

# PART IV TECHNICAL STANDARDS

## Subpart A: Technology-Based Treatment Requirements

### WAC 173-219-600 Minimum requirements

Reclaimed water must meet the minimum technology-based treatment and reliability standards required for either Class A or Class B reclaimed water under this chapter before being distributed for permitted beneficial use(s).

### WAC 173-219-610 Source control and pretreatment requirements

#### (1.) Source water control.

Source water controls must prevent the presence of substances that may affect the reclaimed water quality or the ability to generate reclaimed water. Source water to reclaimed water facilities must comply with the applicable requirements for:

- (a.) Pretreatment of industrial wastewater under [40 C.F.R. Part 403, Sections 307\(b\) and 308 in the Federal Water Pollution Control Act](#), and [chapter 90.48 RCW](#).
- (b.) Discharge restrictions and prohibitions for dangerous waste under chapter [173-303 WAC](#) and [WAC 173-216-060](#).
- (c.) Restrictions and prohibitions of certain substances entering an on-site sewage system under [WAC 246-272B-06000](#), [246-272B-07050](#), and [246-272A-0270](#).

### WAC 173-219-620 Class A and B reclaimed water

#### (1.) Allowable treatment methods.

Reclaimed water must meet all applicable performance standards established in Table 1 of this section and one of the following treatment process train requirements to meet the treatment requirements for either Class A or Class B reclaimed water.

- (a.) Biological oxidation, followed by coagulation, filtration, and disinfection,
- (b.) Biological oxidation followed by membrane filtration, and disinfection,
- (c.) Combination of biological oxidation and membrane filtration via a membrane bioreactor followed by disinfection, or
  - (i.) A treatment facility may meet the biological oxidation performance standard provided the source water meets or exceeds the minimum secondary treatment requirements in [WAC 173-221-040](#).
- (d.) An alternative treatment method that demonstrates, to the satisfaction of the lead agency, that it provides an equivalent treatment and reliability.
  - (i.) Minimum performance standards for an equivalent process or treatment must assure reclaimed water quality limits are consistently achieved through proper design, operation, and maintenance of each of the treatment units in the proposed alternative treatment process.

### WAC 173-219-630 Technology based performance standards

#### (1.) Reclaimed water performance standards.

All Class A and Class B reclaimed water must meet the performance standards in Table 1 Class A and B Technology Performance Standards.

Table 1. Class A and B Technology Performance Standards

Process	Parameter	Point of Compliance	Sampling Method	Class A		Class B	
Biological Oxidation	<i>Dissolved Oxygen</i>	End of the unit process	Continuous	Must be measurably present		Must be measurably present	
	<i>BOD</i> (CBOD may be used as an alternative to BOD)	End of the unit process	24-hour composite sample	<b>Monthly Average</b>	<b>Weekly Average</b>	<b>Monthly Average</b>	<b>Weekly Average</b>
	<i>TSS</i>	End of the unit process	24-hour composite sample	30 mg/L	45 mg/L	30 mg/L	45 mg/L
	<i>pH</i>	End of treatment train	Grab sample	<b>Minimum</b>	<b>Maximum</b>	<b>Minimum</b>	<b>Maximum</b>
	<i>pH</i> (Groundwater recharge)	End of treatment train	Grab sample	6 s.u.	9 s.u.	6 s.u.	9 s.u.
Coagulation/ Filtration	<i>Turbidity</i>	End of the unit process	Continuously measured following filtration	<b>Monthly Average</b>	<b>Sample Maximum</b>		
				2 NTU	5 NTU	Not Applicable	Not Applicable
Membrane Filtration	<i>Turbidity</i>	End of the unit process	Continuously measured following filtration	0.2 NTU	0.5 NTU	Not Applicable	Not Applicable
Disinfection	<i>Total Coliform</i>	Entry point to the distribution system	Grab sample	<b>7-Day Median</b>	<b>Sample Maximum</b>	<b>7-Day Median</b>	<b>Sample Maximum</b>
	<i>Virus Removal</i>	End of the unit process	24-hour composite sample	2.2 MPN/mL or CFU/mL	23 MPN/mL or CFU/mL	23 MPN/mL or CFU/mL	240 MPN/mL or CFU/mL
Denitrification (Not applicable for beneficial uses 1-14 listed on Table 2: Use-Based Requirements)	<i>Total Nitrogen</i>	End of treatment train	24-hour composite sample	5-log virus removal/inactivation (Following filtration)			
				4-log virus removal/inactivation (If preceded by coagulation, flocculation and sedimentation unit processes, or following micro-filtration (MF) or ultra-filtration (UF) membrane processes)		Not applicable	Not Applicable
Alternative Biological Oxidation Standards	<i>BOD5</i>	After filtration	Grab sample	<b>Monthly Average</b>	<b>Weekly Average</b>		
				10 mg/L	15 mg/L	10 mg/L	15 mg/L
	<i>TSS</i>	After filtration	24-hour composite sample	10 mg/L	15 mg/L	10 mg/L	15 mg/L

## **173-219-810 Specific Use-based requirements**

The specific use based requirements for the beneficial uses allowed under this chapter and chapter [90.46 RCW](#) are as described in Table 2: Use Based Requirements for Class A, A+ and B Reclaimed Water. Other uses not listed here may be considered on a case-by case basis and approved by the lead agency.

**Table 2: Use-Based Requirements**

Beneficial Use	Minimum Reclaimed Water Class Requirements	Additional Requirements
<b>(1.) Reclaimed Water Facility Maintenance</b>	No reclaimed water permit required; use exempted by rule in section 173-219-030	Must be under the operator's direct control and be used on-site
<b>Commercial, Industrial and Institutional Uses</b>		
<b>(2.) Commercial, industrial and institutional uses with public contact</b>	Class A	
<b>(3.) Commercial, industrial and institutional uses with environmental contact</b>	Class B	<ul style="list-style-type: none"> <li>• Must minimize adverse impacts to the environment and dependent beneficial uses</li> <li>• Can be replaced with Class A water with no additional requirements</li> </ul>
<b>(4.) Commercial, industrial and institutional uses with restricted access</b>	Class B	<ul style="list-style-type: none"> <li>• Contact limited to qualified personnel</li> <li>• Little potential for health impacts</li> <li>• Can be replaced with Class A water with no additional requirements</li> </ul>
<b>(5.) Public Contact (public water features)</b>	Class A	
<b>Irrigation</b>		
<b>(6.) Landscape Irrigation with direct or indirect public access</b>	Class A	
<b>(7.) Landscape Irrigation with restricted access and contact</b>	Class B	<ul style="list-style-type: none"> <li>• Contact limited to qualified personnel</li> <li>• Can be replaced with Class A water with no additional requirements</li> </ul>
<b>(8.) Irrigation of food crops</b>	Class A	
<b>(9.) Frost protection of orchard crops</b>	Class B	<ul style="list-style-type: none"> <li>• Must not apply within 15 days of harvest</li> <li>• 50 foot setback from public access</li> <li>• Can be replaced with Class A water with no additional requirements</li> </ul>
<b>(10.) Irrigation of nonfood crops</b>	Class B	<ul style="list-style-type: none"> <li>• 50 foot setback from public access for spray or surface irrigation</li> <li>• 10 foot setback from public access for subsurface drip irrigation</li> <li>• Can be replaced with Class A water with no additional requirements</li> </ul>
<b>(11.) Irrigation of orchards or vineyards</b>	Class B	<ul style="list-style-type: none"> <li>• 50 foot setback from public access for spray or surface irrigation</li> <li>• 10 foot setback from public access for subsurface drip irrigation</li> <li>• Can be replaced with Class A water with no additional requirements</li> </ul>
<b>(12.) Irrigation of process food crops</b>	Class B	<ul style="list-style-type: none"> <li>• 50 foot setback from public access for spray or surface irrigation</li> <li>• 10 foot setback from public access for subsurface drip irrigation</li> <li>• Can be replaced with Class A water with no additional requirements</li> </ul>
<b>(13.) Irrigation of trees, fodder, fiber, or seed crops in pastures not accessed by milking animals</b>	Class B	<ul style="list-style-type: none"> <li>• Must not apply within 15 days of harvest</li> <li>• 50 foot setback from public access</li> <li>• Can be replaced with Class A water with no additional requirements</li> </ul>
<b>(14.) Irrigation of trees, fodder, fiber, or seed crops in pastures accessed by milking animals</b>	Class A	
<b>Wetland Recharge</b>		
<b>(15.) Category I wetlands</b>	No use of reclaimed water	
<b>(16.) Category II wetlands with special characteristics</b>	No use of reclaimed water	
<b>(17.) Category II wetlands without special characteristics</b>	Class A	Must not exceed on average annual basis: <ul style="list-style-type: none"> <li>• 20mg/L BOD, 20 mg/L TSS, 3mg/L total nitrogen, and 1 mg/l phosphorous</li> </ul> Annual Hydraulic load ≤ 2 cm/day

<b>(18.) Category III or IV wetlands</b>	Class A	Must not exceed on average annual basis: <ul style="list-style-type: none"> <li>•20mg/l BOD,</li> <li>•20 mg/l TSS,</li> <li>•3mg/l N total nitrogen, and</li> <li>•1 mg/l phosphorous</li> </ul> Annual Hydraulic load ≤ 3 cm/day
<b>(19.) Depressional wetlands</b>	Class A	Maximum increase of 10 cm above the natural average monthly water level
<b>(20.) Constructed treatment beneficial wetlands with public access</b>	Class A	
<b>(21.) Constructed treatment beneficial wetlands with no public access</b>	Class B	Can be replaced with Class A water with no additional requirements
<b>Surface Water Recharge</b>		
<b>(22.) Indirect recharge to surface water</b> (via groundwater or bank infiltration)	Class B	<ul style="list-style-type: none"> <li>• Criteria established on a case-by-case basis to protect existing beneficial uses (recreational, environmental or other).</li> </ul>
<b>(23.) Direct recharge into non-potable surface water</b>	Class B	<ul style="list-style-type: none"> <li>• Criteria established on a case-by-case basis to protect existing beneficial uses (recreational, environmental or other).</li> </ul>
<b>(24.) Direct recharge into surface water used as potable water source</b> (impoundments, rivers, reservoirs or lakes)	Class A	<ul style="list-style-type: none"> <li>• Criteria established on a case-by-case basis. Must meet applicable requirements of: <ul style="list-style-type: none"> <li>• Chapter 173-201A WAC (Surface Water Standards)</li> <li>• Chapter 246-290-310 WAC (Drinking Water Maximum Contaminant Levels)</li> </ul> </li> </ul>
<b>Groundwater Recharge</b>		
<b>(25.) Indirect recharge to non-potable groundwater</b> (surface percolation, subsurface percolation or vadose wells)	Class B	Must meet applicable requirements of: <ul style="list-style-type: none"> <li>• Chapter 173-200 WAC (Groundwater Standards)</li> <li>• Chapter 173-218 WAC (Underground Injection Control Program)</li> <li>• Can be replaced with Class A water with no additional requirements</li> </ul>
<b>(26.) Indirect recharge to potable groundwater</b> (surface percolation, subsurface percolation or vadose wells)	Class A	Criteria established on a case by case basis. Must meet applicable requirements of: <ul style="list-style-type: none"> <li>• Chapter 173-200 WAC (Groundwater Standards)</li> <li>• Chapter 173-218 WAC (Underground Injection Control Program)</li> <li>• Chapter 246-290-310 WAC (Drinking Water Maximum Contaminant Levels in finished reclaimed water product or at alternative point of compliance)</li> <li>• Physical setback and sanitary control zone requirements around water supply wells as outlined in Chapter 246-290-135 WAC.</li> </ul>
<b>(27.) Direct recharge to non-potable groundwater</b>	Class B	Must meet applicable requirements of: <ul style="list-style-type: none"> <li>• Chapter 173-200 WAC (Groundwater Standards)</li> <li>• Chapter 173-218 WAC (UIC Program)</li> </ul>
<b>(28.) Direct recharge to potable groundwater</b>	Class A	Criteria established on a case by case basis. Must meet applicable requirements of: <ul style="list-style-type: none"> <li>• Chapter 173-200 WAC (Groundwater Standards)</li> <li>• Chapter 173-218 WAC (UIC Program)</li> <li>• Chapter 246-290 -310 WAC: Primary MCLs in finished reclaimed water product or at alternative point of compliance</li> <li>• Physical setback and sanitary control zone requirements around water supply wells as outlined in Chapter 246-290- 135 WAC.</li> </ul>
<b>(29.) Aquifer storage and recovery (ASR)</b>	Class A	<ul style="list-style-type: none"> <li>• Reclaimed water used for ASR must meet direct recharge to potable groundwater requirements as listed above.</li> <li>• ASR projects with reclaimed water will be reviewed in accordance with the standards established under WAC 173-157, Underground Artificial Storage and Recover</li> <li>• Beneficial use of reclaimed water recovered from aquifer storage is exempt from RCW 90.03.250 and 90.44.060 water rights requirement.</li> </ul>
<b>Direct Potable Reuse</b>		
<b>(30.) Direct Potable Reuse</b>	Class A+	Criteria established on a case by case basis. All direct potable reuse projects must: <ul style="list-style-type: none"> <li>• Meet the wavier criteria for Group A public water systems as defined in Chapter 246-290-060 RCW</li> <li>• Be approved by the State Board of Health.</li> </ul>