

Draft - Baseline Rule

RECLAIMED WATER USE

Chapter 173-219 WAC

For Rule Advisory Committee Use - Wednesday, April 29, 2009

Incorporating Comments Received as of 3/25/2009.

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WAC 173-219-010 Authority and Purpose

1. **Authority.** This chapter is adopted under the authority of chapter 90.46 RCW, Reclaimed Water Use.
2. **Purpose.** The purpose of this chapter is to implement the beneficial use of reclaimed water while protecting human health and the environment. This chapter establishes:
 - (a.) Planning and engineering review requirements for reclaimed water treatment, distribution and use.
 - (b.) Permitting requirements for wastewater treatment facilities generating reclaimed water for distribution and use.
 - (c.) Technical standards for the adequate and reliable treatment, water quality and management of each category of reclaimed water authorized under state law, that are directly enforceable and that allow classification and management as a reclaimed water supply instead of as a waste discharge.
 - (d.) Required operational and management practices, compliance monitoring, recordkeeping and reporting requirements that are applicable when reclaimed water is generated, stored, distributed or put to use.

WAC 173-219-020 Applicability

1. **Applies.** This chapter applies to all facilities generating any category of reclaimed water as defined by this chapter. In addition, these rules apply to, but are not limited to, the following:
 - (a.) A person who collects, diverts or treats wastewater for use as a source of supply for reclaimed water.
 - (b.) A person who stores, transfers, distributes or transports reclaimed water.
 - (c.) A person who uses reclaimed water.
 - (d.) The reclaimed water put to beneficial use.
 - (e.) The location, rate and purpose of the reclaimed water use.
 - (f.) The owner and leaseholder of land where the reclaimed water is used.
2. **Does Not Apply.** The following are not considered reclaimed water use as regulated under this chapter.
 - (a.) Treatment plant uses. The use of effluent for treatment plant purposes within the bounds of a treatment facility unless the departments determine that the potential for public exposure from the use requires reclaimed water.
 - (b.) Industrial process recycling. The capture and redirection of used process water back to the same uses within an industrial setting
 - (c.) Greywater reuse. Per RCW 90.46.015, greywater reuse shall be regulated and permitted under rules to be adopted by the department of health by December 31, 2010.

- (d.) Agricultural industrial process water. Per RCW 90.46.150, the use of agricultural industrial process water shall be regulated under Ch 90.48 RCW.
 - (e.) Industrial reuse water. Per RCW 90.46.160, the use of industrial reuse water shall be regulated under Ch 90.48 RCW.
 - (f.) Wastewater discharges. Wastewater discharges are regulated under Ch 90.48 RCW.
 - (g.) Drinking water supplies. Drinking water use is regulated under Ch. 43.20, 70.116, and 70.119A RCW, and under Ch 246-290 and 246-291 WAC.
 - (h.) Water right permits and certificates. Water right permitting is regulated under RCW 90.03.250 or 90.44.060¹.
 - (i.) Onsite sewage disposal systems. Onsite sewage disposal is regulated under Ch. 70.118 and 70.118B RCW.
 - (j.) Sewage sludge and biosolids management facilities and practices. Sewage sludge and biosolids management are regulated under Ch. 173-308 RCW.
3. **Relationship to other laws.** In addition to the requirements of this chapter, other laws, regulations, and ordinances may also apply to reclaimed water generation, distribution of use. These include but are not limited to the requirements listed in Appendix 1.

WAC 173-219-030 Definitions – Alphabetized List

Unless the department determines that the context of the rule requires otherwise, the following definitions are applicable for the purposes of this chapter.

"Agricultural industrial process water" means water that has been used for the purpose of agricultural processing and has been adequately and reliably treated, so that as a result of that treatment, it is suitable for other agricultural water use. [RCW 90.46.010]

"Agricultural processing" means the processing of crops or milk to produce a product primarily for wholesale or retail sale for human or animal consumption, including but not limited to potato, fruit, vegetable, and grain processing. [RCW 90.46.010]

"Agricultural water use" means the use of water for irrigation and other uses related to the production of agricultural products. These uses include, but are not limited to, construction, operation, and maintenance of agricultural facilities and livestock operations at farms, ranches, dairies, and nurseries. Examples of these uses include, but are not limited to, dust control, temperature control, and fire control. [RCW 90.46.010]

"Agronomic rate" refers to a specific rate of reclaimed water applied that provides the precise amount of water and nutrient loading that the selected landscape vegetation requires without having any excess water, contaminants or nutrients percolate beyond the root zone. [Ecology guidance]

"AKART"² means all known, available, and reasonable methods of prevention, control, and treatment. [1997 WRR Standards from Ch 90.48 RCW, WAC 173-201A-020]

¹ The state does not regulate appropriated water rights under this rule. This chapter only pertains to the exemption from water right permitting requirements and the granting of an exclusive right to distribute and use the water under RCW 90.46.120, 150 and 160.

"Alarm" means an instrument or device which continuously monitors a specific function of a treatment process and automatically gives warning of an unsafe or undesirable condition by means of visual and audible signals. **[1997 WRR Standards]**

"Approval" means written approval. **[WAC 173-240-020]**

"Approved Laboratory Methods" means those specified in 40 CFR Part 136 or in the latest edition of Standard Methods for the Examination of Water and Wastewater, prepared and published jointly by the American Public Health Association, the American Water Works Association, and the Water Environment Federation, and which are conducted in laboratories approved or accredited by the Washington Department of Ecology. **[1997 WRR Standards from Ch 173-50 WAC]**

"Approved use area" is a site with well defined boundaries, designated in a user permit issued by the agency to receive reclaimed water for an approved use, and in conformance with regulations of all applicable regulatory agencies. **[Ecology- CSWD Ch E1 guidance]**

"Beneficial use"³ means the use of reclaimed water, that has been transported from the point of production to the point of use without an intervening discharge to the waters of the state, for a beneficial purpose. **[RCW 90.46.010]**

"Biological Treatment" means methods of wastewater treatment in which bacterial or biochemical action is intensified as a means of producing an oxidized wastewater. **[1997 WRR Standards]**

"Beneficial Uses for Wetlands" means wetland functions and values, which are the physical, chemical, and biological processes that occur in a wetland, and the benefits and services to society and the environment that these provide. Beneficial uses commonly associated with natural and constructed wetlands include: **[1997 WRR Standards]**

1. Storm/flood water storage and retention;
2. Hydrologic functions of low flow augmentation, ground water discharge and recharge, and surface water flow;
3. Filtration, storage, and transformation of sediment, nutrients, and toxics;
4. Shoreline protection from erosion;
5. Habitat for aquatic organisms;
6. Habitat for wildlife; and
7. Recreational, cultural, educational, scientific, and natural aesthetic values and uses.

"Beneficial Uses Direct Recharge" means uses of waters of the state which include but are not limited to use for domestic, stock watering, industrial, commercial, agricultural, irrigation, mining, fish and wildlife maintenance and enhancement, recreation, generation of

² "AKART" is an acronym for "all known, available, and reasonable methods of prevention, control, and treatment." AKART shall represent the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge. The concept of AKART applies to both point and nonpoint sources of pollution. The term "best management practices," typically applied to nonpoint source pollution controls is considered a subset of the AKART requirement.

³ RAC proposed to delete the definition of beneficial use from statute (2009 bill) and rework the definition in rule. Note that existing definition is termed 'direct beneficial use' in CSWD-Ch E1.

electric power and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state. [1997 WRR Standards]

“Biochemical Oxygen Demand (BOD₅)” means the quantity of oxygen utilized in the biochemical oxidation of organic matter present in water or wastewater, reported as a five-day value established as determined using approved methods. [1997 WRR Standards]

“Category I Wetland”⁴ means wetlands that provide a documented significant life support function for threatened or endangered species, represent a high quality example of a rare wetland type, are rare within a given region, or are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime. [RCW 90.58.380]

“Category II Wetland” means wetlands that provide habitat for very sensitive or important wildlife or plants that are difficult to replace, or provide very high functional quality, particularly for wildlife habitat. [RCW 90.58.380]

“Category III Wetland” means wetlands that provide important functions and values, but are smaller, less diverse, and/or more isolated in the landscape than Category II wetlands [RCW 90.58.380]

“Category IV Wetland” means wetlands that are small, isolated, and lack vegetation diversity, and may be able to be enhanced, restored, or replaced. [RCW 90.58.380]

“Class A Reclaimed Water” means reclaimed water that, at a minimum, is at all times an oxidized, coagulated, filtered, disinfected wastewater. The wastewater shall be considered adequately disinfected if the median number of total coliform organisms in the wastewater after disinfection does not exceed 2.2 per 100 milliliters, as determined from the bacteriological results of the last 7 days for which analyses have been completed, and the number of total coliform organisms does not exceed 23 per 100 milliliters in any sample. [1997 WRR Standards]

“Class B Reclaimed Water” means reclaimed water that, at a minimum, is at all times an oxidized, disinfected wastewater. The wastewater shall be considered adequately disinfected if the median number of total coliform organisms in the wastewater after disinfection does not exceed 2.2 per 100 milliliters, as determined from the bacteriological results of the last 7 days for which analyses have been completed, and the number of total coliform organisms does not exceed 23 per 100 milliliters in any sample. [1997 WRR Standards]

“Class C Reclaimed Water” means reclaimed water that, at a minimum, is at all times an oxidized, disinfected wastewater. The wastewater shall be considered adequately disinfected if the median number of total coliform organisms in the wastewater after disinfection does not exceed 23 per 100 milliliters, as determined from the bacteriological results of the last 7 days for which analyses have been completed, and the number of total coliform organisms does not exceed 240 per 100 milliliters in any sample. [1997 WRR Standards]

“Class D Reclaimed Water” means reclaimed water that, at a minimum, is at all times an oxidized, disinfected wastewater. The wastewater shall be considered adequately disinfected if the median number of total coliform organisms in the wastewater after disinfection does not exceed 240 per 100 milliliters, as determined from the bacteriological results of the last 7 days for which analyses have been completed. [1997 WRR Standards]

⁴ Category I, II, III and IV wetlands Original Source – Wetlands Manual rule from RCW [90.58.380](#).

"Coagulated Wastewater" means an oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated prior to filtration by the addition of chemicals or by an equally effective method. [1997 WRR Standards]

"Commercial and Industrial Use" means the uses listed under SECTION 1, Article 4 of the 1997 Water Reclamation and Reuse Standards. [staff working definition]

"Controlled use" refers to the indirect use of reclaimed water for specifically stated and permitted uses. Controlled use involves the discharge of reclaimed water to public waters (lakes, rivers and aquifers) for storage or conveyance followed by the subsequent recovery and beneficial use of the reclaimed water. [Ecology Permit Writer's Manual]

"Constructed beneficial use wetlands"⁵ means those wetlands intentionally constructed on nonwetland sites to produce or replace natural wetland functions and values. Constructed beneficial use wetlands are considered "waters of the state." [RCW 90.46.010]

"Constructed treatment wetlands"⁶ means those wetlands intentionally constructed on nonwetland sites and managed for the primary purpose of polishing reclaimed water or aesthetics. Constructed treatment wetlands are considered part of the collection and treatment system and are not considered "waters of the state." [RCW 90.46.010]

"Construction quality assurance plan" means a plan describing the methods by which the professional engineer in responsible charge of inspection of the project will determine that the facilities were constructed without significant change from the departments approved plans and specifications. [WAC 173-240-020]

"Contaminant" means any chemical, physical, biological, or radiological substance that does not occur naturally or occurs at unnaturally high concentrations in ground or surface water. [1997 WRR Standards]

"Critical water supply service area" [Requested by RAC members - Ch 70.119a RCW]

"CT Value" means the product of the disinfectant contact time (T) in minutes and the concentration of the disinfectant residual (C) in mg/L measured at the end of the contact time. The product of these two parameters (CT) provides a measure of the degree of inactivation of specific organisms. [1997 WRR Standards]

"Department" means Washington State Department of Ecology and/or Health. [1997 WRR Standards]

"Direct Use," means the use of reclaimed water that has been transported from the point of production to the point of use without an intervening discharge to the waters of the state.

"Direct recharge"⁷ means the controlled subsurface addition of water directly to the groundwater basin that results in the replenishment of groundwater. [RCW 90.46.010]

⁵ Proposed for change in 2009 bill to read as follows: *"Constructed beneficial use wetlands" means those wetlands intentionally constructed on nonwetland sites to produce or create natural wetland functions and values.*

⁶ Proposed for change in 2009 bill to read as follows: *"Constructed treatment wetlands" means wetland-like impoundments intentionally constructed on nonwetland sites and managed for the primary purpose of further treatment or retention of reclaimed water as distinct from creating natural wetland functions and values.*

⁷ Proposed for change in 2009 bill to read as follows: *"Direct groundwater recharge" means the controlled subsurface addition of water directly into groundwater for the purpose of replenishing groundwater.* Explanatory notes: Direct groundwater recharge of reclaimed water is typically accomplished via injection wells but may be accomplished by other methods that directly recharge into the groundwater saturated zone by a subsurface means.

“Direct (Groundwater) Recharge Facilities” means any equipment, facility, or building at a site approved for direct recharge and permitted by the Washington Departments of Ecology and Health. [1997 WRR Standards]

“Discharge Area” means an area in which there are upward components of flow in underlying ground water and ground water flows and exits to the surface as springs, seeps, or baseflow to streams and rivers. [1997 WRR Standards]

“Disinfected Wastewater” means wastewater in which pathogenic organisms have been destroyed by chemical, physical or biological means. [1997 WRR Standards]

“Domestic wastewater”⁸ means wastewater from greywater, toilet, or urinal sources.

“Drainfield”, as used in this Chapter, refers to the network of subsurface pipes or tiles through which reclaimed water is dispersed into the soil for the purpose of ground water recharge through infiltration in undisturbed native soil. This use of drainfields must meet all requirements for ground water recharge by surface percolation. If the drainfields do not provide adequate separation from the ground water basins, direct ground water recharge requirements apply. [Ecology Permit Writer’s Manual]

“Engineering report” means a document that thoroughly examines the engineering and administrative aspects of a particular water reclamation facility. The report shall contain the appropriate information required under WAC 173-219–160. [WAC 173-240-020 and 1997 WRR Standards]

“Facility” [requested]

“Filtered Wastewater” means an oxidized, coagulated wastewater which has been passed through natural undisturbed soils or filter media, such as sand or anthracite, so that the turbidity as determined by an approved laboratory method does not exceed an average operating turbidity of 2 nephelometric turbidity units (NTU), determined monthly, and does not exceed 5 NTU at any time. [1997 WRR Standards]

“Food Crops” mean any crops intended for human consumption. [1997 WRR Standards]

“General sewer plan” is a comprehensive plan for a system of sewers adopted by a local government entity: [WAC 173-240-020(7)(a)]

- a. Sewerage general plan adopted by counties under chapter [36.94](#) RCW.
- b. Plan for a system of sewerage adopted by cities under chapter [35.67](#) RCW.
- c. Comprehensive plan for a system of sewers adopted by water-sewer districts under chapter [57.08](#) RCW.
- d. Plan for sewer systems adopted by public utility districts under chapter [54.16](#) RCW.
- e. Plan for sewer systems adopted by port districts under chapter [53.08](#) RCW.

The plan includes the items specified in each respective statute. It includes the general location and description of treatment and disposal facilities, trunk and interceptor sewers,

Reclaimed water may be used for in situ environmental benefits such as maintaining geological structure or providing base flows to surface waters. The water may also be planned for subsequent recovery and use. Ground water recharge may also be used to mitigate impacts from other water withdrawals.

⁸ Proposed statutory definition in 2009 bill that would replace the definition of ‘sewage’.

pumping stations, monitoring and control facilities, local service areas and a general description of the collection system to serve those areas. The plan also includes preliminary engineering in adequate detail to assure technical feasibility, provides for the method of distributing the cost and expense of the sewer system, and indicates the financial feasibility of plan implementation.

"Greywater (gray water)"⁹ means wastewater having the consistency and strength of residential domestic type wastewater. Greywater includes wastewater from sinks, showers, and laundry fixtures, but does not include toilet or urinal waters. [RCW 90.46.010]

"Ground Water" means water in a saturated zone or stratum beneath the surface of land or below a surface water body. [1997 WRR Standards]

"Ground water basin" means a ground water flow system with defined boundaries that may include more than one aquifer. The phrase "directly to the basin" means into the regional water table or saturated zone. [Ecology working definition]

"Groundwater recharge criteria"¹⁰ means the contaminant criteria found in the drinking water quality standards adopted by the state board of health pursuant to chapter 43.20 RCW and the department of health pursuant to chapter 70.119A RCW. [RCW 90.46.010]

"Ground Water Quality Criteria" means numerical values or narrative standards that represent the maximum allowable contaminant concentrations in the ground water listed or described in WAC 173-200. [1997 WRR Standards]

"Hydrologic Regime" means the depth and duration of inundation or soil saturation in a wetland. [1997 WRR Standards]

"Impoundment" means the uses listed under Section 1, Article 2 of the 1997 Water Reclamation and Reuse Standards. [Ecology working definition]

"Impairment" (see water right impairment)

"Industrial reuse water" means water that has been used for the purpose of industrial processing and has been adequately and reliably treated so that, as a result of that treatment, it is suitable for other uses. [RCW 90.46.010]

"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. [WAC 173-221-030]

"Inflow" means the addition of rainfall-caused surface water drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer. [WAC 173-221-030]

"Land application"¹¹ means use of reclaimed water as permitted under this chapter for irrigation or landscape enhancement for residential, business, and governmental purposes. [RCW 90.46.010]

⁹ Proposed for change in 2009 bill to read as follows: *"Greywater or gray water" means domestic type flows from bathtubs, showers, bathroom sinks, washing machines, dishwashers, and kitchen or utility sinks. Gray water does not include flow from a toilet or urinal.*

¹⁰ Proposed for change in 2009 bill to avoid confusion with the "ground water quality criteria" (next definition) to rename the 'groundwater recharge criteria' as "state drinking water contaminant criteria". Definition remains the same.

"Landscape Impoundment" means a body of reclaimed water which is used for aesthetic enjoyment or which otherwise serves a function not intended to include public contact. Examples may include but are not limited to: golf course water ponds/hazards, landscape ponds and vegetative landscape ponds, e.g. "lily ponds." [1997 WRR Standards]

"Land Treatment System" means a wastewater treatment system that is designed, constructed and operated to treat wastewater through the use of crops, irrigation methods, and soil. A State Waste Discharge permit specifies ground and surface water monitoring to assure conformance to specific water quality limits and has an agency approved site control plan. Land Treatment Systems are not regulated as reclaimed water projects. [1997 WRR Standards]

"Lead agency" means either the department of ecology or the department of health that has been designated by rule as the agency that will coordinate, review, issue, and enforce a reclaimed water permit issued under this chapter. [proposed 2009 statutory]

"Long-Term Storage or Disposal" means storing or disposing of untreated or partially treated wastewater for at least 20 days. [1997 WRR Standards]

"Multiple Point Chlorination" means the application of chlorine simultaneously at the reclamation plant and subsequent chlorination stations located at the use area and/or some intermediate point. It does not include chlorine application for odor control purposes. [1997 WRR Standards]

"Multiple Units" means two or more units of a treatment process which operate in parallel and serve the same function. [1997 WRR Standards]

"Natural Wetlands" means those wetlands that occur due to natural causes other than construction by human activities. Natural wetlands are typically classified as "waters of the State." [1997 WRR Standards]

"Nonlead agency" means either the department of ecology or the department of health, whichever is not the lead agency for purposes of this chapter. [proposed 2009 statutory]

"Nonpotable Ground Water" means ground water that is not used or intended to be used as, or is unsuitable for, a source of water supply for domestic purposes and has not been classified as an underground source of drinking water by the department. [1997 WRR Standards]

"Nonrestricted Recreational Impoundment" means a body of reclaimed water in which no limitations are imposed on body-contact water sport activities. Examples may include but are not limited to: recreational lakes, public water features (ponds) and fishponds. [1997 WRR Standards]

"Oxidized Wastewater" means wastewater in which organic matter has been stabilized such that the biochemical oxygen demand (BOD) does not exceed 30 mg/L and the total suspended solids (TSS) do not exceed 30 mg/L, is nonputrescible, and contains dissolved oxygen. [1997 WRR Standards]

"Peak Hourly Flow" means the average flow rate during the highest one-hour period of the day. [1997 WRR Standards]

¹¹ Proposed changes in 2009 bill to read as follows: "*Land application*" means use of reclaimed water as permitted under this chapter for the purpose of irrigation or watering of landscape vegetation. " Note: This definition refers to the beneficial use of reclaimed water not the land treatment and disposal of wastewater.

“Planned Groundwater Recharge Project” means any reclaimed water project designed for the purpose of recharging groundwater, via direct recharge or surface percolation. [1997 WRR Standards]

“Plans and specifications” means the detailed drawings and specifications used in the construction or modification of domestic or industrial wastewater facilities. Except as otherwise allowed, plans and specifications are preceded by an approved engineering report. [WAC 173-240-020]

“Person” means any state, individual, public or private corporation, political subdivision, governmental subdivision, governmental agency, municipality, copartnership, association, firm, trust estate, or any other legal entity whatever. [RCW 90.46.010]

“Potable Ground Water” means ground water that is used or intended to be used as, or is suitable for, a source of water supply for domestic purposes and has been classified as an underground source of drinking water by the department. [1997 WRR Standards]

“Permittee” means any person to which a reclaimed water permit is issued for operation of a reclamation plant. [1997 WRR Standards]

“Planned groundwater recharge project” means any reclaimed water project designed for the purpose of recharging groundwater, via direct recharge or surface percolation. [RCW 90.46.010]

“Potable” means water suitable for drinking by the public. [WAC 246-290-020]

“Power Source” means a source of supplying energy to operate unit processes or other individual pieces of equipment. [1997 WRR Standards]

“Primary contact recreation” means activities where a person would have direct contact with water to the point of complete submergence including, but not limited to, skin diving, swimming, and water skiing. [WAC 173-201A-020]

“Public water system” means any system providing water for human consumption through pipes or other constructed conveyances, excluding a system serving only one single-family residence and a system with four or fewer connections all of which serve residences on the same farm. Such term includes: (a) Collection, treatment, storage, and/or distribution facilities under control of the purveyor and used primarily in connection with such system; and (b) Collection or pretreatment storage facilities not under control of the purveyor, but primarily used in connection with such system. [WAC 246-290-020]

“Recharge Area” means an area in which there are downward components of flow in underlying ground water and infiltration moves downward into the deeper parts of the ground water. [1997 WRR Standards]

“Reclaimed water”¹² 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 a beneficial use or a controlled use that would not otherwise occur and is no longer considered wastewater. [RCW 90.46.010]

¹² Proposed for change in 2009 bill to read as follows: *“Reclaimed water” means water derived in any part from wastewater with a domestic wastewater component that has been adequately and reliably treated, so that it can be used for beneficial purposes. Reclaimed water is not considered a wastewater.*”

“Reclaimed water use” [requested]

“Reclamation criteria”¹³ means the criteria set forth in the water reclamation and reuse interim standards and subsequent revisions adopted by the department of ecology and the department of health. [RCW 90.46.010]

“Reclamation Plant” means an arrangement of devices, structures, equipment, processes, and controls which produce reclaimed water suitable for the intended reuse. [1997 WRR Standards]

“Recycling” means the capture and redirection of used water back to the same uses. This may be with or without additional treatment. Recycling most frequently occurs in an industrial setting. [Ecology Permit Writer’s Manual]

“Regional water supply plan”¹⁴ includes plans developed by multiple jurisdictions under the relevant provisions of chapters [43.20](#), [70.116](#), [90.44](#), and [90.82](#) RCW, and the water supply provisions under the utility element of chapter [36.70A](#) RCW. [From RCW 90.46.120].

“Reverse Osmosis” means a treatment process which relies upon a semipermeable membrane to separate water from its impurities. An external force is used to reverse the normal osmotic flow, resulting in movement of water from a solution of higher solute concentration to one of lower concentration. [1997 WRR Standards]

“Restricted Recreational Impoundment” means a body of reclaimed water in which recreation is limited to fishing, boating, and other non-body-contact water recreation activities. [1997 WRR Standards]

“Reliability” means the ability of a treatment system or component(s) thereof to perform a required function under stated conditions for a stated period of time. [1997 WRR Standards]

“Reliability Assessment” means a formal determination and review of the reliability of reclaimed water system components and equipment. The assessment should review and detail: operating standards, maintainability, critical operating conditions, spare parts requirements and availability, and any other issues that affect the reliability or the treatment performance of the reclamation facility. [1997 WRR Standards]

“Retail water supply service area” [requested – see WAC 246-290-100]

“Reuse”¹⁵ means the use of reclaimed water, in compliance with Washington Departments of Health and Ecology regulations and these standards, for a direct beneficial use. [1997 WRR Standards]

“Saturated Zone” means the zone below the water table in which all interstices are filled with water. [1997 WRR Standards]

“Secondary contact recreation” means activities where a person's water contact would be limited (e.g., wading or fishing) to the extent that bacterial infections of eyes, ears, respiratory or digestive systems, or urogenital areas would normally be avoided. [WAC 173-201A-020]

¹³ Proposed for deletion from statute in 2009 bill.

¹⁴ Proposed legislation (2009) may remove the reference to chapter [36.70A](#) RCW (Growth Management Act) from RCW 90.46.120.

¹⁵ This definition is not consistent with other uses of the same term. Reuse refers to the subsequent use of any used water including reclaimed water, grey water, stormwater and wastewater with or without treatment.

"Secondary Sedimentation" means the removal by gravity of settleable solids remaining in the effluent after the biological treatment process. [1997 WRR Standards]

"Sewage"¹⁶ means water-carried human wastes from residences, buildings, industrial and commercial establishments, or other places, together with such groundwater infiltration, surface waters, or industrial wastewater as may be present. [RCW 90.46.010]

"Short-Term Storage or Disposal" means storing or disposing of untreated or partially treated wastewater for at least a 24-hour period. [1997 WRR Standards]

"Significant Risk" [requested]

"Spray Irrigation" means application of reclaimed water to land by spraying it from sprinklers or orifices in piping. [1997 WRR Standards]

"Standby Chlorinator" means a duplicate chlorinator for reclamation plants having one chlorinator and a duplicate of the largest unit for plants having multiple chlorinator units. [1997 WRR Standards]

"Standby Power Source" means an automatically actuated self-starting alternate energy source maintained in immediately operable condition and of sufficient capacity to provide service during failure of the normal power supply. [1997 WRR Standards]

"Standby Replacement Equipment" means reserve parts and equipment which can be placed in operation within a 24-hour period to replace broken-down or worn-out units. [1997 WRR Standards]

"Standby Unit Process" means an alternate unit process or an equivalent alternative process which is maintained in operable condition and which is capable of providing comparable treatment for the entire design flow of the unit for which it is a substitute. [1997 WRR Standards]

"Streamflow augmentation"¹⁷ means the discharge of reclaimed water to rivers and streams of the state or other surface water bodies, but not wetlands. [RCW 90.46.010]

"Surface Irrigation" means application of reclaimed water to land by means other than spraying and includes drip irrigation, where reclaimed water is applied from drippers or emitters. [1997 WRR Standards]

"Surface percolation"¹⁸ means the controlled application of water to the ground surface for the purpose of replenishing groundwater. [RCW 90.46.010]

"Total Organic Carbon (TOC)" means the oxidizable organic carbon present in reclaimed water as determined by an approved laboratory method. [1997 WRR Standards]

"Total Suspended Solids (TSS)" means solids that either float on the surface of, or are suspended in, water or wastewater; the quantity of material removed from a sample in a

¹⁶ Proposed for deletion from statute in 2009 bill - to be replaced with a definition for "domestic wastewater".

¹⁷ Proposed changes in 2009 bill to read as follows: "Streamflow or surface water augmentation" means the intentional use of reclaimed water for rivers and streams of the state or other surface water bodies for the purpose of increasing volumes. Explanatory note: The reclaimed water may be used for in situ environmental benefits or planned for subsequent recovery and use. Streamflow augmentation may be used to mitigate impacts from other water withdrawals.

¹⁸ Proposed changes in 2009 bill to read as follows: "Surface percolation" means the controlled application of water to the ground surface or to unsaturated soil for the purpose of replenishing groundwater.

laboratory test referred to as filterable residue, as determined using approved laboratory methods. [1997 WRR Standards]

“Underground Source of Drinking Water (USDW)” means ground waters which contain less than 10,000 mg/L of total dissolved solids or which are obtainable for beneficial uses. [1997 WRR Standards]

“Unit Process” means an individual stage in the wastewater treatment sequence which performs a major single treatment operation. [1997 WRR Standards]

“Use Area” means any facility, building, or area approved **for reuse** and permitted by the Washington Departments of Health and Ecology. [1997 WRR Standards]

“User” means any person who uses reclaimed water. [RCW 90.46.010]

“Vadose zone (or unsaturated zone) percolation” means the controlled application of water to the unsaturated zone between the land surface and the regional water table for the purpose of replenishing groundwater. Vadose zone percolation does not include application to the base of the capillary fringe where pores are filled with water due to tension saturation or to localized perched ground water. [Working definition]

“Water Right Impairment” means a condition caused by someone or something other than a natural condition where a water right holder cannot carry out the beneficial use(s) of the right, including an instream flow right, using reasonable care and diligence [Water Resources Program working definition]

“Water system plan” means a document prepared under WAC 246-290 (Ch 43.20 RCW) that demonstrates a water system’s operational, technical, managerial, and financial capability to achieve and maintain compliance with local, state and federal plans and regulations. It also demonstrates 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. [WAC 246-290-100(1)]

“Water of the State or State Waters” refers to lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington. [WAC 173-221-030 (28) also in Permit Writer’s Manual]

“Water of the United States” is defined by the U.S. E.P.A. as navigable waters, tributaries to navigable waters, interstate waters, the oceans out to 200 miles, and intrastate waters which are used by interstate travelers for recreation or other purposes, as a source of fish or shellfish sold in interstate commerce, or for industrial purposes by industries engaged in interstate commerce. [U.S. E.P.A.]

“Wastewater”¹⁹ means water and wastes discharged from homes, businesses, and industry to the sewer system. [RCW 90.46.010]

“Wastewater facility plan” is an engineering report that also includes general sewer plan elements meeting the requirements under federal regulation 40 CFR 35 for the Environmental Protection Agency's municipal wastewater construction grants program. [Financial assistance program working definition]

¹⁹ Proposed change in 2009 bill to read as follows: “ “Wastewater” means water-carried wastes from residences, buildings, industrial and commercial establishments, or other places, together with such groundwater infiltration and inflow as may be present.”

“Wastewater Treatment Facility” means a facility that receives water and waste discharges from homes, businesses and industry through a sewer system. A wastewater treatment facility is not considered a reclamation plant. [1997 WRR Standards]

“Wetland or wetlands”²⁰ means areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands regulated under this chapter shall be delineated in accordance with the manual adopted by the department of ecology pursuant to RCW [90.58.380](#). [RCW 90.46.010]

“Wetland Enhancement” means actions taken to intentionally improve the wetland functions, processes and values of existing but degraded wetlands where all three defining criteria are currently met (i.e., hydrology, vegetation and soils). [1997 WRR Standards]

“Wetland Restoration” means actions taken to re-establish a wetland area, including its functions and values that were eliminated by past actions, in an area that no longer meets the definition of a wetland. [1997 WRR Standards]

173-219-040 Reclaimed water not considered as a wastewater [RCW 90.46.010(14)]

1. The state of Washington recognizes the value of reclaimed water as a water supply.
2. The distribution and use of reclaimed water permitted in accordance with this rule is not considered a wastewater discharge.²¹
3. The discharge of or unauthorized use wastewater effluent not meeting the standards for reclaimed water is considered a wastewater discharge regulated under chapter 90.48 RCW.
4. *The unauthorized (intentional) discharge or use of reclaimed water is considered a wastewater discharge regulated under chapter 90.48 RCW.*

173-219-050 Division of responsibilities between the departments of ecology and health²²

1. The department of ecology is the lead agency for permit issuance and shall not issue a permit until all approvals are in place. Ecology shall include the permit conditions required by the

²⁰ Explanatory note: The *Shoreline Management Act and Growth Management Act* wetlands definitions also include the following: “Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including but not limited to irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990 that were unintentionally created as a result of the construction of a road, street or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands.”

²¹ Although reclaimed water permits are currently issued under Ch 90.48 RCW, the 2009 proposed statutory changes (SSB 5504) would clarify this distinction and allow permit issuance under Ch 90.46 RCW authority.

²² In 1995, the departments signed an MOU related to the review, permitting, and enforcement of reclaimed water projects. The MOU needs updating to reflect existing statutory direction for the rule under 90.46.015 RCW that the rule under development must also designate whether the department of ecology or the department of health will be the lead permitting or regulatory agency responsible for a particular aspect of reclaimed water use. Ecology and DOH jointly proposed a statutory change for 2009 (Section 10 Lead Agency Duties) to state that both departments have authority to carry out all provisions of the statute, that only one of the two agencies will be the lead agency for a given project and that the rule will establish which agency will act as the lead agency.

department of health within a section of the permit. Both agencies and their authorities shall be listed on the cover of the permit.

2. The departments shall review permit applications and all required submittal documents. Each agency shall follow its own procedures for review and approval.
3. The departments may designate specific authorities to each other in order to administer this chapter. Authorization shall be consistent with any applicable state laws and regulations and with the state-USEPA agreement regarding delegation of federal authority. Each department retains all authorities and responsibilities not specifically designated to the other agency.
4. The departments shall designate specific authorities only by a written memorandum of understanding (MOU) or similar document of mutual consent acceptable to both departments. At a minimum, the document shall specify the designated authorities and responsibilities, provide a termination date of the agreement, include a process for periodic review, update, and renewal of the agreement, and specify a process to revoke all or part of the designated authority for cause.
- 1.

173-219-070 Enforcement. ²³

1. Any violation of this chapter or any permit issued under this chapter may be subject to the enforcement provisions of applicable laws including, but not limited to, chapters 43.21A, 43.70, 90.46 and 90.48 RCW.
2. The enforcement of other laws, regulations, and ordinances is the responsibility of the agency with jurisdiction.

173-219-080 Appeals.

Any person aggrieved by a decision of the department made in accordance with provisions of this chapter may appeal that decision only as provided by applicable law including, but not limited to, chapters [43.21B](#) and [34.05](#) RCW. **[Also see [2009 SB 5504-S](#)]**

173-219-090 Requirement for a person who generates reclaimed water.

1. A person shall not generate reclaimed water for distribution or use except in accordance with applicable requirements of this chapter and any applicable permit issued under this chapter.
2. The generator shall obtain a permit from the lead agency prior to distribution or use of the reclaimed water.
 - a. **Private Entity.** The lead agency may permit a privately owned facility to generate reclaimed water provided:
 - i. The uses of the reclaimed water are authorized under this chapter.

²³ DOH staff added enforcement references under the 2009 proposed legislation pending AAG review.

- ii. The owner of the facility is one or more of the following:
 - (1). A private utility as defined in RCW [36.94.010](#).
 - (2). The holder of a waste discharge permit issued under chapter [90.48](#) RCW.
 - (3). A facility serving a single nonresidential industrial or commercial establishment. This does not include commercial/industrial complexes serving multiple owners or tenants or multiple residential dwelling facilities such as mobile home parks, apartments, and condominiums.
- iii. Before deciding whether to issue a permit to a nonpublic entity, the lead agency may require information that is reasonable and necessary to determine whether the private entity has the financial and other resources to ensure the reliability, continuity, and supervision of the reclaimed water facility.²⁴
- b. **Public Entity.** All other facilities shall be owned by a public entity. Nothing in this rule precludes a public entity from contracting for operation and maintenance.
2. The permittee shall ensure that the applicable requirements of this chapter and the permit issued under this chapter are met.
4. The permittee shall maintain control over, and be responsible for, all facilities and activities inherent to the production of reclaimed water to ensure that the reclamation plant operates as approved by the Washington Departments of Health and Ecology.
 - a. The permittee shall control industrial and toxic discharges that may affect reclaimed water quality through either a delegated pre-treatment program with Ecology or assuring all applicable discharges have permits issued under chapter 90.48 RCW and 173-220 WAC.
 - b. The permittee shall have an operator, certified by the state, in responsible charge of the day-to-day operation of the facility generating reclaimed water. The certification procedures are set forth in chapter [173-230](#) WAC.
5. Where the reclaimed water distribution or use area is not under the direct control of the permittee, the permittee shall ensure through enforceable contracts or ordinances that the applicable requirements in this chapter and any applicable permit issued under this chapter are met.

WAC 173-219-100 Requirement for a person who distributes or transports reclaimed water.

1. A person may not distribute reclaimed water except in accordance with applicable requirements of this chapter and any applicable permit issued under this chapter.
2. Any person who distributes reclaimed water is responsible for all facilities and activities inherent to the distribution of the reclaimed water. For the purposes of this section, distribution also includes the use of any storage facilities or transport vehicles.

²⁴ The scope of this requirement has not been established.

3. The person who distributes the reclaimed water shall ensure that the construction, operation, maintenance and monitoring system **within the distribution system** meets all applicable requirements of this chapter and the permit issued to generator of the reclaimed water.
4. Where the person distributing or otherwise transporting reclaimed water is not the permittee or is not the user, a **binding agreement** among all parties involved is required prior to distribution of the reclaimed water.

WAC 173-219-110 Requirement for a person who uses reclaimed water.

1. A person may not use reclaimed water except in accordance with applicable requirements of this chapter and any applicable permit issued under this chapter.
2. Any person who uses reclaimed water is responsible for all facilities and activities inherent to the use of the reclaimed water. For the purposes of this section, use also includes the use of any on-site storage facilities.
3. The person using the reclaimed water shall ensure that the construction, operation, maintenance and monitoring system **(at the use area)** meets all applicable requirements of this chapter and the permit issued to generator of the reclaimed water.
4. Where the person using the reclaimed water is not the permittee or distributor ~~or is not the user~~, a binding agreement among all parties involved is required prior to the use of the reclaimed water.

WAC 173-219-120 Requirements to submit documents for department review and approval

1. **Permit Requirement.** The departments consider these submittals as part of a complete and accurate application for a reclaimed water permit. These submittal requirements are separate from, but may be submitted in conjunction with, requirements applicable to wastewater treatment facilities under Ch 173-240 WAC.
2. **Submittal Deadlines.**
 - a. The owner or the owner's authorized representative shall submit each required plan or report consistent with a compliance schedule issued by the departments or **at least sixty-days²⁵** before the time approval is desired. **[From WAC 173-240-030]**
 - b. Where construction does not begin within two years following approval of the submittal, the departments may require an update to reflect changed conditions such as: water quality, services availability, regulatory requirements, or engineering technology. **[From WAC 173-240-030]**
3. **Required Signatures:**
 - a. **Professional Engineer Required.** All required **engineering** reports, and plans and specifications for the construction or modification of facilities regulated under this chapter must be prepared under the supervision of a professional engineer licensed in accordance with chapter [18.43](#) RCW. All copies of these documents submitted to the

²⁵ 2/25/2009 RAC comment recommended modifying from the minimum 60-day submittal.

departments for review shall bear the signed and dated seal of the professional engineer under whose supervision they have been prepared.

- b. Submittal Documents. All submittals required by permits, and other information requested by the department must be signed as required under **WAC 173-219-210**.
4. Before constructing or modifying reclaimed water facilities²⁶, the owner or the owner's authorized representative must submit to and receive approval from the departments of the following submittals required for a reclaimed water facility. The documents are listed in the sequence in which they generally occur:
 - a. Reclaimed water plan²⁷
 - b. Water rights impairment assessment.²⁸
 - c. Reclaimed water engineering report.
 - d. Plans and specifications.
 - e. Construction quality assurance plan²⁹.
 - f. Operation and maintenance manual.
 - g. Declaration of completion of construction by the project engineer.

WAC 173-219-130 Review standards

1. The departments will generally review and either approve, comment on, or disapprove submittals within ninety days of receipt. If circumstances prevent, the departments shall notify the owner of the reasons for the delay.
2. The departments shall review and evaluate all relevant aspects of each project, including the following: treatment and treatment reliability provided; reclaimed water quality and quantity; use or potential use of the groundwater; operation and management of the recharge facilities; soil characteristics; hydrogeology; residence time of the reclaimed water in the underground prior to withdrawal; and distance from the recharge area to nearest point of withdrawal.
3. The departments shall review submittals under this chapter to determine whether the proposed facilities will be designed, constructed, operated, and maintained consistent with good engineering practices to:
 - a. Meet state standards and other requirements for the generation, distribution and use of reclaimed water under this rule and under chapter 90.46 RCW.
 - b. Meet applicable requirements of chapters [90.48](#) and [90.54](#) RCW pertaining to the prevention and control of pollution of waters of the state.
 - c. Design approaches shall be consistent with this chapter and accepted engineering practice as defined by state regulatory authorities. This includes but is not limited to Chapter E1 and other applicable sections of the state of Washington, "Criteria for Sewage Works Design", Manuals of Practice and Design Specifications of the United States

²⁶ Should this also include storage, distribution and use facilities (such as recharge basins).

²⁷ 2/25/2009 RAC meeting comment that this be defined as a comprehensive plan.

²⁸ Should the water rights impairment assessment be included as part of the reclaimed water plan?

²⁹ RAC members suggest deleting the construction QA plan requirement as duplicative and unnecessary.

Environmental Protection Agency, the United States Department of Agriculture, the National Resource Conservation Service, the Water Environment Federation, the American Society of Civil Engineering, the American Water Works Association, the American Public Works Association, and the National Water Research Institute.

d.

WAC 173-219-140 Requirements for a reclaimed water plan

1. The departments consider an approved reclaimed water plan as part of a complete and accurate permit application. The reclaimed water plan submitted to the departments for review and approval shall include the following information together with any other relevant data as requested by the departments.
 - a. Explain who will own, operate, and maintain the systems. Consider ownership requirements and operational requirements and capacity including financial, managerial, and adequate qualified staffing.
 - b. Identify existing and proposed uses.
 - c. Describe the level of water quality, treatment and reliability required. Address the ability of existing and proposed treatment facilities to meet requirements.
 - d. Identify existing and proposed service boundaries and interlocal agreements if service is provided in areas served by other water purveyors.
 - e. Describe the existing and proposed distribution system. Provide a map showing potential routes for pipelines to provide reclaimed water to the alternative uses identified.
 - f. Estimate the annual or seasonal volumes required, proposed and available. Describe plans for storage or discharge of the excess.
 - g. Include a preliminary evaluation of the potential for downstream water rights impairment.
 - h. Include a discussion of the need for future facilities, groundwater and surface water management, capital and operational costs and customer rate structures.
 - i. Discuss compliance with the State Environmental Policy Act (SEPA) and the National Environmental Policy Act (NEPA), if applicable.
2. Where opportunities for reclaimed water must be considered under other planning requirements, such documents may be submitted to the departments to meet some or all of the requirements of this section. The method by which such plans are approved shall remain unchanged. These include but are not limited to:
 - a. General sewer plans, engineering reports and facility plans for wastewater treatment facilities under RCW 90.48.110 and WAC 173-240-030. **[RCW 90.48.112]**
 - b. Submittals of a water system plan to the department of health under chapter **43.20** RCW and WAC **173-240-030** except for utilities serving less than one thousand service connections.
 - c. Regional water supply plan or plans addressing potable water supply service by multiple water purveyors under RCW 90.46.120.

- d. Additional information necessary to satisfy the requirements of the local government jurisdiction.

WAC 173-219-150 Requirements for a water rights impairment assessment (NEW)

Note: Dave Monthie proposed replacing this entire section with existing statutory language. Issues identified to address include: appeal, where in process this fits, complete analysis, approval, SEPA, plan, separate provision, permit issuance ...

1. The purpose of the analysis is to evaluate the potential impairment of water right holders when a facility begins to reclaim water rather than discharge it.
2. It is the responsibility of the project proponent to complete an impairment analysis for the quantity and uses of reclaimed water proposed.
3. Ecology recommends submitting the analysis as early as possible in the planning process. In general, it is recommended the analysis be submitted to the department as a component of a facility plan or engineering report.
4. The analysis must be approved by the Water Resources Program in order to obtain a reclaimed water permit.
5. The scope of an analysis will vary depending on the complexity of the project. Discharge to marine water, no increase in consumptive use, and origin of the water being foreign water are all situations where the analysis would be relatively simple. Indications that the analysis would be more complex or that there will likely be a risk of impairment include: basins with instream flows adopted by rule, unadjudicated basins, and basins where users are currently regulated.
6. In the case of ground water, a potentially impaired water right holder must comply with WAC 173-150 before they can claim impairment.
7. A facility whose impairment analysis yields water rights that will be impaired has several options to consider:
 - a. Provide compensation or mitigation agreed to by the affected water right holder.
 - b. Alter the project to reduce or eliminate the impairment potential.
 - c. Postpone the project. Proponents may request assistance from Ecology in determining an alternative course of action that may allow the project to move forward.
 - d. Acquire or purchase potentially impaired rights.
 - e. Request condemnation of potentially impaired rights under RCW 90.03.040.
8. Ecology is available to:
 - a. Attend a pre-plan meeting
 - b. Provide water rights data, stream flow data, information on instream flow rules, ground management areas, closed basins, and other information as available.
 - c. Review the proponent's analysis and provide comments.

WAC 173-219-160 Requirements for a reclaimed water facility engineering report [1997 WRR Standards] (formerly A26, A28)

1. Before producing, distributing or using reclaimed water, the applicant must file an engineering report with and receive approval from the Washington Departments of Health and Ecology. The departments consider an approved reclaimed water facility engineering report as part of a complete and accurate permit application.
2. These submittal requirements are separate from, but may be submitted in conjunction with, the requirements for wastewater treatment facilities under WAC 173-240-030 and 110.
3. The report shall clearly indicate the means for compliance with the standards and requirements specified by the Washington Departments of Health and Ecology under this rule.
4. All engineering reports shall include a description of the design of the proposed reclamation system including:
 - a. The operational and management personnel, their qualifications, experience, and responsibilities. The statement must include who will own, operate, and maintain the facility, the proposed methods of operation and maintenance, staffing levels and testing requirements are.
 - b. Process description and diagrams for secondary treatment process, reclamation process and reliability features and controls.
 - c. Basis for design including the requirements within this rule and references to sources of published design standards, pilot plant results and site-specific data.
 - d. Description and results of any pilot plant studies used to assess the selected and alternative treatment processes and define unit design and operating parameters.
 - e. Reliability assessment of all major or otherwise significant equipment and components, individual unit processes and complete treatment trains. The reliability assessment must address:
 - i. Flexibility of design
 - ii. Power supply
 - iii. Unit processes
 - iv. Alarms
 - v. Automated diversions
 - vi. Storage
 - vii. Provisions for disposal or alternative uses
 - f. Engineering design calculations for the reclamation process including:
 - i. Aeration / organic carbon reduction
 - ii. Nutrient reduction (as required)

- iii. Disinfection facilities selection
 - iv. Disinfectant reactor contact time
 - v. Coagulation and filtration processes (if required)
 - vi. Reverse osmosis process (if required)
 - vii. Pumping, piping and control valve systems
- g. A contingency plan assuring that untreated or inadequately treated wastewater will **not** be delivered to the use area including ground water recharge.
- h. A cross connection control plan identifying any cross-connection control issues, who is responsible for compliance and testing of cross-connection control activities, and details of the water purveyor's program for cross-connection control.
- i. A summary checklist form provided by the departments, showing how the report addresses each requirement of these standards.
5. All engineering reports proposing direct aquifer recharge projects shall
- (a.) Provide a process description and diagram of the additional reverse osmosis treatment facilities, RO brine management facilities, direct recharge / pumping facilities and monitoring well facilities.
 - (b.) Provide a hydrogeologic study of the ground water aquifer proposed to receive the reclaimed water including:³⁰
 - i. The impact of the recharge project on potable ground water.
 - ii. The source, area of recharge, quality, hydrostratigraphy, aquifer characteristics, and ground water flow patterns for all ground water within the ground water basin receiving recharged reclaimed water;
 - iii. All wells or areas that will be affected by the proposed project and describe the ground water quality in the aquifer receiving the reclaimed water;
 - iv. All well(s) subject to the highest reclaimed water contribution and shortest reclaimed water retention time in the underground;
 - v. The possibility of premature discharge of ground water to the surface, landslides, or other slope failures resulting from the proposed project
 - vi. Quantitative descriptions of the soil, soil layers, aquifer transmissivity, aquifer hydraulic conductivity, rate and direction of flow, aquifer boundaries, historic ground water levels, and aquifer storage capacity of the aquifer.
 - vii. Identification of the agency responsible for preventing the withdrawal of potable ground water within areas restricted by specified minimum separation distances and minimum retention time requirements.

³⁰ From 1997 WRR Standards.

- viii. Description of the methods of determination and results for minimum retention time in the underground and minimum horizontal separation between the point of direct recharge and withdrawal of potable ground water.
- ix. The number and location of monitoring wells.
- x. A water quality monitoring plan for treated wastewater, reclaimed water and ground water withdrawn from monitoring wells.

Questions:

- *Should this also apply to percolation projects?*
- *Could this part be stamped by a licensed hydrogeologist instead of an engineer*

6. All engineering reports proposing recovery from aquifer storage of reclaimed water shall be reviewed under the technical standards established under RCW 90.03.370(2).³¹
7. When applicable to the reclaimed water project, the engineering report shall also meet the regulatory requirements included under Ch 173-240 and 246-290 WAC.
8. Engineering reports shall include other information requested by the departments as necessary to assess the treatment, distribution or use of the water.
- 9.

Other Requirements for Ground Water Recharge

1. The recharge project shall meet all other applicable requirements outlined within these standards.

WAC 173-219-170 Requirements for plans and specifications³² (A27)

1. The plans and specifications for a reclaimed water facility are the detailed construction documents by which the owner or his or her contractor bid and construct the facility. The departments consider approved plans and specifications as part of a complete and accurate permit application.
2.

Before

beginning construction, a person applying for a reclaimed water permit shall submit at least two copies of plans and specifications to and receive approval from the departments.³³
3.

The content and

format of the plans and specifications shall be as stated in the state of Washington, "Criteria for sewage works design," and shall include a list of the facility design criteria and a plan for interim operation of facilities during construction.

³¹ This requirement was added to RCW 90.46.120 in 2007. The implementing regulation for RCW 90.03.370(2) is [Ch. 173-157 WAC](#), which also states that it does not apply to reclaimed water. Requirements likely must either be listed within this regulation or amend Ch 173-157 WAC for requirements applicable to reclaimed water aquifer recovery projects.

³² From WAC 173-240-080 (industrial wastewater facilities are regulated under [WAC 173-240-140](#) 173-240-140.

³³ Approve prior to going to bid.

WAC 173-219-180 Requirements for operations and maintenance manuals³⁴ (A28)

1. The departments consider an approved operation and maintenance manual as part of a complete and accurate permit application. The reclaimed water facility shall follow the approved method of operation, unless the departments approve changes in writing.
2. During the early stages of construction, a person applying for a reclaimed water permit shall submit at least two copies of a draft operations and maintenance manual and receive approval from the departments.³⁵
3. Before completing construction, a person applying for a reclaimed water permit shall submit at least two copies of a final detailed operations and maintenance manual and receive approval from the departments prior to permit issuance.
4. The operations and maintenance manual shall include
 - (a.) Regulatory requirements.
 - (b.) Manufacturer's information on equipment before unit startup.
 - (c.) Technical guidance for both normal and emergency operating conditions.
 - (d.) The following information:
 - i. The assignment of managerial and operational responsibilities, including plant classification and classification of required operators.
 - ii. A description of plant type, flow pattern, operation, and efficiency expected.
 - iii. The principal design criteria.
 - iv. A process description of each plant unit, including function, relationship to other plant units, and schematic diagrams.
 - v. A discussion of the detailed operation of each unit and description of various controls, recommended settings, fail-safe features, etc.
 - vi. A written preventive maintenance program ensuring that all equipment is kept in a reliable operating condition³⁶
 - vii. A discussion of how the treatment facilities are to be operated during anticipated maintenance procedures, and under less than design loading conditions, if applicable, such as initial loading on a system designed for substantial growth.
 - viii. A discussion of how the treatment facilities will provide a sufficient number of qualified personnel to operate the facility effectively so as to achieve the required level of treatment at all times.

³⁴ From WAC 173-240-080 Domestic Wastewater Facilities except as specifically noted. Note that Industrial facilities are regulated under WAC 173-240-150.

³⁵ Approve prior to going to bid.

³⁶ 1997 standards

- ix. A section on laboratory procedures, including sampling techniques, monitoring requirements, and sample analysis.
 - x. Recordkeeping procedures and sample forms to be used.
 - xi. A maintenance schedule that incorporates manufacturer's recommendations, preventative maintenance and housekeeping schedules, and special tools and equipment usage.
 - xii. A section on safety.
 - xiii. A section that lists the spare parts inventory, address of local suppliers, equipment warranties, and appropriate equipment catalogues.
 - xiv. Emergency plans and procedures.
 - xv. A section on operation and maintenance of the distribution system and use area.
5. For those projects funded by the U.S. Environmental Protection Agency, the operation and maintenance manual shall also follow the requirements of the EPA publication, "Considerations for Preparation of Operation and Maintenance Manuals."

WAC 173-219-160 Requirements for construction quality assurance ³⁷ (A29, 30, 31)

How do we assure adequate construction QA? This is existing practice. Help me!

- *Question: If the QA assurance plan is no longer required, how should the departments assure that the utility has provided adequately to assure quality control during construction? Include under plans and specifications?*

1. All facilities subject to the provisions of this rule must be constructed in accordance with the plans and specifications approved by the departments.
2. **Quality Assurance Plan.** If not included within previous submittals, a detailed plan shall be submitted to the departments showing how adequate and competent construction inspection will be provided. The construction quality assurance plan shall include a:
 - (a) Construction schedule with a summary of planned construction activities, their sequence, interrelationships, durations, and terminations.
 - (b) Description of the construction management organization, management procedures, lines of communication, and responsibility.
 - (c) Description of anticipated quality control testing that includes type of test, frequency, and who will perform the tests.

³⁷ From WAC 173-240-077 Domestic Wastewater Facilities

(d) Description of the change order process that includes who will initiate change orders, as well as who will review, negotiate, and approve change orders.

(e) Description of the technical records handling methodology that includes where plans and specifications, record drawings, field orders, and change orders will be kept.

(f) Description of the construction inspection program that includes inspection responsibility, anticipated inspection frequency, deficiency resolution, and inspector qualifications.

3. **Changes.** Any contemplated changes during construction, which are significant deviations from the approved plans, must first be submitted to the departments for approval.

- *Question: How should we define **significant**?*

4. **Declaration of Construction.** Within thirty days after acceptance by the owner of the construction or modification of a reclaimed water facility, the professional engineer in responsible charge of inspection of the project shall submit to the departments:

(a.) One complete set of record drawings:

(b.) A declaration stating the facilities were constructed in accordance with the provisions of the **construction quality assurance plan** and without significant change from the departments approved plans and specifications. The declaration shall include:

- a. Name and brief description of project
- b. Name and address of owner
- c. Date completed
- d. Date of approval of plans and specifications
- e. The following statement:

I hereby declare that I am the project engineer of the above identified project and that the project was reviewed and observed by me or my authorized agent in accordance with the provisions of the construction quality assurance plan. I further declare that the project was, to the best of my knowledge and information, constructed and completed in accordance with the plans and specification and major change orders approved by the department of ecology and as shown on the owner's "as-built"

- f. Signature, date, and seal of professional engineer

Permits

WAC 173-219- 200 Types of permits issued under this chapter

1. **Individual Reclaimed Water Permit.** Ecology issues an individual permit to the facility generating reclaimed water using the administrative procedures for waste discharge permits established under WAC 173-220 and 216 WAC. Typically, the permit requirements under this rule and under the Water Pollution Control Act, chapter 90.48 RCW shall be contained in a single permit document.
2. **General Reclaimed Water Permit.** Ecology may issue a general permit and accept and consider applications for coverage under a general permit, modify conditions of coverage, revoke and reissue coverage, or terminate coverage under a general permit. Unless the new rule establishes other procedures, a general permit shall be issued in accordance with the provisions of chapter 173-226 WAC.
3. **Exclusive Right.** The owner of a facility with a permit issued under this chapter has the exclusive right to any reclaimed water generated by the wastewater treatment facility. Use, distribution, and the recovery from aquifer storage of reclaimed water by the owner of the wastewater treatment facility is exempt from the permit requirements of RCW 90.03.250 and 90.44.060³⁸

WAC 173-219- 210 Permit Application

1. **Application required.** Any person generating or proposing to generate reclaimed water for distribution or use must apply for a permit for generation, distribution and final use of the reclaimed water except as described in (f) of this subsection.
 - a. No distribution or use of reclaimed water is authorized until such time as a permit has been issued consistent with the terms and conditions of this chapter.
 - b. Projects that include a point source discharge into any surface water of the state shall also be subject to the permitting requirements under the national pollutant discharge elimination system permit program, chapter 173-220 WAC.³⁹
 - c. A new application or a supplement to the most recent application shall be filed for any new or increased type of use not specifically authorized under a current permit. **[WAC 173-216-110]**
 - d. It is a violation of this chapter for a facility to fail to submit a permit application to the department as required by these rules.

³⁸ This is statutory language and should provide an administrative process for implementing within the rule. WRP is working on this with internal Ecology and an external stakeholder committee. This section may also need to address the relationship of reclaimed water permits where the reclaimed water is used as mitigation for new appropriative water rights.

³⁹ Current procedures are to issue one combined permit. Authority is from Ch 90.48 RCW and implementing WACs.

- e. For the purpose of satisfying the requirements of this subsection, any person generating reclaimed water under a permit issued by the department of Ecology prior to the time this rule is adopted shall be considered as meeting this requirement.
 - f. **Permitting exemptions:** Facilities generating reclaimed water do not require permitting under this chapter if **all** of the following conditions are met:
 - (i) The reclaimed water is not distributed.
 - (ii) The reclaimed water is only used for treatment plant purposes within the bounds of the wastewater treatment facility.
 - (iii) A permit is not otherwise required in order to comply with the Federal Clean Water Act or the state Water Pollution Control Act.
 - (iv) A permit is not otherwise required to protect public health.
2. **Filing the Application.** The application shall be filed with the lead agency on a form prescribed by the lead agency **in sufficient time**⁴⁰ to insure compliance with the requirements of Ch 90.46 RCW and any other applicable water quality standards or effluent standards and limitations **prior** to commencement of the distribution or use of the reclaimed water. The requirement for a permit application shall be satisfied if the owner of the facility files a complete application form appropriate for the type, category, or size of facility and any additional information required by the lead or non-lead agency pertaining to the water quality, location, rate or purpose of use.

WAC 173-219- 220 Signature Requirements

1. **Signature on Application.** All permit applications must be signed as follows:
- a. **Corporations.** By a responsible corporate officer. For the purposes of this section, a responsible corporate official includes either of the following:
 - i. A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation.
 - ii. The manager of one or more manufacturing, production, or operating facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - b. **Partnership.** By a general partner.
 - c. **Sole Proprietorship.** By the proprietor.
 - d. **Public Agency.** By either the principal executive officer or ranking elected official.
2. **Signature on Other Submittals.** All submittals required by permits, and other information requested by the department must be signed by a person described under subsection 1 of this section, or by their duly authorized representative.

⁴⁰ No time established -NPDES requires at least 180 days and state waste discharge requires 60 days.

- a. *Duly Authorized Representative.* A person is a duly authorized representative only if the person described in subsection 2 submits written authorization to the department specifying an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.
 - b. *Changes to authorization.* If an authorization under (a) of this subsection is no longer accurate, a new authorization satisfying the requirements of (a) of this subsection must be submitted to the department prior to or together with any reports or other information.
3. ***Certification.*** Any person signing a document under this section shall make the following certification, unless a different certification is applicable under another related section of this chapter:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

WAC 173-219-230 Draft determination to issue or deny permit

Upon receipt and review of a complete and accurate application for an individual permit, the lead agency shall make a draft determination to issue or deny a permit.

1. The lead agency shall prepare a fact sheet for every draft permit determination. Such fact sheets shall, at a minimum, summarize the:
 - a. Type and location of all proposed facilities.
 - b. Purpose of use.
 - c. Provisions for adequate and reliable treatment.
 - d. Water quality standards and limitations applied.
 - e. Flow quantity and rate.
 - f. Other permit conditions including source control and handling of residual solids generated by wastewater treatment;
 - g. Legal and technical grounds for the draft permit determination.
 - h. Procedures for the formulation of final determinations, comments, requesting a hearing, and any other procedures by which the public may participate in the formulation of the final determinations.

2. Fact sheets for permits combined with Ch 90.48 RCW permits shall also include the additional information required under WAC 173-220-060.
3. The lead agency shall notify the non-lead agency of each draft permit determination and shall provide the non-lead agency an opportunity to submit their written views and recommendations. Unless the non-lead agency waives or limits their review, the notification shall include transmission of the application, fact sheet and draft permit for comment or objection within thirty days, or if requested up to a maximum of ninety days.
4. The lead agency shall send the fact sheet to the applicant and, upon request, to any other person.

WAC 173-219-240 Process for public notice and comments

1. **Notice of draft determination.**
 - a. Notice of every draft permit determination regarding an individual permit shall be circulated in a manner designed to inform interested and potentially affected persons of the proposed water quality, location, rate and purpose of use and of the proposed determination to issue or deny a permit.
 - b. Notice shall be circulated within the geographical area of the proposed use as directed by the lead agency following the same procedures as established for discharge permits under WAC 173-220-050 (1).⁴¹
 - c. The lead agency shall notify other appropriate government agencies. For permits combined with Ch 90.48 RCW permits, notice shall include all government agencies required under WAC 173-220-070.
 - d. Notice shall be mailed to any other federal, state, or local agency, Indian tribe or any affected country, upon request.
 - e. Comment Period. The lead agency shall provide a period of not less than thirty days following the date of the public notice during which time interested persons may submit their written views on a draft permit determination. All written comments submitted during the thirty-day comment period shall be retained by the lead agency and considered in the formulation of its final determination with respect to the application. The period for comment may be extended at the discretion of the lead agency.
2. **Contents of Public Notice.** The lead agency shall prepare the contents of the public notice, which shall, at a minimum, include the following:
 - a. Name, address, phone number of agency issuing the public notice.
 - b. Name and address of each applicant, and if different, of the facility or activity to be regulated.
 - c. The actual or proposed water quality, location, rate and purpose of use.
 - d. Whether this is a new or existing facility or use.

⁴¹ Either cite by reference or spell out within this rule.

- e. The tentative determination to issue or deny a permit.
- f. The procedures for the formulation of final determinations, including the thirty-day comment period required by subsection (5) of this section and any other means by which interested persons may comment upon those determinations.
- g. Address and phone number of state premises at which interested persons may obtain further information.
- h. Copies of the fact sheet and draft permits.

3. Public access to information.

- a. Availability of records. In accordance with chapter 42.17 RCW, the lead agency shall make records relating to permits available to the public for inspection and copying. The lead agency shall provide facilities for the inspection of information relating to the permits and shall insure that employees honor requests for such inspection promptly without undue requirements or restrictions. The lead agency shall either (a) insure that a machine or device for the copying of papers and documents is available for a reasonable fee, or (b) otherwise provide for or coordinate with copying facilities or services such that requests for copies of non-confidential documents may be honored.
- b. Confidential Information. Claims of confidentiality shall be handled in accordance with the provisions of Ch.42.17 RCW, Ch. 173-03 WAC, and RCW 43.21A.160. For reclaimed water permits combined with NPDES permits, any information accorded confidential status, whether or not contained in an application form, shall be disclosed, upon request, to the USEPA regional administrator.⁴²

4. Public hearings. The applicant or any interested agency or person may request a public hearing with respect to a draft permit determination.

- a. Requesting a hearing. Any such request for a public hearing shall:
 - i. Be filed with the lead agency within the thirty-day public notice period.
 - ii. Indicate the interest of the party filing such request.
 - iii. Indicate the reasons why a hearing is warranted.
- b. Holding a hearing. The lead agency shall hold a hearing if it determines there is a significant public interest. Instances of doubt will be resolved in favor of holding the hearing. Any hearing brought pursuant to this subsection shall be held at a time and place deemed appropriate by the lead agency.
- c. Notice of public hearing. The lead agency shall circulate public notice of any hearing at least as widely as was the public notice under WAC 173-219- A40. Notice shall be circulated at least thirty days in advance of the hearing and include:
 - i. Name, address, and phone number of agency holding the public hearing.
 - ii. The time and location for the hearing.
 - iii. The nature and purpose of the hearing.

⁴² Ch 90.48 RCW federal delegation requirement.

- iv. The issues raised by the persons requesting the hearing, and any other appropriate issues which may be of interest to the public.
 - v. A reference to the public notice issued pursuant to WAC 173-219-4.6, including identification number and date of issuance;
 - vi. Contacts and locations where interested persons may obtain information.
4. **Notification of Final Permit Decision.** The lead agency shall notify the applicant and persons who have submitted written comments or requested notice of the final permit decision. This notification shall include response to comments received, the final permit issued, and reference to the procedures for contesting the decision.
5. **Appeal of a permit decision.** Within thirty days of notification of the lead agency determination under WAC 173-219-A40, any person may appeal a permit decision. For any permit decision for which the department of ecology is the lead agency, appeal shall be to the water pollution control hearings board in accordance with chapter 43.21B RCW.⁴³

WAC 173-219-250 Procedures to modify, suspend, or revoke a permit.⁴⁴ (A58)

The permit may be modified or revoked in whole or in part during its terms for cause including, but not limited to, the following:

1. Violation of any term or condition of the permit.
2. Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts.
3. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.
4. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations.
5. Establishment of a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) under (section 307(a) of the FWPCA)⁴⁵ for a toxic pollutant which is more stringent than any limitation upon such pollutant in the permit.
6. Failure or refusal of the permittee to allow entry to site at reasonable times for inspection purposes related to permit compliance.
7. Nonpayment of assessed permit fees.

WAC 173-219-260 Fees

1. The applicant must pay the applicable permit fees under chapter 173-224 WAC for permits issued by the department of Ecology.

⁴³ Proposed 2009 legislation. “For any permit decision for which department of health is the lead agency, application for an adjudicative proceeding must be in writing, state the basis for contesting the action, include a copy of the decision, be served on and received by the department of health within twenty-eight days of receipt of notice of the final decision, and be served in a manner that shows proof of receipt.”

⁴⁴ From WAC 173-220-190 for NPDES permits.

⁴⁵ Other applicable authority should be specified within the rule. (Standards under this rule, etc.)

2. The department of health may require fees appropriate for review and consultation from the applicant pursuant to RCW 43.70.250.

WAC 173-219-270 Procedures to Transfer a Permit

1. A permit is automatically transferred provided:
 - a. A written agreement between the old and new owners and generators containing a specific date for transfer of permit responsibility, coverage, and liability is submitted to the lead agency.
 - b. The lead agency does not notify the old and new owners and generators of their intent to modify, or revoke and reissue the permit. If this notice is not given, the transfer is effective on the date specified in the agreement mentioned in (a) of this subsection.
2. Unless a permit is automatically transferred according to subsection (1) of this section, a permit may be transferred only if modified or revoked and reissued to identify the new Permittee and incorporate such other requirements as may be necessary.

WAC 173-219-275 Permit Duration and Replacement (Added)

1. Individual Permits

- a. Permits shall be issued for fixed terms not exceeding five years.
- b. Any permittee shall file with the department a new application for replacement of the permit at least one hundred eighty days prior to its expiration.
- c. When a permittee has made timely and sufficient application for the renewal of a permit, an expiring permit remains in effect and enforceable until the application has been denied or a replacement permit has been issued by the department.
- d. The lead agency shall review the application in sufficient detail to insure:
 - i. The permittee is in substantial compliance with all of the terms, conditions, requirements and schedules of compliance of the expired permit.
 - ii. The department has up-to-date information.
 - iii. The reclaimed water quality is consistent with applicable water quality standards and limitations and other legally applicable requirements.
- e. The notice and public participation procedures specified in this chapter apply to each draft replacement permit.

2. Coverage Under A General Permit

- a. General permits shall be issued for fixed terms not exceeding five years from the coverage date.
- b. Any permittee shall file with the department a new application for coverage under a general permit or an application for an individual permit at least one hundred eighty days prior to the expiration date of the general permit under which the permittee is covered.

- c. When a permittee has made timely and sufficient application for the renewal of coverage under a general permit, an expiring general permit remains in effect and enforceable until the permitting agency denies the application, issues a new general permit, or cancels the expired permit.
- d. If a permittee fails to submit a timely and sufficient application, coverage shall expire on the expiration date of the general permit.

WAC 173-219- 280 Permit Terms and Conditions. Any permit issued by the lead agency shall specify the terms and conditions necessary to ensure that the Permittee maintains control over and is responsible for all facilities and activities inherent to the production of reclaimed water including the protection of public health and the environment. Unless the permit specifies otherwise, the permit shall include, but is not limited to conditions that:

1. Specify the location, rate and use of reclaimed water generated by the Permittee.
2. Ensure adequate and reliable treatment that, at all times, produce reclaimed water quality appropriate for the permitted uses.
3. Control impacts from industrial and toxic discharges that may affect reclaimed water quality through either a delegated pre-treatment program with the department of Ecology or by assuring that all applicable discharges have permits issued in accordance with Ch 90.48 RCW, WAC 173-220-150 and sections 204(b), 307, and 308 of the FWPCA.
4. Protect public health throughout the distribution and use of reclaimed water.
5. Prevent or control the introduction of pollutants into waters of the state.
6. Require any person who generates reclaimed water for distribution, storage or use by others to ensure through written enforceable contracts or ordinances that all applicable requirements are met.
7. Require proper facility operation and maintenance necessary to achieve compliance with the permit.
8. Provide a sufficient number of qualified personnel to operate the facility effectively including an operator, certified under chapter 173-230 WAC⁴⁶, in responsible charge of the day to day operation of the facility.
9. Establish a detailed self-monitoring and testing schedule including sampling type, method for determining compliance and frequency of monitoring that verify that the treatment process is functioning correctly and that the facility is achieving the required reclaimed water quality. Specified monitoring frequencies may consider the quantity and variability of the reclaimed water, the treatment method, past compliance, significance of pollutants, and cost of monitoring.
10. Require the use of accredited laboratories accredited under Ch 173-50 WAC for the submission of analytical data required for compliance with the permit.

⁴⁶ Statutory authority Ch 78.95 RCW.

11. Provide minimum requirements for reporting routine compliance monitoring, preventative maintenance and noncompliance events. Unless the permit specifies otherwise, reports shall be filed monthly with the lead agency and a copy sent to the non-lead agency.
12. Allow entry to inspect or investigate compliance with permit requirements. The departments or their authorized representatives may
 - a. Enter at all reasonable times in or upon any property, public or private in which reclaimed water is generated, distributed, used, or discharged subject to any access restrictions due to the nature of the project.
 - b. Enter upon premises where records are kept, have access to and copy at reasonable cost, any records required under terms and conditions of the permit.
 - c. Inspect any construction, monitoring equipment or method required in the permit.
 - d. Sample any reclaimed water or discharge of pollutants.
13. Require the permittee to promptly response to noncompliance events including:
 - a. Immediate action to stop, contain, and cleanup unauthorized discharges or otherwise stop the violation, and correct the problem.
 - b. Immediate notification of the lead agency (and the non-lead agency if required by the permit) of the failure to comply.
 - c. Submission of a detailed written report to the lead agency within thirty days, unless requested earlier, describing the nature of the violation, corrective action taken and/or planned, steps to be taken to prevent a recurrence, and any other pertinent information.

WAC 173-219- 280 Regulatory action for noncompliance

1. **Notification of Determination of Noncompliance.** When, in the opinion of the lead agency, a person violates or creates a substantial potential to violate Ch 90.46 RCW, the lead agency shall notify the person of its determination by registered mail. The determination shall not constitute an appealable order or directive. Within thirty days from the receipt of notice of such determination, the person shall file with the lead agency a full report stating what steps have been and are being taken to comply with the determination of the lead agency.
2. **Issuance of Order or Directive.** After the full report is filed or after the thirty days have elapsed, the lead agency may issue the order or directive as it deems appropriate under the circumstances, shall notify the person by registered mail, and shall inform the person of the process for requesting an adjudicative hearing.
3. **Compliance Schedules.** The lead agency may establish schedules and conditions to achieve compliance with applicable requirements.
 - a. Schedules of compliance shall set forth the shortest, reasonable period of time, to achieve the specified requirements.
 - b. When schedules for compliance exceed one year, the schedule shall be specified within the permit and provide interim requirements and the dates for their achievement with no more than one year between interim dates. If the time necessary for completion of the

- interim requirement (such as construction of a treatment facility) is more than one year and is not readily divided into stages of completion, interim dates shall be specified for the submission of reports of progress toward completion of the interim requirement.
- c. Within fourteen days following each date of compliance, the permittee shall provide the lead agency with written notice of the permittee's compliance or noncompliance with the requirement.
 - d. If a permittee fails or refuses to comply with an interim or final requirement in a permit, such noncompliance shall constitute a violation of the permit for which the lead agency may modify or revoke the permit or take direct enforcement action.
4. **Procedures to modify, suspend, or revoke a permit.** The permit may be modified or revoked in whole or in part during its terms for cause including, but not limited to, the following:
- a. Violation of any term or condition of the permit.
 - b. Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts.
 - c. A change in any condition that requires either a temporary or permanent reduction or cessation of generation, distribution or use of the reclaimed water.
 - d. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations.
 - e. Failure or refusal of the permittee to allow entry for permit compliance inspection.
 - f. Nonpayment of assessed permit fees.
5. **Formal enforcement procedures.**
- a. The lead agency, with the assistance of the attorney general, may sue in courts of competent jurisdiction to enjoin any threatened or continuing violations of any permits or conditions thereof without the necessity of a prior revocation of the permit.
 - b. The lead agency may assess or, with the assistance of the attorney general, sue to recover in court, such civil fines, penalties, and other civil relief as may be appropriate for the violation by any person of (i) any reclaimed water standards and limitations (ii) any permit or term or condition thereof, (iii) any filing requirements, (iv) any duty to permit or carry out inspection, entry, or monitoring activities, or (v) any rules, regulations, or orders issued by the lead agency.
 - c. The lead agency may request the prosecuting attorney to seek criminal sanctions for the violation by such persons of (i) any effluent standards and limitations or water quality standards, (ii) any permit or term or condition thereof, (iii) any filing requirements.
 - d. The lead agency, with the assistance of the prosecuting attorney, may seek criminal sanctions against any person who knowingly makes any false statement, representation, or certification in any form or any notice or report required by the terms and conditions of any issued permit or knowingly renders inaccurate any monitoring device or method required to be maintained by the department.

WAC 173-219- 300 Adequate and Reliable Treatment.

1. **Minimum Requirements.** Prior to distribution or use, reclaimed water permitted under this chapter must meet requirements for adequate and reliable treatment including:
 - a. WAC 173-219-310 Source control
 - b. WAC 173-219-320 Class-based treatment and monitoring
 - c. WAC 173-219-330 Use specific treatment and monitoring
 - d. WAC 173-219-340 Disinfection
 - e. WAC 173-219- 350 Reliability
 - f. WAC 173-219-360 Operation and maintenance
 - g. WAC 173-219-370 Sampling and analysis
2. **Alternative Methods.**
 - a. Other methods of treatment may be accepted if the applicant demonstrates to the satisfaction of the departments that the methods of treatment, sampling and monitoring ensure an equal degree of treatment, public health protection and reliability.
 - b. For uses requiring Class A or higher treatment, Ecology and DOH may require pilot plant or other studies to demonstrate that the other method is capable of reliably producing reclaimed water that is essentially free of viable pathogens.

WAC 173-219- 310 Source control requirements.

To assure adequate and reliable treatment of reclaimed water, the permittee shall control the entry of industrial and toxic discharges that may affect reclaimed water quality. At a minimum:

1. The reclaimed water generator shall insure that all collection systems providing the source of wastewater used to generate the reclaimed water comply with:
 - a. The requirements for pretreatment of industrial wastewater under 40 CFR 403 and Sections 307(b) and 308 in the Federal Water Pollution Control Act, and Ch 90.48 RCW, the Washington Water Pollution Control Act.
 - b. The discharge restrictions and prohibitions of dangerous waste regulations, chapter [173-303](#) WAC and [WAC 173-216-060](#) .
2. Unless exempted under [WAC 173-216-050](#), all industries discharging into the reclaimed water generator's wastewater collection system shall (a) have current waste discharge permits issued by Ecology or (b) be included under an Ecology delegated industrial wastewater pre-treatment program .
3. The lead agency may require the reclaimed water generator to submit an industrial user survey to determine the extent of compliance of all industrial users of the reclaimed water generator's wastewater collection system with state and federal pretreatment regulations.

WAC 173-219- 320 Class-based requirements

1. **Class A** (unrestricted non-potable human contact)⁴⁷
 - a. Meet the Class A minimum treatment techniques of source control, oxidation, coagulation, filtration and disinfection with treatment occurring in the order listed.
 - b. Bypassing of any treatment units is prohibited.
 - c. Meet the reliability requirements under this chapter at all times.
 - d. At the sampling point immediately following the oxidation treatment process and prior to filtration, meet the following:
 - i. Five-day Biochemical Oxygen Demand (BOD5): Monthly average shall not exceed 30 mg/L as measured by a 24-hour composite sample collected at least weekly.
 - ii. Dissolved oxygen must be present as measured by a grab sample collected at least daily when wastewater characteristics are most demanding on the treatment facilities.
 - iii. Total Suspended Solids (TSS): Monthly average shall not exceed 30 mg/L as measured by a 24-hour composite sample collected daily unless Ecology and DOH allow a reduced frequency.
 - e. At the sampling point following filtration and prior to final disinfection, the average monthly operating turbidity shall not exceed 2 NTU and turbidity shall not exceed 5 NTU at any time.
 - f. At the sampling point following final disinfection of the reclaimed water, the 7-day median shall not exceed 2.2 total coliform/100mL and sample maximum shall not exceed 23 total coliform/100mL as measured by a grab sample collected daily at a time when wastewater characteristics are most demanding on the treatment facilities and disinfection procedures.⁴⁸
2. **Class B**
 - a. Meet the minimum treatment techniques of source control, oxidation and disinfection with treatment occurring in the order listed.
 - b. Bypassing of any treatment units is prohibited.
 - c. Meet reliability requirements under this chapter at all times.
 - d. Meet the following water quality requirements at the sampling point for the final disinfected reclaimed water.
 - i. Five-day Biochemical Oxygen Demand (BOD5): Monthly average not exceeding 30 mg/L as measured by a 24-hour composite sample collected at least weekly.

⁴⁷ WRR 1997 Standards – primarily based on state of California requirements. Considering reducing the number of classes since most uses require either Class C or Class A or higher. Most currently permitted facilities are Class A or higher.

⁴⁸ The TAP recommends adding virus reduction standards to the rule for unrestricted human contact (Class A). Proof of virus reduction would be based upon a challenge study conducted for the water to be treated or acceptance of a third party study meeting peer review.

- ii. Dissolved oxygen must be present as measured by a grab sample collected at least daily when wastewater characteristics are most demanding on the treatment facilities.
- iii. Total Suspended Solids (TSS): Monthly average not exceeding 30 mg/L as measured by a 24-hour composite sample collected daily unless Ecology and DOH allow a reduced frequency.
- iv. Class B bacterial standards: 7-day median of 2.2 total coliform/100mL and sample maximum of 23 total coliform/100mL as measured by a grab sample collected daily at a time when wastewater characteristics are most demanding on the treatment facilities and disinfection procedures.

3. Class C (restricted human contact)

Meet all Class B requirements except that the Class C bacterial standards shall be a 7-day median of 23 total coliform/100mL and sample maximum of 240 total coliform/100mL as measured by a grab sample collected daily at a time when wastewater characteristics are most demanding on the treatment facilities and disinfection procedures.

4. Class D (lowest allowable class)

Meet all Class C requirements except:

- a. Class D bacterial standards shall be 7-day median of 240 total coliform/100mL as measured by a grab sample collected daily at a time when wastewater characteristics are most demanding on the treatment facilities and disinfection procedures.
- b. The departments may reduce the daily coliform sampling frequency for Class D to no less than two samples per week. In determining whether to reduce the sampling frequency, the departments shall consider additional site access controls, disinfection reliability and irrigation methods. If sampling less than daily, the 7-day median shall include the last 7 days actually sampled in determining compliance with the 7-day median.

WAC 173-219- 330 Use-based treatment requirements

WAC 173-219- 340 Treatment Process Disinfection

1. **Chlorine.** Where chlorine is used as the disinfectant in the treatment process⁴⁹

⁴⁹ For chlorine disinfection, the 1997 standards do not specify whether the CT refers to a chlorine concentration (C) as free chlorine or total chlorine and whether the T is (modal, median, or other). In practice, DOH has interpreted the “C” to be free chlorine and t-10 for the time (T) measurement. TAP is preparing recommendations for the rule advisory committee.

- a. There shall be a residual concentration, “C”, of at least 1 mg/L after at least 30 minutes contact time, “T”. The minimum contact time shall be based on peak hourly flow. The departments may require a greater CT value where needed to assure pathogen reduction.
- b. If pipelines or other facilities are used to meet the required chlorine contact time, such facilities are considered to be part of the treatment process and shall be subject to applicable requirements of these regulations and any other reclamation requirements specified by the departments.

2. Ultraviolet Light Disinfection.

Note: The latest revision of the CSWD contains criteria for UV disinfection generally following the AWWA-NWRI 2003 Guidelines. The TAP is providing recommendations for the rule advisory committee.

3. **Other Disinfection Systems.** Where ozonation, mixed oxidant or other non-chlorine systems are used as the disinfectant in the treatment process, the departments shall review and approve the design and installation of on a case-by-case basis. Design and operational requirements shall conform to recognized standards and engineering practices as defined by USEPA, Water Environment Federation, American Society of Civil Engineers, American Water Works Association and other recognized engineering references.⁵⁰

WAC 173-219- 350 Reliability

1. Unless the applicant demonstrates to the satisfaction of the departments that a proposed alternative will assure an equal degree of treatment reliability, facilities must meet all of the reliability requirements under this section.
2. There shall be no bypassing of untreated or partially treated wastewater from the approved reclamation facility to the distribution system or the point of use.
3. Facilities generating reclaimed water must retain inadequately treated wastewater for additional treatment or have authorization to discharge the wastewater to another permitted site.
4. Retention. Retention facilities approved as treatment reliability features must:
 - a. Reserve the approved facilities for the intended purposes.
 - b. Include all the necessary diversion works, conduits, and pumping and pump back equipment.
 - c. Provide a power supply independent of the primary power supply or a standby source for all diversion equipment.
 - d. For a short-term retention facility, provide capacity for at least a 24-hour period.
 - a. For a long-term retention facility, provide capacity for at least 20 days.

⁵⁰ The standards do not specify parameters for UV disinfection. The latest revision of the CSWD contains criteria for UV disinfection generally following the AWWA-NWRI 2003 Guidelines. The TAP is providing recommendations for the rule advisory committee.

5. Alternative Discharge Location. Facilities approved to discharge to another location as a treatment reliability feature must:
 - a. Obtain all required authorization and permits for the discharge location.
 - b. Include all the necessary diversion works, conduits, and pumping and pump back equipment.
 - c. Provide a power supply independent of the primary power supply or a standby power source for all diversion equipment.
6. Automated Diversions. Facilities approved to use automated diversions as a treatment reliability feature, must provide all necessary sensors, instruments, valves, and other devices to enable fully automatic diversion to the approved location. The reset process must be manually operated to prevent automatic restart.
7. Alarm System Requirements
 - a. Unless facilities have approved automated diversions in conjunction with a long-term reliability feature, all facilities generating reclaimed water must provide alarm systems warning of
 - i. Loss of power from the primary power supply.
 - ii. Failure of required treatment units.
 - iii. Interruption of required chemical feeds.
 - iv. Other features as required in the approved engineering report.
 - b. Alarm systems approved as treatment reliability features must:
 - i. Be independent of the primary power supply of the reclamation facility.
 - ii. Sound at an attended location to warn the operator in responsible charge or other designated responsible person capable of taking prompt corrective action. Individual alarms may be connected to a master alarm sounding at an attended location. If the facility is not attended at all times, the master alarm must sound at an attended location (such as a police or fire station) that will immediately alert the person in responsible charge.
8. Design and operational requirements for all treatment reliability features shall be consistent with the most recent edition of the state's Criteria for Sewage Works Design. 51

WAC 173-219- 360 Treatment Facility Operational Reliability

1. Each reclamation plant shall be provided with a sufficient number of qualified personnel to operate the facility effectively so as to achieve the required level of treatment at all times.
2. A preventive maintenance program shall be provided at each reclamation plant to ensure that all equipment is kept in a reliable operating condition.

⁵¹ TAP recommends that the additional detail under Article 10 and 11 of the 1997 WRR remain as agency guidance design criteria.

3. Operating records shall be maintained at the reclamation plant or a central depository within the operating agency. These shall include: all analyses specified in these regulations; records of operational problems, unit process and equipment breakdowns, and diversions to emergency storage or disposal; and all corrective or preventive action taken.
4. Process or equipment failures triggering an alarm shall be recorded and maintained as a separate record file. The recorded information shall include the time and cause of failure and corrective action taken.
5. A monthly summary of the operating records as specified under (3) of this section shall be filed monthly with the Washington Departments of Health and Ecology.⁵²
6. Any discharge of untreated or partially treated wastewater to the use area, and the cessation of same, shall be reported immediately by telephone to the Washington Departments of Health and Ecology and the local health department.

WAC 173-219- 370 Sampling and Analysis Reliability

1. Specific sampling type and frequency are included under class-based and use-based treatment requirements. Additional sampling parameters may be specified by the Departments of Health and Ecology within the permit.
2. For some uses, the departments may require a groundwater monitoring program. Where required, the groundwater monitoring program shall be established by the permittee and approved by the Washington Departments of Health and Ecology. The monitoring program shall be based on type of use, reclaimed water quality and quantity, site-specific soil and hydrogeologic characteristics, and other considerations.
3. Samples shall be analyzed by approved laboratory methods, and analyses shall be conducted in laboratories approved by the Washington Department of Ecology.

⁵² This requirement may be unnecessary under a streamlined permit system. Should DMRs only be submitted to one (the lead agency) for a project once permitted?

Reclaimed Water Distribution and Storage

WAC 173-219-410 Emergency Storage of Reclaimed Water

1. Whenever reclaimed water is generated that cannot be used as permitted, the person maintaining control must store the reclaimed water until it can be used, divert it to a different use or discharge it to a permitted discharge location.⁵³
 - a. Facilities with no other permitted alternatives shall provide a minimum storage capacity of three times the average daily flow.⁵⁴
 - b. When wet weather conditions preclude the use of reclaimed water, facilities shall provide sufficient capacity to store reclaimed water for the duration and intensity of a 10-year storm. A minimum of 20 years of climatic data shall be used to determine the minimum storage volume required. Data shall be representative of the area involved.

WAC 173-219-420 Distribution System Requirements

1. **Maintenance of Chlorine Residual.** Except as provided under a and b of this subsection, the person maintaining control shall provide a chlorine residual of at least 0.5 mg/L in the reclaimed water during conveyance from the reclamation plant to the point of use.⁵⁵
 - a. Maintenance of chlorine residual is not required in reclaimed water impoundments and storage ponds.⁵⁶
 - b. Where justified on a case-by-case basis, the departments may waive the requirements for maintaining a chlorine residual during conveyance to the point of use.
2. **Labeling.** The person maintaining control of the reclaimed water shall label all reclaimed water valves, storage facilities, and outlets to warn the public or employees that the water is not intended for drinking. Labeling requirements are specified under WAC 173-219-B15⁵⁷.
3. **Pipe Separation.**
 - a. The person maintaining control of the reclaimed water shall assure that the maximum attainable separation between reclaimed water lines and potable water lines shall be practiced in accordance with the latest edition of the *Criteria for Sewage Works Design*, Washington Department of Ecology.
 - b. Unless the lead agency approves a waiver from these separation distances within an approved engineering report,

⁵³ Does this fit better under the submittal requirements in Part A.? The TAP recommends that a and b be place into guidance and have the rule refer to guidance found in CSWD or subsequent guidance and require that the Engineering Report contain basic design data and sizing calculations. The TAP suggested that the permitting agencies may approve an alternative design for storage volume if supported by documentation of equivalent reliability.

⁵⁴ The storage time may be longer if reclaimed water must be stored for a seasonal use.

⁵⁵ The TAP recommends that the 0.5 mg/L chlorine residual be replaced with a “detectable chlorine residual measured as free, total, or chlorine dioxide.”

⁵⁶ The TAP recognizes that water quality requirements following storage are project specific, based on type and retention time, uses following storage, and extent of the distribution system. Requirements should not discourage the use of reclaimed water compared to alternative sources.

⁵⁷ Flag for numbering system – reference to Part A-II responsibilities.

- i. A minimum horizontal separation of 10 feet shall be maintained between reclaimed water lines and potable water lines.
 - ii. When crossing, a minimum vertical separation of 18 inches shall be maintained between reclaimed water lines and potable water lines. The potable water line shall be above the reclaimed water line
4. **Cross- connection control**⁵⁸
- a. There shall be no cross-connections between the reclaimed water and potable water systems.
 - b. The permittee or person(s) who distributes reclaimed water or owns or otherwise maintains control over the use area shall coordinate with the water supplier which provides potable water to the use area to establish and obtain approval from the Washington Department of Health for a cross-connection control and inspection program pursuant to WAC 246-290-490.
 - c. Where both reclaimed water and potable water are supplied to a reclaimed water use area, a reduced pressure principle backflow prevention device or an approved air gap separation shall be installed at the potable water service connection to the use area.
 - d. Where potable water is used to supplement a reclaimed water system, there shall be an air gap separation, approved and regularly inspected by the potable water supplier, between the potable water and reclaimed water.
 - e. Reclaimed water shall not enter a dwelling unit or a building containing a dwelling unit except as approved for fire protection, toilet or urinal flushing (where residents do not have access to the plumbing system for repairs or modifications).⁵⁹
1. **Other Design Requirements.** Reclaimed water distribution pipe material, valves, valve covers, hydrants, and associated components shall comply with the most recent AWWA Manual M24 standards or other recognized standard engineering practices.

WAC 173-219-430 Distribution by tank trucks

1. Tank trucks (and similar equipment) may be used to distribute reclaimed water provided the tank truck is
 - a. Clearly identified with reclaimed water advisory signs.
 - b. Inspected and approved for such use by the water supplier which provides potable water to the use area prior to transporting reclaimed water.⁶⁰
2. Tank trucks used to transport reclaimed water shall **not** be:
 - a. Used to transport potable water that is used for drinking or other potable purposes.

⁵⁸ 1997 WRR Standards, Article 12, Section 3.

⁵⁹ The TAP recommends that indoor use of reclaimed water not be prohibited but controlled via local or state plumbing codes.

⁶⁰ This is from the WRR Standards but does not make total sense to me as the tank truck could belong to the reclaimed water purveyor and never to used for potable water. What if the truck is used for transporting other liquids – Who would inspect for protection of public?

- b. Filled through on-board piping or hoses that may subsequently be used to fill tanks with water from a potable water supply.

WAC 173-219-440 Minimum Setback Distances from Potable Supplies

- 1. The minimum setback distance between any reclaimed water pipeline and a potable water supply well shall be

Reclaimed Water	Minimum Setback Distance
Class A or higher	50 feet
Class B or C	100 feet
Class D	300 feet

- 2. Where reclaimed water is used for spray or surface irrigation, the minimum setback distance between the area subject to irrigation and any potable water supply well shall be:

Reclaimed Water	Minimum Setback Distance	
	To Potable Supply Well	For Spray Irrigation, to Public Area
Class A or higher	50 feet	None
Class B or C	100 feet	50 feet
Class D	300 feet	100 feet

- 3. Where reclaimed water is used for an impoundment or storage pond or wetland, the minimum setback distance between the perimeter of the impoundment or wetland and any potable water supply well shall be:

Reclaimed Water	Minimum Setback Distance	
	Unlined or with seepage to ground.	Lined or sealed to prevent measurable seepage
Class C or higher	500 feet	100 feet
Class D	1000 feet	200 feet

- 4. The departments may approve exceptions to the required minimum setback distances, provided the lesser setback distances are demonstrated to the satisfaction of the departments to assure an equal degree of public health protection.

WAC 173-219-450 General Use Area Requirements

- 1. The person maintaining control of the reclaimed water shall assure that the public and employees are notified of the use of reclaimed water at all use areas. This shall be accomplished by the posting of advisory signs at use areas, notices on scorecards, distribution of written notices to residents or employees, or by other methods.
- 2. Except as otherwise approved by the departments, reclaimed water, including runoff and spray, shall be confined to the designated and approved use area in accordance with the state permit. Adequate measures shall be taken to
 - a. Assure that reclaimed water will not be sprayed on people or any facility or area not designated for reuse, including but not limited to buildings, passing vehicles, and drinking water fountains.

- b. Prevent the unplanned ponding of water, breeding of vectors of health significance and the creation of odors, slimes, or aesthetically displeasing deposits.
3. All reclaimed water valves and outlets shall be of a type, or secured in a manner, that permits operation only by authorized personnel. Except as authorized by the departments, hose bibs on reclaimed water lines are prohibited.
4. The person maintaining control of the reclaimed water shall label all reclaimed water valves, storage facilities, and outlets to warn the public or employees that the water is not intended for drinking.
5. The person maintaining control of the reclaimed water shall assure that the maximum attainable separation between reclaimed water lines and potable water lines shall be practiced at the use area.
6. Additional requirements as listed under specific types of use.

WAC 173-219-460 Labeling of Reclaimed Water

1. All reclaimed water piping, valves, outlets, storage facilities and other appurtenances shall be color-coded purple [Pantone 522 or other shades of purple acceptable to review agencies], taped purple [Pantone 512 or other shades of purple acceptable to review agencies], or otherwise marked to identify the source of the water as being reclaimed water.
2. All reclaimed water piping and appurtenances shall be embossed or integrally stamped or marked "CAUTION: RECLAIMED WATER - DO NOT DRINK" or be installed with a purple [Pantone 512 or other shades of purple acceptable to review agencies] identification tape or polyethylene vinyl wrap. The warning shall be stamped on opposite sides of the pipe and repeated every three feet or less.
3. Identification tape shall be at least three inches wide and have white or black lettering on a purple [Pantone 512 or other shades of purple acceptable to review agencies] field stating "CAUTION: RECLAIMED WATER - DO NOT DRINK." Identification tape shall be installed on top of reclaimed water pipelines, fastened at least every ten feet to each pipe length, and run continuously the entire length of the pipe.
4. Other pipe and construction warning tape markings may be acceptable to the review agencies provided the colors and messages are consistent with the above sections.
5. Signage or advisory notification shall be colored purple with white or black lettering [Pantone 522 or 512 or other shades of purple acceptable to review agencies]. Signs or notification should read "Reclaimed Water do Not Drink" or other advisory or educational language acceptable to the departments. Where appropriate (depending on the level of reclaimed water treatment), such warning shall inform the public or employees to avoid contact with the water.

WAC 173-219-500 Reclaimed Water for Commercial and Industrial Uses

1. **Applicability.** This section applies only to reclaimed water used as a source of supply for commercial and industrial non-irrigation purposes that do not otherwise require potable water.
2. **Minimum Class Requirements.**
 - a. Class A Uses. Nonpotable water uses that have unrestricted human contact or similar high potential for public exposure require Class A or higher quality water. Typical uses include, but are not limited to:
 - i. Urban water features such as decorative fountains.
 - ii. Spray washing to clean streets.
 - iii. Fire protection in hydrants and in sprinkler systems at non-residential commercial or industrial facilities or buildings, hotels, motels or in residential buildings (such as apartments and condominiums) where the residents do not have access to the plumbing system for repairs or modifications.
 - iv. Flush toilets and urinals in commercial or industrial facilities or buildings, hotels, and motels or in residential buildings (such as apartments and condominiums) where the residents do not have access to the plumbing system for repairs or modifications.
 - v. Industrial cooling purposes where aerosols or other mist are created
 - vi. Industrial processes with exposure of workers.
 - b. Class B Uses. The following nonpotable water uses require Class B or higher quality water.
 - i. Washing yards, lots, and sidewalks on corporate grounds.
 - ii. Fish hatchery basins.
 - c. Class C Uses. Nonpotable water uses that have restricted human contact or similar reduced potential for public exposure require Class C or higher quality water. Typical uses include, but are not limited to:
 - i. Street sweeping by dampening brushes and street surfaces.
 - ii. Dust control by dampening unpaved roads and other surfaces.
 - iii. Dampening soil for compaction at construction sites, landfills, and elsewhere
 - iv. Water jetting for consolidation of backfill material around pipelines for reclaimed water, sewage, storm drainage, and gas, and conduits for electricity⁶¹
 - v. Fire fighting by dumping from aircraft
 - vi. Ship ballast water

⁶¹ Tap did not think water jetting for compaction needs to be included.

- vii. Washing Aggregate and Making Concrete
 - viii. Feed supply for industrial boilers
 - ix. Supply for Industrial cooling purposes where aerosols or other mist are not created
 - x. Industrial processes without exposure to workers.
- d. Class D Uses. Reclaimed water meeting Class D requirements may be used for flushing sanitary sewers.
- e. Exceptions. The departments may consider exceptions to these class requirements on a case-by-case basis. The departments must approve any such exceptions in writing.

7. Additional water quality requirements. None listed.

8. Other special requirements. None listed.

WAC 173-219-530 Land Application (Irrigation) Uses

1. **Applicability.** This section applies to the non-potable use of reclaimed water for agricultural food and non-food crop irrigation and the watering of landscape features such as lawns, golf courses, and highway medians.
2. **Minimum Class Requirements.**
 - a. Class A Uses. Nonpotable water uses that have unrestricted human contact or similar high potential for public exposure require Class A or higher quality water. Typical uses include, but are not limited to:
 - i. Food crop irrigation uses except as otherwise listed in this section.
 - ii. Irrigation of public landscape areas including parks, golf courses, and playgrounds.
 - iii. Irrigation of residential landscapes.
 - b. Class B Uses. Reclaimed water meeting Class B or higher requirements may be used for surface irrigation of food crops provided the water does not contact the edible portion of the crop.
 - c. Class C Uses. Nonpotable water uses that have restricted human contact or similar reduced potential for public exposure require Class C or higher quality water. Typical uses include, but are not limited to:
 - i. Freeway landscapes, cemeteries.
 - ii. Agricultural irrigation of non-food crops except as listed under (b) or (d) of this subsection.
 - iii. Pasture with access to milking animals.
 - d. Class D Uses. Reclaimed water meeting Class D requirements may be used for

- i. Surface irrigation of orchards and vineyards provided the fruit is not harvested if it contacts either the irrigation water or ground.
 - ii. Spray or surface irrigation of restricted access trees, fodder, fiber and seed non-food crops provided pasture is not used for milking animals.
 - iii. Spray or surface irrigation of restricted access food crops provided the food crops undergo physical or chemical processing sufficient to destroy all pathogenic agents prior to distribution or sale and the use is specifically authorized by DOH or Ecology.
- e. Exceptions. The departments may consider exceptions to these class requirements on a case-by-case basis. The departments must approve any such exceptions in writing.
3. **Additional water quality requirements.** Reclaimed water must be applied at agronomic rates. This depends on type of crop, soil characteristics, salinity, sodicity, ion toxicity, nutrients, trace elements, and irrigation method. Guidance is available.
4. **Other special requirements.**
- a. Hydraulic loading rate. The hydraulic loading rate of reclaimed water shall be determined based on a detailed water balance analysis. The calculated loading rate(s) and the parameters and methods used to determine the loading rate(s) shall be submitted to the Washington Departments of Health and Ecology for approval.
 - b. There shall be no application of reclaimed water for irrigation purposes when the ground is saturated or frozen.

WAC 173-219-560 Impoundments

1. **Applicability.** This section applies to the non-potable use of reclaimed water for landscape impoundments such as ponds and golf course water hazards and public water features such as fish ponds, man-made “lakes”, and constructed “wetlands”.
2. **Special Use Advisory.** Reclaimed water shall not be used as a source of supply for swimming pools unless specifically authorized by Health and Ecology under a reclaimed water permit.⁶²
3. **Minimum Class Requirements.**
 - a. Class A Uses. Reclaimed water used in recreational impoundments with unrestricted public contact or similar potential for public exposure shall, at a minimum, meet the Class A requirements. Such uses include, but are not limited to recreational lakes and public water features, fishponds and constructed treatment wetlands.⁶³
 - b. Class B Uses. Reclaimed water used in recreational impoundments with restricted public contact or similar potential for public exposure shall, at a minimum, meet the Class B

⁶² Article 2, Section 3(b) 1997 WRR Standards.

⁶³ RCW 90.46.XXX until new rule adopted and 1997 WRR Standards Article 2, Section 4 state that constructed treatment wetlands shall meet Class A or Class B.

requirements. Such uses include fishing and boating and other non-body contact uses including constructed treatment wetlands⁶⁴.

- c. Class C Uses. Reclaimed water used in landscape impoundments with restricted public contact or similar potential for public exposure shall, at a minimum, meet the Class C requirements. Such uses include, but are not limited to, golf course water ponds/hazards, landscape ponds and vegetative landscape (lily) ponds.
- d. Class D Uses. None listed.
- e. Exceptions.
 - i. Reclaimed water that does not meet Class A or B reclaimed water standards may be discharged into constructed treatment wetlands provided a lesser standard is specifically authorized by Health and Ecology and the project includes a comprehensive monitoring plan to evaluate the effectiveness of the project and the degree of water quality improvement provided.
 - ii. The departments may consider exceptions to these class requirements on a case-by-case basis. The departments must approve any such exceptions in writing.

3. **Additional water quality requirements.**

- a. Phosphorus and Nitrogen. Nutrient removal to reduce levels of phosphorus and/or nitrogen is recommended for reclaimed water used as a source of supply for recreational impoundments to minimize algal growths and maintain acceptable aesthetic conditions.
- b. Groundwater Protection. Reclaimed water impoundments and storage ponds shall not result in contamination of groundwater that is used as, or suitable to be used as, a source of water supply for domestic purposes. Reclaimed water impoundments and storage ponds that are not lined or sealed to prevent seepage are acceptable if it is demonstrated to the satisfaction of the Washington Departments of Health and Ecology that such contamination will not occur.
- c. Surface Water Protection. Impoundments with an outlet flowing to surface waters must requirements for a surface water discharge.

4. **Other Special Requirements. None listed.**

WAC 173-219-600 Wetlands

1. **Applicability** This section applies only to the use of reclaimed water to create, restore or enhance wetlands that are considered waters of the state.
 - a. Waters of the State. Wetlands which receive reclaimed water meeting the requirements of these standards are considered waters of the State. These include existing natural wetlands and constructed beneficial use wetlands. These standards do not apply to constructed treatment wetlands which are not considered waters of the State.

⁶⁴ See footnote #25.

- b. Mitigation Wetlands - Wetlands created to replace natural habitat are intended to mitigate the conversion or loss of natural wetlands and are regulated as such. If acceptable to the appropriate review agencies and done according to an approved wetland mitigation plan, Class A reclaimed water may be used as a water supply for mitigation wetlands. Otherwise, the discharge of reclaimed water to mitigation wetlands is not authorized under these standards.
2. **Special Use Advisory.** Use of reclaimed water in Category I wetlands or to salt-water dominated wetlands is not permitted, except where it can be demonstrated that no existing significant wetlands functions will be decreased and overall net environmental benefits will result from the discharge.
 3. **Minimum class-based requirements**
 - a. Class A. Where natural and constructed beneficial use wetlands receiving reclaimed water provide potential human contact recreational or educational beneficial uses, discharge shall meet Class A reclaimed water standards.
 - b. Class B. Where natural and constructed beneficial use wetlands receiving reclaimed water provide fisheries, or potential human non-contact recreational or educational beneficial uses, discharge shall meet Class B reclaimed water standards.
 - c. Class C. Where natural wetlands receiving reclaimed water provide potential non-contact recreational or educational beneficial uses through restricted access, discharge shall, at a minimum, meet Class C reclaimed water standards.
 - d. Class D. Reclaimed water discharged to other natural wetlands shall be treated to Class D reclaimed water standards.
 4. **Additional water quality requirements for wetlands**
 - a. Antidegradation. Existing beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses shall be allowed, unless the discharge of reclaimed water will result in a net environmental benefit as established under this section. .
 - b. Annual Limits. Reclaimed water discharged to wetlands shall not exceed, on an average annual basis, the following concentrations, unless net environmental benefits are provided as established under this section.
 - BOD₅ 20 mg/L
 - TSS 20 mg/L
 - Total Kjeldahl Nitrogen (as Nitrogen) 3 mg/L
 - Total Phosphorus (as Phosphorus) 1 mg/L
 - c. Phosphorus-limited Lakes. For wetlands contiguous with a phosphorus-limited lake,
 - i. Assimilative Capacity. The allowable discharge total phosphorus limit to the wetland will be determined based on an analysis of the expected assimilation capacity of the wetland for total phosphorus and based on the appropriate total phosphorus loading to the lake that will not cause or contribute to a violation of eutrophication standards.
 - ii. Mass Loading Rates

Mass loadings on an annual average basis are not to exceed the following limits based on the annual average mass loadings that can be expected to achieve near-background ambient constituent concentrations within the natural or constructed beneficial use wetland.

BOD5	5 kg/ha/d
TSS	9 kg/ha/d
Total Nitrogen (as Nitrogen)	1.2 kg/ha/d
Total Phosphorus (as Phosphorus)	0.2 kg/ha/d

Higher mass loading rates will be considered if an applicant provides monitoring and other scientific data that demonstrate that higher mass loadings can be assimilated without violation of the wetland biological criteria established in these standards and that the wetland will still result in a net increase in environmental function.

- d. Ammonia .Un-ionized ammonia concentrations in reclaimed water discharged to a natural or constructed beneficial use wetland must not exceed Washington chronic toxicity standards (WAC 173-201A-040(3)) for freshwater systems, unless compliance with biological standards within the wetland receiving higher concentrations can be demonstrated and the net environmental benefit standard can be met.
- e. Metals . Metal concentrations in reclaimed water discharged to a natural or constructed beneficial use wetland must not exceed Washington surface water quality standards (WAC 173-201A), unless acute whole effluent toxicity testing using daphnids demonstrates absence of toxicity or can be demonstrated that net environmental benefits will be created.
- f. Exception for Lower Quality Natural Waters .Whenever the natural conditions of said waters are of a lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria.

5. Hydrologic and Hydraulic Criteria

- a. Hydraulic Loading - Augmentation of wetland hydrologic regime is not to exceed an additional (above background) average annual hydraulic loading rate of 2 cm/day to Category II wetlands and 3 cm/day to Category III and IV wetlands, unless monitoring can demonstrate that net ecological benefits (Article 6) can be maintained at higher hydraulic loading rates. Maximum annual average hydraulic loading rate to constructed beneficial use wetlands is limited to 5 cm/day unless monitoring can demonstrate that net ecological benefits can be maintained at higher hydraulic loading rates. Hydraulic loading rate will be determined as the ratio of the average annual flow rate of reclaimed water to the effective wetted area of the wetland, and will be reported in units of cm/day.
- b. Water levels - Water levels fluctuations within a wetland receiving reclaimed water must satisfy the two following conditions:

- i. Average monthly water level elevations under the reclaimed water wetland hydrologic regime are not to increase by more than 10 cm compared to the average pre-augmentation monthly water level, and
 - ii. The frequency and duration of water level fluctuations above pre-augmentation average may be further limited in the following situations:
 - iii. If the wetland is characterized by relatively high vegetation species richness, then the frequency of stage excursions above 15 cm shall not exceed 6 per year and the duration shall not exceed 72 hours per excursion; or
 - iv. If the wetland contains a high quality bog or fen component, then the duration of stage excursions shall not exceed 24 hours in any year; or
 - v. If the wetland is inhabited by breeding native amphibians, then during the breeding season (February through May) and within the breeding zones, water level excursions shall not exceed 8 cm and the duration of all excursions shall not exceed 24 hours in any 30 day period.
- c. Modification of Criteria. These criteria may be modified if a demonstration based on site-specific monitoring and other acceptable scientific data can show that unacceptable changes to the biological criteria will not occur, or net environmental benefits are gained.

6. Biological Criteria: Standards in Wetlands Receiving Reclaimed Water

- a. Biological criteria will be used to provide protection for the existing or planned structure and function of the natural or constructed beneficial use wetland. Biological criteria are established for the following wetland structural components: vegetation, macroinvertebrates, amphibians, fish, and birds. Biological criteria are also established for populations of threatened or endangered species as defined in Washington's rules.
- b. Biological criteria will reference existing, pre-discharge conditions in natural wetlands, and negotiated mature conditions in constructed beneficial use wetlands. Biological criteria will not be lowered by more than 25 percent compared to the reference condition over the entire area of the natural or constructed beneficial use wetland, and by no more than 50 percent at any individual station. For constructed beneficial use wetlands receiving reclaimed water, these biological criteria will not be enforced for the first five years of operation. Acceptable sampling methods and numbers of stations to quantify these biological criteria will be determined on a case-by-case basis and will be the minimum necessary to demonstrate compliance.
- c. Specific biological criteria include:
 - i. Vegetation cover or dominance. The average annual combined percent cover or dominance of all macrophytic plant species.
 - ii. Plant diversity. The average annual total number of macrophytic plant species.
 - iii. Macroinvertebrates. The average annual macroinvertebrate biomass (weight of organisms per square meter) and number of species.

- iv. Amphibians. The average annual number of amphibian species.
- v. Fish. The average annual fish population biomass and number of species.
- vi. Birds. The average annual density of wetland dependent birds (number per hectare) and number of species.
- vii. Threatened or endangered species. Percent cover or population density and total number of species.

7. **Ground Water Protection Evaluation (Wetlands Uses)**

For any wetland receiving reclaimed water, sufficient hydrogeologic evaluation should be performed to determine if the wetland occurs in an area that provides ground water recharge at any time of the year, and if so:

- a. Application of reclaimed water exhibiting parameter concentrations 50 percent or lower than the ground water quality criteria require no additional ground water evaluation or follow-up action.
- b. Application of reclaimed water exhibiting parameter concentrations greater than 50 percent of the ground water quality criteria require site-specific hydrogeologic investigation (i.e., evaluation of wetland/ground water interaction, ground water recharge/discharge, gradient, project proximity to water supply wells, etc.) to show that hydrogeologic conditions are adequate to prevent degradation of ground water quality.
- c. Application of reclaimed water exhibiting parameter concentrations exceeding the ground water quality criteria may undergo additional treatment in the wetland environment which may also constitute AKART. However, application of reclaimed water exhibiting parameter concentrations exceeding the ground water quality criteria will require ground water monitoring and analysis for sufficient length of time to determine that the application of this reclaimed water will not degrade existing ground water quality.

8. **Net Environmental Benefit**

- a. Demonstration Required. Where it can be demonstrated that net environmental benefits will be derived as a result of the use of reclaimed water, exceptions to the standards herein will be considered.
- b. Criteria. Two criteria must be met to demonstrate net environmental benefit:
 - i. Full and uninterrupted protection will be given to significant, existing beneficial uses of the receiving water, including ground water, in the absence of the reclaimed water.
 - ii. New beneficial uses or fuller realization of existing or potential beneficial uses will result from the reclaimed water discharge as demonstrated from existing scientific evidence and continued monitoring of biological indicators listed in this section.

9. **Background Studies Required**⁶⁵. For approval of discharge of reclaimed water to wetlands, the applicant must perform sufficient background studies to:
- a. Identify the category of the existing wetland and proposed wetlands;
 - b. Identify the existing beneficial uses of the existing and proposed wetland;
 - c. Determine the hydrologic regime of the existing and proposed wetland, including depth and duration of inundation, and average monthly water level fluctuations. An estimated monthly water budget will be provided by the applicant and compared to actual conditions during operation;
 - d. Identify class of reclaimed water to be discharged, associated parameter concentrations, and annual loading rates to the wetlands;
 - e. Determine whether the wetland occurs in a ground water recharge or discharge area;
 - f. Provide baseline monitoring information for natural wetlands sufficient to allow determination of reference conditions for parameters in this section to be performed during a growing season prior to initiation of discharge;
 - g. Provide an estimated description of the mature biological structure for a constructed beneficial use wetland; and
 - h. Support any claims of net environmental benefit.
10. **Operational Monitoring.** Periodic monitoring will be performed to document that beneficial uses existing prior to reclaimed water use and biological standards as defined in this section are protected or enhanced.
- a. At a minimum, this monitoring will be conducted during the first, second, fourth, sixth, eighth, and 10th growing season after initiation of reclaimed water use and include:
 - i. Vegetation, macroinvertebrates, amphibians, fish, birds, and threatened or endangered species surveys;
 - ii. Continuous surface water depth readings at a minimum of one station typical of the wetland.
 - iii. Annual monitoring shall be performed for 10 years or, where net environmental benefit is a stipulated goal, until long-term protection or enhancement of beneficial uses and biological criteria is demonstrated; and
 - iv. For those projects receiving reclaimed water characterized by average annual parameter concentrations less than or equal to 50 percent of ground water quality criteria, and less than 50 percent of required surface water discharge concentrations, no annual ground water monitoring or follow-up action is required.

⁶⁵ Would this section (B58) fit better under submittal requirements?

- b. Additional monitoring may be required in the permit to demonstrate protection and enhancement of beneficial uses.

WAC 173-219-700 Streamflow Augmentation (Surface Water)

1. **Applicability.** These standards shall apply only to planned, streamflow augmentation projects identifying a beneficial purpose that includes but is not limited to in-stream flow enhancement, irrigation supplies, water right replenishment or transfer and fisheries propagation.
2. **Planning Requirement.** Reclaimed water use for streamflow augmentation must be incorporated within a sewer or water comprehensive plan as applicable, adopted by the applicable local government and approved by the departments of Health and Ecology as applicable.
3. **Minimum water quality requirements.** Reclaimed water used for streamflow augmentation shall meet the requirements of the federal water pollution control act, chapter 90.48 RCW.
4. **Other requirements.** None listed.

WAC 173-219-800 Ground Water Recharge

1. **Applicability.** These standards shall apply only to planned, ground water recharge projects using reclaimed water. Reclaimed water may recharge groundwater from facilities designed to percolate the water through the soils to reach the aquifer or recharge directly into the aquifer.
2. **Planning Requirement.** Reclaimed water use for groundwater recharge must be incorporated within a sewer or water comprehensive plan as applicable, adopted by the applicable local government and approved by the departments of Health and Ecology as applicable. The comprehensive water and/or sewer plan shall be prepared in accordance with WAC 173-240 (Ecology) and WAC 246-271 and WAC 246-290 (Health) and include a complete description of the proposed recharge project. (*more text in footnote ⁶⁶*)
 - a. For recharge by surface percolation, the project description must clearly specify the planned intent to recharge groundwater.⁶⁷

⁶⁶ The 1997 WRR Standards state that the comprehensive plan shall be prepared in addition to the engineering report required within these standards and that the project description shall discuss the estimated beneficial uses, the expected users, and the intended water rights status (artificially stored per WAC 173-136, or abandoned and available for appropriation to others) of all of the reclaimed water to be stored in the recharged groundwater. The. This may be more appropriate text for the submittal section under Part A of this rule.

⁶⁷ 1997 WRR Standards, Section 1, Article 3, section 3(3) for surface percolation.

- b. For direct aquifer recharge projects, the creation or operation of direct recharge facilities to cause the injection of reclaimed water into a ground water basin is evidence of a planned ground water recharge project.⁶⁸

3. Minimum class and technology-based requirements

- a. Surface Percolation. Reclaimed water used as a source of supply for ground water recharge by surface percolation shall, at a minimum meet the Class A requirements unless a lesser level is approved under pilot project status and shall include an additional step to reduce nitrogen within the secondary treatment process to provide oxidized wastewater.
- b. Direct Recharge to Nonpotable Ground Water. Reclaimed water used as a source of supply for ground water recharge by direct recharge to a nonpotable ground water aquifer shall, at a minimum:
 - i. Meet the requirements for surface percolation.
 - ii. Apply AKART⁶⁹ to all wastewater prior to direct recharge.
 - iii. Meet the following water quality requirements at the sampling point for the final disinfected reclaimed water prior to direct recharge.

Five-day Biochemical Oxygen Demand (BOD5): Monthly average not exceeding 5 mg/L as measured by a 24-hour composite sample collected at least daily.

Total Suspended Solids (TSS): Monthly average not exceeding 5 mg/L as measured by a 24-hour composite sample collected at least daily.

- c. Direct Recharge to Potable Ground Water. Reclaimed water used as a source of supply for direct aquifer recharge to a potable ground water aquifer shall, at a minimum:⁷⁰
 - i. Apply AKART to all wastewater prior to direct recharge.
 - ii. Meet the reliability requirements under this chapter at all times.
 - iii. Meet the minimum treatment techniques of oxidation, coagulation, filtration, reverse osmosis and disinfection with treatment occurring in the order listed. Bypassing of any treatment units is prohibited.⁷¹
 - iv. At the sampling point immediately following the oxidation treatment process and prior to filtration, meet the following:

⁶⁸ 1997 WRR Standards, Section 3, Article 1, section 2(d) for direct recharge.

⁶⁹ From [Ch 173-221WAC](#) implements RCW 43.21A.010, 90.48.010, and 90.52.040 by setting discharge standards which represent "all known, available, and reasonable methods" of prevention, control, and treatment for domestic wastewater facilities which discharge to waters of the state. This chapter supplements WAC 173-220-130 and 40 CFR Part 133; Secondary Treatment Regulation. Wherever this chapter is more stringent than the federal regulation, the requirements of this chapter shall take precedence.

⁷⁰ 1997 WRR Standards, Section 3, Article 2, section 1 and 2.

⁷¹ 1997 Standards are unclear as to whether or not the Class A monitoring requirements for oxidized and for filtered wastewater apply to direct recharge projects. These are listed in the summary table for direct recharge projects so this draft assumes this is the intent of the standards.

Five-day Biochemical Oxygen Demand (BOD5): Monthly average shall not exceed 30 mg/L as measured by a 24-hour composite sample collected at least weekly.

Dissolved oxygen must be present as measure by a grab sample collected at least daily when wastewater characteristics are most demanding on the treatment facilities.

Total Suspended Solids (TSS): Monthly average shall not exceed 30 mg/L as measured by a 24-hour composite sample collected daily unless Ecology and DOH allow a reduced frequency.

- v. At the sampling point following filtration and prior to final disinfection, the average monthly operating turbidity shall not exceed 2 NTU and turbidity shall not exceed 5 NTU at any time.
- vi. At the sampling point for the final disinfected reclaimed water prior to direct recharge, meet the following water quality requirements.

Total Organic Carbon (TOC): Monthly average not exceeding 1.0 mg/L as measured by a 24-hour composite sample collected daily.

Total Nitrogen as N: Annual average not exceeding 10 mg/L as measured by a 24-hour composite sample or grab sample collected at least weekly.

Turbidity: The average monthly operating turbidity shall not exceed 0.1 NTU and turbidity shall not exceed 0.5 NTU at any time.

Bacterial standards: The 7-day median shall not exceed 1.0 total coliform/100mL and sample maximum shall not exceed 5 total coliform/100mL as measured by a grab sample collected daily at a time when wastewater characteristics are most demanding on the treatment facilities and disinfection procedures.

- d. Alternate Methods of Treatment. Methods of treatment other than those included in these standards and their reliability features may be accepted if:
 - i. *Equal Protection.* The applicant demonstrates to the satisfaction of the Washington Departments of Health and Ecology that the methods of treatment and reliability features will assure an equal degree of treatment, public health protection, and treatment reliability.
 - ii. *Pilot Studies.* For direct recharge into potable ground water, pilot plant or other studies are required to demonstrate that methods of treatment other than those specified in these standards are capable of reliably producing reclaimed water that meets all applicable reclaimed water quality limits specified in these standards. For direct recharge into nonpotable ground water aquifers, pilot plant or other studies may be required. Requirements for pilot studies are addressed later in this section.

4. Additional water quality based requirements

- a. Reclaimed water used for groundwater recharge shall be at all times of a quality that fully protects public health and the water quality of waters of the state.

- b. Surface Percolation. Until a new rule is adopted, reclaimed water used for surface percolation shall meet:
- i. The state drinking water criteria (ground water recharge criteria⁷²) as measured in the groundwater beneath or down gradient of the recharge project site. Reclaimed water that does not meet the criteria may be beneficially used for surface percolation where the Departments of Health and Ecology have specifically authorized such a use at a lower standard.
 - ii. If the state drinking water criteria do not contain a standard for a constituent or contaminant, the department of ecology shall establish a discharge limit consistent with the goals of Ch. 90.46 RCW.
- c. Direct Recharge to Nonpotable Ground Water. The department shall determine the additional reclaimed water quality criteria required for direct recharge to nonpotable ground water on a case-by-case basis. The determination shall consider the existing ground water quality, hydrogeology, the subsequent use of any reclaimed water withdrawn from the underground, and other factors.
- d. Direct Recharge to Potable Ground Water. For direct recharge to any ground water that serves or could serve as a source of potable ground water, the reclaimed water shall meet the following requirements in the final reclaimed water prior to recharge:
- i. The water quality criteria for primary contaminants (except nitrate), secondary contaminants, radionuclides, and carcinogens listed in Table 1 in Ch 173-200 WAC and any other maximum contaminant levels pursuant to Ch 246-290 WAC.
 - ii. For the primary contaminants, secondary contaminants, and radionuclides listed in Table 1 in Ch.173-200 WAC, the criteria shall be the most stringent concentration of the following and those listed in Table 1 in Ch173-200 WAC:
 - Maximum contaminant level goals.*
 - Maximum contaminant levels.*
 - State maximum contaminant levels published in Ch. 246-290 WAC as presently promulgated or subsequently amended or repromulgated.*
 - Amendments to these criteria* as the federal and state rules are amended.
 - iii. Samples for primary contaminants (except total coliform organisms), secondary contaminants, radionuclides, and carcinogens, shall be grab or 24-hour composite samples. Samples for primary contaminants (except total coliform organisms), secondary contaminants, radionuclides, and carcinogens shall be collected at least quarterly. Compliance with each constituent requirement (except total coliform organisms) shall be determined annually, based on the arithmetic mean of all samples collected during the previous 12 months.
 - iv. Other constituent limits deemed appropriate by the Departments of Ecology or Health.

⁷² 2009 legislation proposes using the term “state drinking water criteria” for clarity with definition.

5. Groundwater monitoring⁷³

- a. A ground water monitoring program shall be established by the permittee and approved by the Washington Departments of Ecology and Health. The monitoring program shall be based on reclaimed water quality and quantity, site-specific soil and hydrogeologic characteristics, and other considerations. For direct recharge projects, monitoring wells shall be provided to detect the influence of the direct recharge operation.
- b. For surface percolation, the monitoring wells and constituents to be sampled shall be determined on a case-by-case basis by the department.⁷⁴
- c. For direct recharge to nonpotable aquifers, the monitoring wells and constituents to be sampled shall be determined on a case-by-case basis by the department. At the discretion of the departments, withdrawal wells that extract ground water for nonpotable applications may be designated as monitoring wells.
- d. For direct recharge into potable source ground water aquifers, monitoring wells, as a minimum, shall be located at points 500 feet and 1,000 feet (plus or minus 10%) along the ground water flow path from the point of recharge to the nearest point of withdrawal of ground water used as a source of drinking water supply. The number and location of proposed monitoring wells shall be described in the engineering report submitted for approval.
 - i. Ground water from monitoring wells shall be sampled at least quarterly for TOC and primary contaminants, secondary contaminants, radionuclides, and carcinogens listed in Table 1 in chapter 173-200 WAC.⁷⁵
 - ii. The departments may specify sampling for additional constituents and establish the frequency of sampling on a case-by-case basis.

6. Pilot Study Requirements for Direct Recharge⁷⁶

- a. A pilot plant study is required prior to implementation of direct recharge into a potable ground water aquifer. Pilot studies are not required for reclaimed water recharge into nonpotable aquifers unless specified by the departments.
- b. Direct recharge of reclaimed water into a ground water aquifer shall not occur during a pilot plant study unless authorized by the departments.
- c. A study protocol shall be submitted to the departments for review and approval prior to pilot plant testing. The protocol shall, as a minimum, include a description of all equipment and facilities to be used during the study, treatment capacity of the pilot plant,

⁷³ 1997 WRR Standards , Section 3, Article 5, Section 9 except for surface percolation.

⁷⁴ Meet the requirements under B73(2) depending whether the reclaimed water, ground water monitoring, or both are the most appropriate points of compliance.

⁷⁵ 1997 WRR Standards, Section 3, Article 5, Section 9 (b)(1)(i)

⁷⁶ 1997 WRR Standards , Section 3, Article 10

operation and maintenance procedures, constituents to be monitored, monitoring frequency, sampling techniques, analytical methods, and length of study.

- d. The pilot plant study shall evaluate the efficacy of the selected treatment process train to reliably meet all reclaimed water quality requirements. The study shall evaluate the effect direct recharge of reclaimed water would have on the ground water aquifer, including the capability to meet ground water quality criteria required by the department.
- e. The reclaimed water shall be subjected to microbiological testing to evaluate the efficacy of the selected treatment process train to produce reclaimed water that does not contain measurable levels of pathogenic bacteria, parasites, and viruses.
- f. Toxicological testing of the reclaimed water may be required to evaluate health risks related to human consumption of the water.

7. Requirements for Withdrawal of Recharged Water

- a. Any withdrawal facilities constructed solely for the purpose of extracting reclaimed water from the underground shall comply with chapter 173-136 WAC and chapter 173-150 WAC.⁷⁷
- b. When recharge water is withdrawn for nonpotable purposes, it may be withdrawn at any time and at any distance from the point of recharge.
- c. For direct recharge projects, when recharge water is withdrawn as a source of drinking water supply:
 - i. Minimum retention time. The reclaimed water shall be retained underground for a minimum of 12 months prior to withdrawal.
 - ii. Minimum distance. The minimum horizontal separation distance between the point of direct recharge and withdrawal as a source of drinking water supply shall be 2,000 feet.
- d. For surface percolation projects, retention time and distance shall be determined on a case-by-case basis.⁷⁸
- e. The permittee or person(s) who maintains control over the facilities where the recharged water is withdrawn shall prevent the withdrawal of ground water within the area required to achieve the minimum retention time in the underground and minimum horizontal separation distances.

⁷⁷ 1997 WRR Standards need updating to address requirements added to RCW 90.46.120 that a permit for recovery of reclaimed water from aquifer storage and recovery shall be reviewed under the standards established under RCW [90.03.370\(2\)](#).

⁷⁸ The 1997 WRR Standards are silent on this issue. USEPA guidelines suggest a minimum of 6 months retention time in the underground to assure adequate pathogen reduction.