamination that has not been addressed under WAC 246-290-453(1), the department-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed;

(d) If the system receives notice as described in subsection (1)(b) of this section, the potential health effects language in WAC 246-290-72012, regulated contaminants.

(4) If directed by the department, a system with significant deficiencies that have been corrected before the next report must inform its customers of:

(a) The significant deficiency;

(b) How the significant deficiency was corrected; and

(c) The date of correction.