AMENDATORY SECTION (Amending WSR 19-04-007, filed 1/23/19, effective 2/23/19)

WAC 173-201A-200 Fresh water designated uses and criteria. The following uses are designated for protection in fresh surface waters of the state. Use designations for water bodies are listed in WAC 173-201A-600 and 173-201A-602.

(1) **Aquatic life uses.** Aquatic life uses are designated based on the presence of, or the intent to provide protection for, the key uses identified in (a) of this subsection. It is required that all indigenous fish and nonfish aquatic species be protected in waters of the state in addition to the key species described below.

(a) The categories for aquatic life uses are:

(i) **Char spawning and rearing.** The key identifying characteristics of this use are spawning or early juvenile rearing by native char (bull trout and Dolly Varden), or use by other aquatic species similarly dependent on such cold water. Other common characteristic aquatic life uses for waters in this category include summer foraging and migration of native char; and spawning, rearing, and migration by other salmonid species.

(ii) **Core summer salmonid habitat.** The key identifying characteristics of this use are summer (June 15 - September 15) salmonid spawning or emergence, or adult holding; use as important summer rearing habitat by one or more salmonids; or foraging by adult and subadult native char. Other common characteristic aquatic life uses for waters in this category include spawning outside of the summer season, rearing, and migration by salmonids.

(iii) **Salmonid spawning, rearing, and migration.** The key identifying characteristic of this use is salmon or trout spawning and emergence that only occurs outside of the summer season (September 16 - June 14). Other common characteristic aquatic life uses for waters in this category include rearing and migration by salmonids.

(iv) **Salmonid rearing and migration only.** The key identifying characteristic of this use is use only for rearing or migration by salmonids (not used for spawning).

(v) **Non-anadromous interior redband trout.** For the protection of waters where the only trout species is a non-anadromous form of self-reproducing interior redband trout (*O. mykis*), and other associated aquatic life.

(vi) **Indigenous warm water species.** For the protection of waters where the dominant species under natural conditions would be temperature tolerant indigenous nonsalmonid species. Examples include dace, redside shiner, chiselmouth, sucker, and northern pikeminnow.

(b) **General criteria.** General criteria that apply to all aquatic life fresh water uses are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(i) Toxic, radioactive, and deleterious materials; and

(ii) Aesthetic values.

(c) **Aquatic life temperature criteria.** Except where noted, water temperature is measured by the 7-day average of the daily maximum temperatures (7-DADMax). Table 200 (1)(c) lists the temperature criteria for each of the aquatic life use categories.

Table 200 (1)(c)
Aquatic Life Temperature Criteria in Fresh Water

Category	Highest 7-DADMax
Char Spawning and Rearing*	12°C (53.6°F)
Core Summer Salmonid Habitat*	16°C (60.8°F)
Salmonid Spawning, Rearing, and Migration*	17.5°C (63.5°F)
Salmonid Rearing and Migration **Only**	17.5°C (63.5°F)
Non-anadromous Interior Redband Trout	18°C (64.4°F)
Indigenous Warm Water Species	20°C (68°F)

*Note: Some streams have a more stringent temperature criterion that is applied seasonally to further protect salmonid spawning and egg incubation. See (c)(B)(iv) of this subsection.

(i) When a water body's temperature is warmer than the criteria in Table 200 (1)(c) (or within 0.3°C (0.54°F) of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the 7-DADMax temperature of that water body to increase more than 0.3°C (0.54°F).

(ii) When the background condition of the water is cooler than the criteria in Table 200 (1)(c), ((~~the allowable rate of warming up to, but not exceeding, the numeric criteria from human actions is restricted as follows:~~

~~(A)~~)) incremental temperature increases resulting from individual point source activities must not, at any time, exceed 28/(T+7) as measured at the edge of a mixing zone boundary (where "T" represents the background temperature as measured at a point or points unaffected by the discharge and representative of the highest ambient water temperature in the vicinity of the discharge)((~~; and~~

~~(B) Incremental temperature increases resulting from the combined effect of all nonpoint source activities in the water body must not, at any time, exceed 2.8°C (5.04°F)~~)).

(iii) Temperatures are not to exceed the criteria at a probability frequency of more than once every ten years on average.

(iv) Spawning and incubation protection. The department has identified waterbodies, or portions thereof, which require special protection for spawning and incubation in ecology publication 06-10-038 (also available on ecology's web site at www.ecology.wa.gov). This publication indicates where and when the following criteria are to be applied to protect the reproduction of native char, salmon, and trout:

• Maximum 7-DADMax temperatures of 9°C (48.2°F) at the initiation of spawning and at fry emergence for char; and

• Maximum 7-DADMax temperatures of 13°C (55.4°F) at the initiation of spawning for salmon and at fry emergence for salmon and trout.

The two criteria above are protective of incubation as long as human actions do not significantly disrupt the normal patterns of fall cooling and spring warming that provide significantly colder temperatures over the majority of the incubation period.

(v) For lakes, human actions considered cumulatively may not increase the 7-DADMax temperature more than 0.3°C (0.54°F) above natural conditions.

(vi) Temperature measurements should be taken to represent the dominant aquatic habitat of the monitoring site. This typically means samples should:

(A) Be taken from well mixed portions of rivers and streams; and

(B) Not be taken from shallow stagnant backwater areas, within isolated thermal refuges, at the surface, or at the water's edge.

(vii) The department will incorporate the following guidelines on preventing acute lethality and barriers to migration of salmonids into determinations of compliance with the narrative requirements for use protection established in this chapter (e.g., WAC 173-201A-310(1), 173-201A-400(4), and 173-201A-410 (1)(c)). The following site-level considerations do not, however, override the temperature criteria established for waters in subsection (1)(c) of this section or WAC 173-201A-600 through 173-201A-602:

(A) Moderately acclimated (16-20°C, or 60.8-68°F) adult and juvenile salmonids will generally be protected from acute lethality by discrete human actions maintaining the 7-DADMax temperature at or below 22°C (71.6°F) and the 1-day maximum (1-DMax) temperature at or below 23°C (73.4°F).

(B) Lethality to developing fish embryos can be expected to occur at a 1-DMax temperature greater than 17.5°C (63.5°F).

(C) To protect aquatic organisms, discharge plume temperatures must be maintained such that fish could not be entrained (based on plume time of travel) for more than two seconds at temperatures above 33°C (91.4°F) to avoid creating areas that will cause near instantaneous lethality.

(D) Barriers to adult salmonid migration are assumed to exist any time the 1-DMax temperature is greater than 22°C (71.6°F) and the adjacent downstream water temperatures are 3°C (5.4°F) or more cooler.

(viii) Nothing in this chapter shall be interpreted to prohibit the establishment of effluent limitations for the control of the thermal component of any discharge in accordance with 33 U.S.C. 1326 (commonly known as section 316 of the Clean Water Act).

(d) **Aquatic life dissolved oxygen (D.O.) criteria.** The D.O. criteria are measured in milligrams per liter (mg/L). Table 200 (1)(d) lists the 1-day minimum D.O. for each of the aquatic life use categories.

Table 200 (1)(d)
Aquatic Life Dissolved Oxygen Criteria in Fresh Water

Category	Lowest 1-Day Minimum
Char Spawning and Rearing	9.5 mg/L
Core Summer Salmonid Habitat	9.5 mg/L
Salmonid Spawning, Rearing, and Migration	8.0 mg/L
Salmonid Rearing and Migration **Only**	6.5 mg/L
Non-anadromous Interior Redband Trout	8.0 mg/L
Indigenous Warm Water Species	6.5 mg/L

(i) When a water body's D.O. is lower than the criteria in Table 200 (1)(d) (or within 0.2 mg/L of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the D.O. of that water body to decrease more than 0.2 mg/L.

(ii) For lakes, human actions considered cumulatively may not decrease the dissolved oxygen concentration more than 0.2 mg/L below natural conditions.

(iii) Concentrations of D.O. are not to fall below the criteria in the table at a probability frequency of more than once every ten years on average.

(iv) D.O. measurements should be taken to represent the dominant aquatic habitat of the monitoring site. This typically means samples should:

(A) Be taken from well mixed portions of rivers and streams; and

(B) Not be taken from shallow stagnant backwater areas, within isolated thermal refuges, at the surface, or at the water's edge.

(e) **Aquatic life turbidity criteria.** Turbidity is measured in "nephelometric turbidity units" or "NTUs." Table 200 (1)(e) lists the maximum turbidity criteria for each of the aquatic life use categories.

Table 200 (1)(e)
Aquatic Life Turbidity Criteria in Fresh Water

Category	NTUs
Char Spawning and Rearing	Turbidity shall not exceed: • 5 NTU over background when the background is 50 NTU or less; or • A 10 percent increase in turbidity when the background turbidity is more than 50 NTU.
Core Summer Salmonid Habitat	Same as above.
Salmonid Spawning, Rearing, and Migration	Same as above.
Salmonid Rearing and Migration **Only**	Turbidity shall not exceed: • 10 NTU over background when the background is 50 NTU or less; or • A 20 percent increase in turbidity when the background turbidity is more than 50 NTU.
Non-anadromous Interior Redband Trout	Turbidity shall not exceed: • 5 NTU over background when the background is 50 NTU or less; or • A 10 percent increase in turbidity when the background turbidity is more than 50 NTU.
Indigenous Warm Water Species	Turbidity shall not exceed: • 10 NTU over background when the background is 50 NTU or less; or

Category	NTUs
	• A 20 percent increase in turbidity when the background turbidity is more than 50 NTU.

(i) The turbidity criteria established under WAC 173-201A-200 (1)(e) shall be modified, without specific written authorization from the department, to allow a temporary area of mixing during and immediately after necessary in-water construction activities that result in the disturbance of in-place sediments. This temporary area of mixing is subject to the constraints of WAC 173-201A-400 (4) and (6) and can occur only after the activity has received all other necessary local and state permits and approvals, and after the implementation of appropriate best management practices to avoid or minimize disturbance of in-place sediments and exceedances of the turbidity criteria. A temporary area of mixing shall be as follows:

(A) For waters up to 10 cfs flow at the time of construction, the point of compliance shall be one hundred feet downstream from the activity causing the turbidity exceedance.

(B) For waters above 10 cfs up to 100 cfs flow at the time of construction, the point of compliance shall be two hundred feet downstream of the activity causing the turbidity exceedance.

(C) For waters above 100 cfs flow at the time of construction, the point of compliance shall be three hundred feet downstream of the activity causing the turbidity exceedance.

(D) For projects working within or along lakes, ponds, wetlands, or other nonflowing waters, the point of compliance shall be at a radius of one hundred fifty feet from the activity causing the turbidity exceedance.

(f) **Aquatic life total dissolved gas (TDG) criteria.** TDG is measured in percent saturation. Table 200 (1)(f) lists the maximum TDG criteria for each of the aquatic life use categories.

Table 200 (1)(f)
Aquatic Life Total Dissolved Gas Criteria in Fresh Water

Category	Percent Saturation
Char Spawning and Rearing	Total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.
Core Summer Salmonid Habitat	Same as above.
Salmonid Spawning, Rearing, and Migration	Same as above.
Salmonid Rearing and Migration **Only**	Same as above.
Non-anadromous Interior Redband Trout	Same as above.
Indigenous Warm Water Species	Same as above.

(i) The water quality criteria established in this chapter for TDG shall not apply when the stream flow exceeds the seven-day, ten-year frequency flood.

(ii) The TDG criteria may be adjusted to aid fish passage over hydroelectric dams ((~~when consistent with a department approved gas~~

~~abatement plan. This plan must be accompanied by fisheries management and physical and biological monitoring plans~~)) spilling for anadromous juvenile fish passage as of the 2020 spill season. The elevated TDG levels are intended to allow increased fish passage without causing more harm to fish populations than caused by turbine fish passage. The following special fish passage exemptions for the Snake and Columbia rivers apply when spilling water at dams is necessary to aid fish passage:

((~~•~~)) (A) TDG must not exceed:

• An average of one hundred fifteen percent as measured in the forebays of the next downstream dams and must not exceed an average of one hundred twenty percent as measured in the tailraces of each dam (these averages are ((~~measured~~)) calculated as an average of the twelve highest ((~~consecutive~~)) hourly readings in ((~~any one~~)) a calendar day, relative to atmospheric pressure); and

• A maximum TDG ((~~one hour average~~)) saturation level of one hundred twenty-five percent ((~~must not be exceeded~~)) calculated as an average of the two highest hourly TDG measures in a calendar day during spillage for fish passage.

(B) To further aid fish passage during the spring spill season (generally from April through June), spill may be increased up to a maximum TDG saturation level of one hundred twenty-five percent calculated as an average of the two highest hourly TDG measures in a calendar day at the tailrace fixed site monitoring location. This TDG criteria may be applied in place of (f)(ii)(A) of this subsection during spring spill operations when applied in accordance with the following conditions:

(I) In addition to complying with the requirements of this chapter, the tailrace maximum TDG criteria applied at dams operated by the U.S. Army Corps of Engineers must be in accordance with legally valid Endangered Species Act consultation documents on Columbia River system operations, including operations for fish passage.

(II) Application of the tailrace maximum TDG criteria must be accompanied by a department approved biological monitoring plan designed to measure impacts of fish exposed to increased TDG conditions. Beginning in the year 2021, plans must include monitoring for nonsalmonid fish species and must continue for a minimum of five years, and thereafter as determined by the department.

(III) TDG must be reduced to allowances specified in (f)(ii)(A) of this subsection if the calculated incidence of gas bubble trauma in salmonids (with a minimum sample size of fifty fish required weekly) or nonsalmonids (with a minimum sample size of fifty fish required weekly) exceeds:

• Gas bubble trauma in nonpaired fins of fifteen percent; or

• Gas bubble trauma in nonpaired fins of five percent and gas bubbles occlude more than twenty-five percent of the surface area of the fin.

If gas bubble trauma exceeds these biological thresholds, additional monitoring must demonstrate the incidence of gas bubble trauma below biological thresholds before TDG can be adjusted to allowances specified in this subsection.

(g) **Aquatic life pH criteria.** Measurement of pH is expressed as the negative logarithm of the hydrogen ion concentration. Table 200 (1)(g) lists the pH levels for each of the aquatic life use categories.

Table 200 (1)(g)

Aquatic Life pH Criteria in Fresh Water

Use Category	pH Units
Char Spawning and Rearing	pH shall be within the range of 6.5 to 8.5, with a human-caused variation within the above range of less than 0.2 units.
Core Summer Salmonid Habitat	Same as above.
Salmonid Spawning, Rearing, and Migration	pH shall be within the range of 6.5 to 8.5 with a human-caused variation within the above range of less than 0.5 units.
Salmonid Rearing and Migration **Only**	Same as above.
Non-anadromous Interior Redband Trout	Same as above.
Indigenous Warm Water Species	Same as above.

(2) **Recreational uses.** The recreational use is primary contact recreation.

(a) **General criteria.** General criteria that apply to fresh water recreational uses are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(i) Toxic, radioactive, and deleterious materials; and

(ii) Aesthetic values.

(b) **Water contact recreation bacteria criteria.** Table 200 (2)(b) lists the bacteria criteria to protect water contact recreation in fresh waters. These criteria are based on *Escherichia coli* (*E. coli*) and fecal coliform organism levels, and expressed as colony forming units (CFU) or most probable number (MPN). The use of fecal coliform organism levels to determine compliance will expire December 31, 2020.

Table 200 (2)(b)
Primary Contact Recreation Bacteria Criteria in Fresh Water

Bacterial Indicator	Criteria
E. coli	*E. coli* organism levels within an averaging period must not exceed a geometric mean value of 100 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained within the averaging period exceeding 320 CFU or MPN per 100 mL.
Fecal coliform (expires 12/31/2020)	Fecal coliform organism levels within an averaging period must not exceed a geometric mean value of 100 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained within an averaging period exceeding 200 CFU or MPN per 100 mL.

(i) A minimum of three samples is required to calculate a geometric mean for comparison to the geometric mean criteria. Sample collection dates shall be well distributed throughout the averaging period so as not to mask noncompliance periods.

(A) Effluent bacteria samples: When averaging effluent bacteria sample values for comparison to the geometric mean criteria, or for determining permit compliance, the averaging period shall be thirty days or less.

(B) Ambient water quality samples: When averaging bacteria sample values for comparison to the geometric mean criteria, it is preferable to average by season. The averaging period of bacteria sample data shall be ninety days or less.

(ii) When determining compliance with the bacteria criteria in or around small sensitive areas, such as swimming beaches, it is recommended that multiple samples are taken throughout the area during each visit. Such multiple samples should be arithmetically averaged together (to reduce concerns with low bias when the data is later used in calculating a geometric mean) to reduce sample variability and to create a single representative data point.

(iii) As determined necessary by the department, more stringent bacteria criteria may be established for rivers and streams that cause, or significantly contribute to, the decertification or conditional certification of commercial or recreational shellfish harvest areas, even when the preassigned bacteria criteria for the river or stream are being met.

(iv) Where information suggests that sample results are due primarily to sources other than warm-blooded animals (e.g., wood waste), alternative indicator criteria may be established on a site-specific basis as described in WAC 173-201A-430.

(3) **Water supply uses.** The water supply uses are domestic, agricultural, industrial, and stock watering.

General criteria. General criteria that apply to the water supply uses are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(a) Toxic, radioactive, and deleterious materials; and

(b) Aesthetic values.

(4) **Miscellaneous uses.** The miscellaneous fresh water uses are wildlife habitat, harvesting, commerce and navigation, boating, and aesthetics.

General criteria. General criteria that apply to miscellaneous fresh water uses are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(a) Toxic, radioactive, and deleterious materials; and

(b) Aesthetic values.

AMENDATORY SECTION (Amending WSR 19-04-007, filed 1/23/19, effective 2/23/19)

WAC 173-201A-210 Marine water designated uses and criteria. The following uses are designated for protection in marine surface waters of the state of Washington. Use designations for specific water bodies are listed in WAC 173-201A-612.

(1) **Aquatic life uses.** Aquatic life uses are designated using the following general categories. It is required that all indigenous fish and nonfish aquatic species be protected in waters of the state.

(a) **The categories for aquatic life uses are:**

(i) **Extraordinary quality**. Water quality of this use class shall markedly and uniformly exceed the requirements for all uses including, but not limited to, salmonid ((~~and~~)) migration and rearing; other fish migration, rearing, and spawning; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning.

(ii) **Excellent quality**. Water quality of this use class shall meet or exceed the requirements for all uses including, but not limited to, salmonid ((~~and~~)) migration and rearing; other fish migration, rearing, and spawning; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning.

(iii) **Good quality**. Water quality of this use class shall meet or exceed the requirements for most uses including, but not limited to, salmonid migration and rearing; other fish migration, rearing, and spawning; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning.

(iv) **Fair quality**. Water quality of this use class shall meet or exceed the requirements for selected and essential uses including, but not limited to, salmonid and other fish migration.

(b) **General criteria.** General criteria that apply to aquatic life marine water uses are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(i) Toxic, radioactive, and deleterious materials; and

(ii) Aesthetic values.

(c) **Aquatic life temperature criteria.** Except where noted, temperature is measured as a 1-day maximum temperature (1-DMax). Table 210 (1)(c) lists the temperature criteria for each of the aquatic life use categories.

Table 210 (1)(c)
Aquatic Life Temperature Criteria in Marine Water

Category	Highest 1-DMax
Extraordinary quality	13°C (55.4°F)
Excellent quality	16°C (60.8°F)
Good quality	19°C (66.2°F)
Fair quality	22°C (71.6°F)

(i) When a water body's temperature is warmer than the criteria in Table 210 (1)(c) (or within 0.3°C (0.54°F) of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the 7-DADMax temperature of that water body to increase more than 0.3°C (0.54°F).

(ii) When the natural condition of the water is cooler than the criteria in Table 210 (1)(c), ((~~the allowable rate of warming up to, but not exceeding, the numeric criteria from human actions is restricted as follows:~~

~~(A)~~)) incremental temperature increases resulting from individual point source activities must not, at any time, exceed 12/(T-2) as measured at the edge of a mixing zone boundary (where "T" represents the background temperature as measured at a point or points unaffected by the discharge and representative of the highest ambient water temperature in the vicinity of the discharge)((~~; and~~

~~(B) Incremental temperature increases resulting from the combined effect of all nonpoint source activities in the water body must not, at any time, exceed 2.8°C (5.04°F)~~)).

(iii) Temperatures are not to exceed the criteria at a probability frequency of more than once every ten years on average.

(iv) Temperature measurements should be taken to represent the dominant aquatic habitat of the monitoring site. This typically means samples should not be taken from shallow stagnant backwater areas, within isolated thermal refuges, at the surface, or at the water's edge.

(v) The department will incorporate the following guidelines on preventing acute lethality and barriers to migration of salmonids into determinations of compliance with the narrative requirements for use protection established in this chapter (e.g., WAC 173-201A-310(1), 173-201A-400(4), and 173-201A-410 (1)(c)). The following site-level considerations do not, however, override the temperature criteria established for waters in subsection (1)(c) of this subsection or WAC 173-201A-612:

(A) Moderately acclimated (16-20°C, or 60.8-68°F) adult and juvenile salmonids will generally be protected from acute lethality by discrete human actions maintaining the 7-DADMax temperature at or below 22°C (71.6°F) and the 1-DMax temperature at or below 23°C (73.4°F).

(B) Lethality to developing fish embryos can be expected to occur at a 1-DMax temperature greater than 17.5°C (63.5°F).

(C) To protect aquatic organisms, discharge plume temperatures must be maintained such that fish could not be entrained (based on plume time of travel) for more than two seconds at temperatures above 33°C (91.4°F) to avoid creating areas that will cause near instantaneous lethality.

(D) Barriers to adult salmonid migration are assumed to exist any time the 1-DMax temperature is greater than 22°C (71.6°F) and the adjacent downstream water temperatures are 3°C (5.4°F) or more cooler.

(vi) Nothing in this chapter shall be interpreted to prohibit the establishment of effluent limitations for the control of the thermal component of any discharge in accordance with 33 U.S.C. 1326 (commonly known as section 316 of the Clean Water Act).

(d) **Aquatic life dissolved oxygen (D.O.) criteria.** Except where noted, D.O. concentrations are measured as a 1-day minimum in milligrams per liter. Table 210 (1)(d) lists the D.O. criteria for each of the aquatic life use categories.

Table 210 (1)(d)
Aquatic Life Dissolved Oxygen Criteria in Marine Water

Category	Lowest 1-Day Minimum
Extraordinary quality	7.0 mg/L
Excellent quality	6.0 mg/L
Good quality	5.0 mg/L
Fair quality	4.0 mg/L

(i) When a water body's D.O. is lower than the criteria in Table 210 (1)(d) (or within 0.2 mg/L of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the D.O. of that water body to decrease more than 0.2 mg/L.

(ii) Concentrations of D.O. are not to fall below the criteria in the table at a probability frequency of more than once every ten years on average.

(iii) D.O. measurements should be taken to represent the dominant aquatic habitat of the monitoring site. This typically means samples should not be taken from shallow stagnant backwater areas, within isolated thermal refuges, at the surface, or at the water's edge.

(e) **Aquatic life turbidity criteria.** Turbidity is measured in "nephelometric turbidity units" or "NTUs." Table 210 (1)(e) lists the one-day maximum turbidity allowed as a result of human actions for each of the aquatic life use categories.

Table 210 (1)(e)
Aquatic Life Turbidity Criteria in Marine Water

Category	NTUs
Extraordinary quality	Turbidity must not exceed: • 5 NTU over background when the background is 50 NTU or less; or • A 10 percent increase in turbidity when the background turbidity is more than 50 NTU.
Excellent quality	Same as above.
Good quality	Turbidity must not exceed: • 10 NTU over background when the background is 50 NTU or less; or • A 20 percent increase in turbidity when the background turbidity is more than 50 NTU.
Fair quality	Same as above.

(i) The turbidity criteria established under WAC 173-201A-210 (1)(e) shall be modified, without specific written authorization from the department, to allow a temporary area of mixing during and immediately after necessary in-water construction activities that result in the disturbance of in-place sediments. This temporary area of mixing is subject to the constraints of WAC 173-201A-400 (4) and (6) and can occur only after the activity has received all other necessary local and state permits and approvals, and after the implementation of appropriate best management practices to avoid or minimize disturbance of in-place sediments and exceedances of the turbidity criteria. For estuaries or marine waters, the point of compliance for a temporary area of mixing shall be at a radius of one hundred fifty feet from the activity causing the turbidity exceedance.

(f) **Aquatic life pH criteria.** Measurement of pH is expressed as the negative logarithm of the hydrogen ion concentration. Table 210 (1)(f) lists the pH levels allowed as a result of human actions for each of the aquatic life use categories.

Table 210 (1)(f)
Aquatic Life pH Criteria in Marine Water

Use Category	pH Units
Extraordinary quality	pH must be within the range of 7.0 to 8.5 with a human-caused variation within the above range of less than 0.2 units.
Excellent quality	pH must be within the range of 7.0 to 8.5 with a human-caused variation within the above range of less than 0.5 units.
Good quality	Same as above.
Fair quality	pH must be within the range of 6.5 to 9.0 with a human-caused variation within the above range of less than 0.5 units.

(2) **Shellfish harvesting.**

(a) General criteria. General criteria that apply to shellfish harvesting uses for marine water are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(i) Toxic, radioactive, and deleterious materials; and

(ii) Aesthetic values.

(b) **Shellfish harvesting bacteria criteria.** Fecal coliform organism levels are used to protect shellfish harvesting. Criteria are expressed as colony forming units (CFU) or most probable number (MPN). Fecal coliform must not exceed a geometric mean value of 14 CFU or MPN per 100 mL, and not have more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained for calculating the geometric mean value exceeding 43 CFU or MPN per 100 mL.

(i) Shellfish growing areas approved for unconditional harvest by the state department of health are fully supporting the shellfish harvest goals of this chapter, even when comparison with the criteria contained in this chapter suggest otherwise.

(ii) When averaging bacteria sample data for comparison to the geometric mean criteria, it is preferable to average by season and include five or more data collection events within each period. Averaging of data collected beyond a thirty-day period, or beyond a specific discharge event under investigation, is not permitted when such averaging would skew the data set so as to mask noncompliance periods. The period of averaging should not exceed twelve months, and should have sample collection dates well distributed throughout the reporting period.

(iii) When determining compliance with the bacteria criteria in or around small sensitive areas, it is recommended that multiple samples are taken throughout the area during each visit. Such multiple samples should be arithmetically averaged together (to reduce concerns with low bias when the data is later used in calculating a geometric mean) to reduce sample variability and to create a single representative data point.

(iv) As determined necessary by the department, more stringent bacteria criteria may be established for waters that cause, or significantly contribute to, the decertification or conditional certification of commercial or recreational shellfish harvest areas, even when the preassigned bacteria criteria for the water are being met.

(v) Where information suggests that sample results are due primarily to sources other than warm-blooded animals (e.g., wood waste), alternative indicator criteria may be established on a site-specific basis by the department.

(3) **Recreational uses.** The recreational use is primary contact recreation.

(a) **General criteria.** General criteria that apply to water contact uses for marine water are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(i) Toxic, radioactive, and deleterious materials; and

(ii) Aesthetic values.

(b) **Water contact recreation bacteria criteria.** Table 210 (3)(b) lists the bacteria criteria to protect water contact recreation in marine waters. These criteria are based on enterococci and fecal coliform organism levels, and expressed as colony forming units (CFU) or most probable number (MPN). The use of fecal coliform levels to determine compliance will expire December 31, 2020.

Table 210 (3)(b)
Primary Contact Recreation Bacteria Criteria in Marine Water

Bacterial Indicator	Criteria
Enterococci	Enterococci organism levels within an averaging period must not exceed a geometric mean value of 30 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample values exist) obtained within the averaging period exceeding 110 CFU or MPN per 100 mL.
Fecal coliform (expires 12/31/2020)	Fecal coliform organism levels within an averaging period must not exceed a geometric mean value of 14 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained within an averaging period exceeding 43 CFU or MPN per 100 mL.

(i) A minimum of three samples is required to calculate a geometric mean for comparison to the geometric mean criterion. Sample collection dates shall be well distributed throughout the averaging period so as not to mask noncompliance periods.

(A) Effluent bacteria samples: When averaging effluent bacteria sample values for comparison to the geometric mean criteria, or for determining permit compliance, the averaging period shall be thirty days or less.

(B) Ambient water quality samples: When averaging ambient bacteria sample values for comparison to the geometric mean criteria, it is preferable to average by season. The averaging period of bacteria sample data shall be ninety days or less.

(ii) When determining compliance with the bacteria criteria in or around small sensitive areas, such as swimming beaches, it is recommended that multiple samples are taken throughout the area during each visit. Such multiple samples should be arithmetically averaged together (to reduce concerns with low bias when the data is later used in

calculating a geometric mean) to reduce sample variability and to create a single representative data point.

(iii) As determined necessary by the department, more stringent bacteria criteria may be established for waters that cause, or significantly contribute to, the decertification or conditional certification of commercial or recreational shellfish harvest areas, even when the preassigned bacteria criteria for the water are being met.

(iv) Where information suggests that sample results are due primarily to sources other than warm-blooded animals (e.g., wood waste), alternative indicator criteria may be established on a site-specific basis as described in WAC 173-201A-430.

(4) **Miscellaneous uses.** The miscellaneous marine water uses are wildlife habitat, harvesting, commerce and navigation, boating, and aesthetics.

General criteria. General criteria that apply in miscellaneous marine water uses are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(a) Toxic, radioactive, and deleterious materials; and

(b) Aesthetic values.

AMENDATORY SECTION (Amending WSR 16-16-095, filed 8/1/16, effective 9/1/16)

WAC 173-201A-240 Toxic substances. (1) Toxic substances shall not be introduced above natural background levels in waters of the state which have the potential either singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the department.

(2) The department shall employ or require chemical testing, acute and chronic toxicity testing, and biological assessments, as appropriate, to evaluate compliance with subsection (1) of this section and to ensure that aquatic communities and the existing and designated uses of waters are being fully protected.

(3) USEPA Quality Criteria for Water, 1986, as revised, shall be used in the use and interpretation of the values listed in subsection (5) of this section.

(4) Concentrations of toxic, and other substances with toxic propensities not listed in Table 240 of this section shall be determined in consideration of USEPA Quality Criteria for Water, 1986, and as revised, and other relevant information as appropriate.

(5) The following criteria, found in Table 240, shall be applied to all surface waters of the state of Washington. Values are µg/L for all substances except ammonia and chloride which are mg/L, and asbestos which is million fibers/L. The department shall formally adopt any appropriate revised criteria as part of this chapter in accordance with the provisions established in chapter 34.05 RCW, the Administrative Procedure Act. The department shall ensure there are early opportunities for public review and comment on proposals to develop revised criteria.

(a) **Aquatic life protection.** The department may revise the criteria in Table 240 for aquatic life on a statewide or water body-specific basis as needed to protect aquatic life occurring in waters of the state and to increase the technical accuracy of the criteria being ap-

plied. The department shall formally adopt any appropriate revised criteria as part of this chapter in accordance with the provisions established in chapter 34.05 RCW, the Administrative Procedure Act.

(b) **Human health protection.** The following provisions apply to the human health criteria in Table 240. All waters shall maintain a level of water quality when entering downstream waters that provides for the attainment and maintenance of the water quality standards of those downstream waters, including the waters of another state. The human health criteria in the tables were calculated using a fish consumption rate of 175 g/day. Criteria for carcinogenic substances were calculated using a cancer risk level equal to one-in-one-million, or as otherwise specified in this chapter. The human health criteria calculations and variables include chronic durations of exposure up to seventy years. All human health criteria for metals are for total metal concentrations, unless otherwise noted. Dischargers have the obligation to reduce toxics in discharges through the use of AKART.

Table 240
Toxics Substances Criteria

Compound/Chemical	Chemical Abstracts Service (CAS)#	Category	Aquatic Life Criteria - Freshwater		Aquatic Life Criteria - Marine Water		Human Health Criteria for Consumption of:	
			Acute	Chronic	Acute	Chronic	Water & Organisms	Organisms Only
Metals:								
Antimony	7440360	Metals, cyanide, and total phenols	-	-	-	-	12	180
Arsenic	7440382	Metals, cyanide, and total phenols	360.0 (c,dd)	190.0 (d,dd)	69.0 (c,ll,dd)	36.0 (d,cc,ll,dd)	10 (A)	10 (A)
Asbestos	1332214	Toxic pollutants and hazardous substances	-	-	-	-	7,000,000 fibers/L (C)	-
Beryllium	7440417	Metals, cyanide, and total phenols	-	-	-	-	-	-
Cadmium	7440439	Metals, cyanide, and total phenols	(i,c,dd)	(j,d,dd)	42.0 (c,dd)	9.3 (d,dd)	-	-
Chromium (III)	16065831	Metals, cyanide, and total phenols	(m,c,gg)	(n,d,gg)	-	-	-	-
Chromium (VI)	18540299	Metals, cyanide, and total phenols	15.0 (c,l,ii,dd)	10.0 (d,jj,dd)	1,100.0 (c,l,ll,dd)	50.0 (d,ll,dd)	-	-
Copper	7440508	Metals, cyanide, and total phenols	(o,c,dd)	(p,d,dd)	4.8 (c,ll,dd)	3.1 (d,ll,dd)	1,300 (C)	-
Lead	7439921	Metals, cyanide, and total phenols	(q,c,dd)	(r,d,dd)	210.0 (c,ll,dd)	8.1 (d,ll,dd)	-	-
Mercury	7439976	Metals, cyanide, and total phenols	2.1 (c,kk,dd)	0.012 (d,ff,s)	1.8 (c,ll,dd)	0.025 (d,ff,s)	(G)	(G)
Methylmercury	22967926	Nonconventional	-	-	-	-	-	-
Nickel	7440020	Metals, cyanide, and total phenols	(t,c,dd)	(u,d,dd)	74.0 (c,ll,dd)	8.2 (d,ll,dd)	150	190
Selenium	7782492	Metals, cyanide, and total phenols	20.0 (c,ff)	5.0 (d,ff)	290 (c,ll,dd)	71.0 (d,x,ll,dd)	120	480
Silver	7440224	Metals, cyanide, and total phenols	(y,a,dd)	-	1.9 (a,ll,dd)	-	-	-
Thallium	7440280	Metals, cyanide, and total phenols	-	-	-	-	0.24	0.27
Zinc	7440666	Metals, cyanide, and total phenols	(aa,c,dd)	(bb,d,dd)	90.0 (c,ll,dd)	81.0 (d,ll,dd)	2,300	2,900
Other chemicals:								
1,1,1-Trichloroethane	71556	Volatile	-	-	-	-	47,000	160,000
1,1,2,2-Tetrachloroethane	79345	Volatile	-	-	-	-	0.12 (B)	0.46 (B)
1,1,2-Trichloroethane	79005	Volatile	-	-	-	-	0.44 (B)	1.8 (B)

Compound/Chemical	Chemical Abstracts Service (CAS)#	Category	Aquatic Life Criteria - Freshwater		Aquatic Life Criteria - Marine Water		Human Health Criteria for Consumption of:	
			Acute	Chronic	Acute	Chronic	Water & Organisms	Organisms Only
1,1-Dichloroethane	75343	Volatile	-	-	-	-	-	-
1,1-Dichloroethylene	75354	Volatile	-	-	-	-	1200	4100
1,2,4-Trichlorobenzene	120821	Base/neutral compounds	-	-	-	-	0.12 (B)	0.14 (B)
1,2-Dichlorobenzene	95501	Volatile	-	-	-	-	2000	2500
1,2-Dichloroethane	107062	Volatile	-	-	-	-	9.3 (B)	120 (B)
1,2-Dichloropropane	78875	Volatile	-	-	-	-	0.71 (B)	3.1 (B)
1,3-Dichloropropene	542756	Volatile	-	-	-	-	0.24 (B)	2 (B)
1,2-Diphenylhydrazine	122667	Base/neutral compounds	-	-	-	-	0.015 (B)	0.023 (B)
1,2-Trans-Dichloroethylene	156605	Volatile	-	-	-	-	600	5,800
1,3-Dichlorobenzene	541731	Volatile	-	-	-	-	13	16
1,4-Dichlorobenzene	106467	Volatile	-	-	-	-	460	580
2,3,7,8-TCDD (Dioxin)	1746016	Dioxin	-	-	-	-	0.000000064	0.000000064
2,4,6-Trichlorophenol	88062	Acid compounds	-	-	-	-	0.25 (B)	0.28 (B)
2,4-Dichlorophenol	120832	Acid compounds	-	-	-	-	25	34
2,4-Dimethylphenol	105679	Acid compounds	-	-	-	-	85	97
2,4-Dinitrophenol	51285	Acid compounds	-	-	-	-	60	610
2,4-Dinitrotoluene	121142	Base/neutral compounds	-	-	-	-	0.039 (B)	0.18 (B)
2,6-Dinitrotoluene	606202	Base/neutral compounds	-	-	-	-	-	-
2-Chloroethyvinyl Ether	110758	Volatile	-	-	-	-	-	-
2-Chloronaphthalene	91587	Base/neutral compounds	-	-	-	-	170	180
2-Chlorophenol	95578	Acid compounds	-	-	-	-	15	17
2-Methyl-4,6-Dinitrophenol (4,6-dinitro-o-cresol)	534521	Acid compounds	-	-	-	-	7.1	25
2-Nitrophenol	88755	Acid compounds	-	-	-	-	-	-
3,3'-Dichlorobenzidine	91941	Base/neutral compounds	-	-	-	-	0.0031 (B)	0.0033 (B)
3-Methyl-4-Chlorophenol (parachlorometa cresol)	59507	Acid compounds	-	-	-	-	36	36
4,4'-DDD	72548	Pesticides/PCBs	-	-	-	-	0.000036 (B)	0.000036 (B)
4,4'-DDE	72559	Pesticides/PCBs	-	-	-	-	0.000051 (B)	0.000051 (B)
4,4'-DDT	50293	Pesticides/PCBs	-	-	-	-	0.000025 (B)	0.000025 (B)
4,4'-DDT(and metabolites)		Pesticides/PCBs	1.1 (a)	0.001 (b)	0.13 (a)	0.001 (b)	-	-
4-Bromophenyl Phenyl Ether	101553	Base/neutral compounds	-	-	-	-	-	-
4-Chorophenyl Phenyl Ether	7005723	Base/neutral compounds	-	-	-	-	-	-
4-Nitrophenol	100027	Acid compounds	-	-	-	-	-	-
Acenaphthene	83329	Base/neutral compounds	-	-	-	-	110	110
Acenaphthylene	208968	Base/neutral compounds	-	-	-	-	-	-
Acrolein	107028	Volatile	-	-	-	-	1.0	1.1
Acrylonitrile	107131	Volatile	-	-	-	-	0.019 (B)	0.028 (B)
Aldrin	309002	Pesticides/PCBs	2.5 (a,e)	0.0019 (b,e)	0.71 (a,e)	0.0019 (b,e)	0.0000057 (B)	0.0000058 (B)

Compound/Chemical	Chemical Abstracts Service (CAS)#	Category	Aquatic Life Criteria - Freshwater		Aquatic Life Criteria - Marine Water		Human Health Criteria for Consumption of:	
			Acute	Chronic	Acute	Chronic	Water & Organisms	Organisms Only
alpha-BHC	319846	Pesticides/PCBs	-	-	-	-	0.0005 (B)	0.00056 (B)
alpha-Endosulfan	959988	Pesticides/PCBs	-	-	-	-	9.7	10
Anthracene	120127	Base/neutral compounds	-	-	-	-	3,100	4,600
Benzene	71432	Volatile	-	-	-	-	0.44 (B)	1.6 (B)
Benzidine	92875	Base/neutral compounds	-	-	-	-	0.00002 (B)	0.000023 (B)
Benzo(a) Anthracene	56553	Base/neutral compounds	-	-	-	-	0.014 (B)	0.021 (B)
Benzo(a) Pyrene	50328	Base/neutral compounds	-	-	-	-	0.0014 (B)	0.0021 (B)
Benzo(b) Fluoranthene	205992	Base/neutral compounds	-	-	-	-	0.014 (B)	0.021 (B)
Benzo(ghi) Perylene	191242	Base/neutral compounds	-	-	-	-	-	-
Benzo(k) Fluoranthene	207089	Base/neutral compounds	-	-	-	-	0.014 (B)	0.21 (B)
beta-BHC	319857	Pesticides/PCBs	-	-	-	-	0.0018 (B)	0.002 (B)
beta-Endosulfan	33213659	Pesticides/PCBs	-	-	-	-	9.7	10
Bis(2-Chloroethoxy) Methane	111911	Base/neutral compounds	-	-	-	-	-	-
Bis(2-Chloroethyl) Ether	111444	Base/neutral compounds	-	-	-	-	0.02 (B)	0.06 (B)
Bis(2-Chloroisopropyl) Ether	39638329	Base/neutral compounds	-	-	-	-	-	-
Bis(2-Ethylhexyl) Phthalate	117817	Base/neutral compounds	-	-	-	-	0.23 (B)	0.25 (B)
Bromoform	75252	Volatile	-	-	-	-	5.8 (B)	27 (B)
Butylbenzyl Phthalate	85687	Base/neutral compounds	-	-	-	-	0.56 (B)	0.58 (B)
Carbon Tetrachloride	56235	Volatile	-	-	-	-	0.2 (B)	0.35 (B)
Chlordane	57749	Pesticides/PCBs	2.4 (a)	0.0043 (b)	0.09 (a)	0.004 (b)	0.000093 (B)	0.000093 (B)
Chlorobenzene	108907	Volatile	-	-	-	-	380	890
Chlorodibromomethane	124481	Volatile	-	-	-	-	0.65 (B)	3 (B)
Chloroethane	75003	Volatile	-	-	-	-	-	-
Chloroform	67663	Volatile	-	-	-	-	260	1200
Chrysene	218019	Base/neutral compounds	-	-	-	-	1.4 (B)	2.1 (B)
Cyanide	57125	Metals, cyanide, and total phenols	22.0 (c,ee)	5.2 (d,ee)	1.0 (c,mm,ee)	(d,mm,ee)	19 (D)	270 (D)
delta-BHC	319868	Pesticides/PCBs	-	-	-	-	-	-
Dibenzo(a,h) Anthracene	53703	Base/neutral compounds	-	-	-	-	0.0014 (B)	0.0021 (B)
Dichlorobromomethane	75274	Volatile	-	-	-	-	0.77 (B)	3.6 (B)
Dieldrin	60571	Pesticides/PCBs	2.5 (a,e)	0.0019 (b,e)	0.71 (a,e)	0.0019 (b,e)	0.0000061 (B)	0.0000061 (B)
Diethyl Phthalate	84662	Base/neutral compounds	-	-	-	-	4,200	5,000
Dimethyl Phthalate	131113	Base/neutral compounds	-	-	-	-	92,000	130,000
Di-n-Butyl Phthalate	84742	Base/neutral compounds	-	-	-	-	450	510

Compound/Chemical	Chemical Abstracts Service (CAS)#	Category	Aquatic Life Criteria - Freshwater		Aquatic Life Criteria - Marine Water		Human Health Criteria for Consumption of:	
			Acute	Chronic	Acute	Chronic	Water & Organisms	Organisms Only
Di-n-Octyl Phthalate	117840	Base/neutral compounds	-	-	-	-	-	-
Endosulfan		Pesticides/PCBs	0.22 (a)	0.056 (b)	0.034 (a)	0.0087 (b)	-	-
Endosulfan Sulfate	1031078	Pesticides/PCBs	-	-	-	-	9.7	10
Endrin	72208	Pesticides/PCBs	0.18 (a)	0.0023 (b)	0.037 (a)	0.0023 (b)	0.034	0.035
Endrin Aldehyde	7421934	Pesticides/PCBs	-	-	-	-	0.034	0.035
Ethylbenzene	100414	Volatile	-	-	-	-	200	270
Fluoranthene	206440	Base/neutral compounds	-	-	-	-	16	16
Fluorene	86737	Base/neutral compounds	-	-	-	-	420	610
Hexachlorocyclohexane (gamma-BHC; Lindane)	58899	Pesticides/PCBs	2.0 (a)	0.08 (b)	0.16 (a)	-	15	17
Heptachlor	76448	Pesticides/PCBs	0.52 (a)	0.0038 (b)	0.053 (a)	0.0036 (b)	0.0000099 (B)	0.00001 (B)
Heptachlor Epoxide	1024573	Pesticides/PCBs	-	-	-	-	0.0000074 (B)	0.0000074 (B)
Hexachlorobenzene	118741	Base/neutral compounds	-	-	-	-	0.000051 (B)	0.000052 (B)
Hexachlorobutadiene	87683	Base/neutral compounds	-	-	-	-	0.69 (B)	4.1 (B)
Hexachlorocyclopentadiene	77474	Base/neutral compounds	-	-	-	-	150	630
Hexachloroethane	67721	Base/neutral compounds	-	-	-	-	0.11 (B)	0.13 (B)
Indeno(1,2,3-cd) Pyrene	193395	Base/neutral compounds	-	-	-	-	0.014 (B)	0.021 (B)
Isophorone	78591	Base/neutral compounds	-	-	-	-	27 (B)	110 (B)
Methyl Bromide	74839	Volatile	-	-	-	-	520	2,400
Methyl Chloride	74873	Volatile	-	-	-	-	-	-
Methylene Chloride	75092	Volatile	-	-	-	-	16 (B)	250 (B)
Napthalene	91203	Base/neutral compounds	-	-	-	-	-	-
Nitrobenzene	98953	Base/neutral compounds	-	-	-	-	55	320
N-Nitrosodimethylamine	62759	Base/neutral compounds	-	-	-	-	0.00065 (B)	0.34 (B)
N-Nitrosodi-n-Propylamine	621647	Base/neutral compounds	-	-	-	-	0.0044 (B)	0.058 (B)
N-Nitrosodiphenylamine	86306	Base/neutral compounds	-	-	-	-	0.62 (B)	0.69 (B)
Pentachlorophenol (PCP)	87865	Acid compounds	(w,c)	(v,d)	13.0 (c)	7.9 (d)	0.046 (B)	0.1 (B)
Phenanthrene	85018	Base/neutral compounds	-	-	-	-	-	-
Phenol	108952	Acid compounds	-	-	-	-	18,000	200,000
Polychlorinated Biphenyls (PCBs)		Pesticides/PCBs	2.0 (b)	0.014 (b)	10.0 (b)	0.030 (b)	0.00017 (E)	0.00017 (E)
Pyrene	129000	Base/neutral compounds	-	-	-	-	310	460
Tetrachloroethylene	127184	Volatile	-	-	-	-	4.9 (B)	7.1 (B)
Toluene	108883	Volatile	-	-	-	-	180	410
Toxaphene	8001352	Pesticides/PCBs	0.73 (c,z)	0.0002 (d)	0.21 (c,z)	0.0002 (d)	0.000032 (B)	0.000032 (B)
Trichloroethylene	79016	Volatile	-	-	-	-	0.38 (B)	0.86 (B)

Compound/Chemical	Chemical Abstracts Service (CAS)#	Category	Aquatic Life Criteria - Freshwater		Aquatic Life Criteria - Marine Water		Human Health Criteria for Consumption of:	
			Acute	Chronic	Acute	Chronic	Water & Organisms	Organisms Only
Vinyl Chloride	75014	Volatile	-	-	-	-	0.02 (B, F)	0.26 (B, F)
Ammonia (hh)		Nonconventional	(f,c)	(g,d)	0.233 (h,c)	0.035 (h,d)	-	-
Chloride (dissolved) (k)		Nonconventional	860.0 (h,c)	230.0 (h,d)	-	-	-	-
Chlorine (total residual)		Nonconventional	19.0 (c)	11.0 (d)	13.0 (c)	7.5 (d)	-	-
Chlorpyrifos		Toxic pollutants and hazardous substances	0.083 (c)	0.041 (d)	0.011 (c)	0.0056 (d)	-	-
Parathion		Toxic pollutants and hazardous substances	0.065 (c)	0.013 (d)	-	-	-	-

Footnotes for aquatic life criteria in Table 240:

a. An instantaneous concentration not to be exceeded at any time.
b. A 24-hour average not to be exceeded.
c. A 1-hour average concentration not to be exceeded more than once every three years on the average.
d. A 4-day average concentration not to be exceeded more than once every three years on the average.
e. Aldrin is metabolically converted to Dieldrin. Therefore, the sum of the Aldrin and Dieldrin concentrations are compared with the Dieldrin criteria.
f. Shall not exceed the numerical value in total ammonia nitrogen (mg N/L) given by:

For salmonids present: $\frac{0.275}{1 + 10^{7.204-pH}} + \frac{39.0}{1 + 10^{pH-7.204}}$

For salmonids absent: $\frac{0.411}{1 + 10^{7.204-pH}} + \frac{58.4}{1 + 10^{pH-7.204}}$

g. Shall not exceed the numerical concentration calculated as follows:
Unionized ammonia concentration for waters where salmonid habitat is an existing or designated use:

$$0.80 \div (FT)(FPH)(RATIO)$$

where:
RATIO = $13.5; 7.7 \leq pH \leq 9$
RATIO = $(20.25 \times 10^{(7.7-pH)}) \div (1 + 10^{(7.4-pH)}); 6.5 \leq pH \leq 7.7$
FT = $1.4; 15 \leq T \leq 30$
FT = $10^{[0.03(20-T)]}; 0 \leq T \leq 15$
FPH = $1; 8 \leq pH \leq 9$
FPH = $(1 + 10^{(7.4-pH)}) \div 1.25; 6.5 \leq pH \leq 8.0$

Total ammonia concentrations for waters where salmonid habitat is not an existing or designated use and other fish early life stages are absent:

$$Chronic\ Criterion = \left(\frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}}\right) \times \left(1.45 \times 10^{0.028(25-A)}\right)$$

where: A = the greater of either T (temperature in degrees Celsius) or 7.

Applied as a thirty-day average concentration of total ammonia nitrogen (in mg N/L) not to be exceeded more than once every three years on average. The highest four-day average within the thirty-day period should not exceed 2.5 times the chronic criterion.

Total ammonia concentration for waters where salmonid habitat is not an existing or designated use and other fish early life stages are present:

$$Chronic\ Criterion = \left(\frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}}\right) \times B$$

where: B = the lower of either 2.85, or $1.45 \times 10^{0.028 \times (25-T)}$. T = temperature in degrees Celsius.

Applied as a thirty-day average concentration of total ammonia nitrogen (in mg N/L) not to be exceeded more than once every three years on the average. The highest four-day average within the thirty-day period should not exceed 2.5 times the chronic criterion.

h. Measured in milligrams per liter rather than micrograms per liter.
i. ≤ (0.944)(e(1.128[ln(hardness)]-3.828)) at hardness = 100. Conversion factor (CF) of 0.944 is hardness dependent. CF is calculated for other hardnesses as follows: CF = 1.136672 - [(ln hardness)(0.041838)].

j. ≤ (0.909)(e(0.7852[ln(hardness)]-3.490)) at hardness = 100. Conversions factor (CF) of 0.909 is hardness dependent. CF is calculated for other hardnesses as follows: CF = 1.101672 - [(ln hardness)(0.041838)].
k. Criterion based on dissolved chloride in association with sodium. This criterion probably will not be adequately protective when the chloride is associated with potassium, calcium, or magnesium, rather than sodium.
l. Salinity dependent effects. At low salinity the 1-hour average may not be sufficiently protective.
m. ≤ $(0.316)(e^{(0.8190[\ ln(hardness)]\ +\ 3.688)})$
n. ≤ $(0.860)(e^{(0.8190[\ ln(hardness)]\ +\ 1.561)})$
o. ≤ $(0.960)(e^{(0.9422[\ ln(hardness)]\ -\ 1.464)})$
p. ≤ $(0.960)(e^{(0.8545[\ ln(hardness)]\ -\ 1.465)})$
q. ≤ $(0.791)(e^{(1.273[\ ln(hardness)]\ -\ 1.460)})$ at hardness = 100. Conversion factor (CF) of 0.791 is hardness dependent. CF is calculated for other hardnesses as follows: CF = 1.46203 - [(ln hardness)(0.145712)].
r. ≤ $(0.791)(e^{(1.273[\ ln(hardness)]\ -\ 4.705)})$ at hardness = 100. Conversion factor (CF) of 0.791 is hardness dependent. CF is calculated for other hardnesses as follows: CF = 1.46203 - [(ln hardness)(0.145712)].
s. If the four-day average chronic concentration is exceeded more than once in a three-year period, the edible portion of the consumed species should be analyzed. Said edible tissue concentrations shall not be allowed to exceed 1.0 mg/kg of methylmercury.
t. ≤ $(0.998)(e^{(0.8460[\ ln(hardness)]\ +\ 3.3612)})$
u. ≤ $(0.997)(e^{(0.8460[\ ln(hardness)]\ +\ 1.1645)})$
v. ≤ $e^{[1.005(pH)\ -\ 5.290]}$
w. ≤ $e^{[1.005(pH)\ -\ 4.830]}$
x. The status of the fish community should be monitored whenever the concentration of selenium exceeds 5.0 ug/ l in salt water.
y. ≤ $(0.85)(e^{(1.72[ln(hardness)]\ -\ 6.52)})$
z. Channel Catfish may be more acutely sensitive.
aa. ≤ $(0.978)(e^{(0.8473[ln(hardness)]\ +\ 0.8604)})$
bb. ≤ $(0.986)(e^{(0.8473[ln(hardness)]\ +\ 0.7614)})$
cc. Nonlethal effects (growth, C-14 uptake, and chlorophyll production) to diatoms (*Thalassiosira aestivalis* and *Skeletonema costatum*) which are common to Washington's waters have been noted at levels below the established criteria. The importance of these effects to the diatom populations and the aquatic system is sufficiently in question to persuade the state to adopt the USEPA National Criteria value (36 µg/L) as the state threshold criteria, however, wherever practical the ambient concentrations should not be allowed to exceed a chronic marine concentration of 21 µg/L.
dd. These ambient criteria in the table are for the dissolved fraction. The cyanide criteria are based on the weak acid dissociable method. The metals criteria may not be used to calculate total recoverable effluent limits unless the seasonal partitioning of the dissolved to total metals in the ambient water are known. When this information is absent, these metals criteria shall be applied as total recoverable values, determined by back-calculation, using the conversion factors incorporated in the criterion equations. Metals criteria may be adjusted on a site-specific basis when data are made available to the department clearly demonstrating the effective use of the water effects ratio approach established by USEPA, as generally guided by the procedures in USEPA Water Quality Standards Handbook, December 1983, as supplemented or replaced by USEPA or ecology. The adjusted site specific criteria are not in effect until they have been incorporated into this chapter and approved by EPA. Information which is used to develop effluent limits based on applying metals partitioning studies or the water effects ratio approach shall be identified in the permit fact sheet developed pursuant to WAC 173-220-060 or 173-226-110, as appropriate, and shall be made available for the public comment period required pursuant to WAC 173-220-050 or 173-226-130(3), as appropriate. Ecology has developed supplemental guidance for conducting water effect ratio studies.
ee. The criteria for cyanide is based on the weak acid dissociable method in the 19th Ed. Standard Methods for the Examination of Water and Wastewater, 4500-CN I, and as revised (see footnote dd, above).
ff. These criteria are based on the total-recoverable fraction of the metal.
gg. Where methods to measure trivalent chromium are unavailable, these criteria are to be represented by total-recoverable chromium.
hh. The listed fresh water criteria are based on un-ionized or total ammonia concentrations, while those for marine water are based on un-ionized ammonia concentrations. Tables for the conversion of total ammonia to un-ionized ammonia for freshwater can be found in the USEPA's Quality Criteria for Water, 1986. Criteria concentrations based on total ammonia for marine water can be found in USEPA Ambient Water Quality Criteria for Ammonia (Saltwater)-1989, EPA440/5-88-004, April 1989.
ii. The conversion factor used to calculate the dissolved metal concentration was 0.982.
jj. The conversion factor used to calculate the dissolved metal concentration was 0.962.
kk. The conversion factor used to calculate the dissolved metal concentration was 0.85.
ll. Marine conversion factors (CF) which were used for calculating dissolved metals concentrations are given below. Conversion factors are applicable to both acute and chronic criteria for all metals except mercury. The CF for mercury was applied to the acute criterion only and is not applicable to the chronic criterion. Conversion factors are already incorporated into the criteria in the table. Dissolved criterion = criterion x CF

Metal	CF
Arsenic	1.000
Cadmium	0.994
Chromium (VI)	0.993
Copper	0.83
Lead	0.951
Mercury	0.85
Nickel	0.990
Selenium	0.998
Silver	0.85
Zinc	0.946

mm. The cyanide criteria are: 2.8µg/l chronic and 9.1µg/l acute and are applicable only to waters which are east of a line from Point Roberts to Lawrence Point, to Green Point to Deception Pass; and south from Deception Pass and of a line from Partridge Point to Point Wilson. The chronic criterion applicable to the remainder of the marine waters is l µg/L.

Footnotes for human health criteria in Table 240:

A. This criterion for total arsenic is the maximum contaminant level (MCL) developed under the Safe Drinking Water Act. The MCL for total arsenic is applied to surface waters where consumption of organisms-only and where consumption of water + organisms reflect the designated uses. When the department determines that a direct or indirect industrial discharge to surface waters designated for domestic water supply may be adding arsenic to its wastewater, the department will require the discharger to develop and implement a pollution prevention plan to reduce arsenic through the use of AKART. Industrial wastewater discharges to a privately or publicly owned wastewater treatment facility are considered indirect discharges.
B. This criterion was calculated based on an additional lifetime cancer risk of one-in-one-million (1×10^{-6} risk level).
C. This criterion is based on a regulatory level developed under the Safe Drinking Water Act.

D. This recommended water quality criterion is expressed as total cyanide, even though the integrated risk information system RfD used to derive the criterion is based on free cyanide. The multiple forms of cyanide that are present in ambient water have significant differences in toxicity due to their differing abilities to liberate the CN-moiety. Some complex cyanides require even more extreme conditions than refluxing with sulfuric acid to liberate the CN-moiety. Thus, these complex cyanides are expected to have little or no "bioavailability" to humans. If a substantial fraction of the cyanide present in a water body is present in a complexed form (e.g., Fe4[Fe(CN)6]3), this criterion may be overly conservative.

E. This criterion applies to total PCBs, (e.g., the sum of all congener or all isomer or homolog or Aroclor analyses). The PCBs criteria were calculated using a chemical-specific risk level of 4×10^{-5}. Because that calculation resulted in a higher (less protective) concentration than the current criterion concentration (40 C.F.R. 131.36) the state made a chemical-specific decision to stay at the current criterion concentration.

F. This criterion was derived using the cancer slope factor of 1.4 (linearized multistage model with a twofold increase to 1.4 per mg/kg-day to account for continuous lifetime exposure from birth).

G. The human health criteria for mercury are contained in 40 C.F.R. 131.36.

AMENDATORY SECTION (Amending WSR 19-04-007, filed 1/23/19, effective 2/23/19)

WAC 173-201A-610 Use designations—Marine waters. All marine surface waters have been assigned specific uses for protection under Table 612.

Table 610 (Key to Table 612)

Abbreviation	General Description
Aquatic Life Uses:	(see WAC 173-201A-210(1))
Extraordinary Quality	Extraordinary quality. Water quality of this use class shall markedly and uniformly exceed the requirements for all uses including, but not limited to, salmonid ((~~and~~)) migration and rearing; other fish migration, rearing, and spawning; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning.
Excellent Quality	Excellent quality. Water quality of this use class shall meet or exceed the requirements for all uses including, but not limited to, salmonid ((~~and~~)) migration and rearing; other fish migration, rearing, and spawning; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning.

Abbreviation	General Description
Good Quality	Good quality. Water quality of this use class shall meet or exceed the requirements for most uses including, but not limited to, salmonid migration and rearing; other fish migration, rearing, and spawning; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning.
Fair Quality	Fair quality. Water quality of this use class shall meet or exceed the requirements for selected and essential uses including, but not limited to, salmonid and other fish migration.
Shellfish Harvesting:	(see WAC 173-201A-210(2))
Shellfish Harvest	Shellfish (clam, oyster, and mussel) harvesting.
Recreational Uses:	(see WAC 173-201A-210(3))
Primary Contact	Primary contact recreation.
Miscellaneous Uses:	(see WAC 173-201A-210(4))
Wildlife Habitat	Wildlife habitat.
Harvesting	Salmonid and other fish harvesting, and crustacean and other shellfish (crabs, shrimp, scallops, etc.) harvesting.
Com./Navig.	Commerce and navigation.
Boating	Boating.
Aesthetics	Aesthetic values.