

## Water Quality Standards Applicable to waters within the Kalispel Indian Reservation

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## **Note on EPA Approval of this Document**

By letter dated June 24, 2004 from the EPA Region X Director of Office of Water, Michael F. Gearheard, to the Kalispel Tribal Chairman, Glen Nenema, EPA announced its approval of the Tribe's water quality standards adopted on March 18, 2003. EPA's approval was qualified as to those items for which EPA will be conducting an ESA consultation. EPA concluded that its approval was unnecessary for certain provisions which EPA does not consider subject to §303(c) of the CWA.

### **Endangered Species Act Consultation**

EPA's Basis for Action notes that completion of Endangered Species Act Section 7(a)(2) consultation may affect the following sections:

~~Section 2, Waters and Territory Covered~~

~~Section 3, Applicability, including Critical Low Flows~~

~~Section 4, Definitions~~

~~Section 5, Mixing Zones~~

~~Section 9, Antidegradation Policy, including natural background implementation provision~~

~~Section 10, Toxic Substances~~

~~Section 11, Beneficial Uses~~

~~Section 12, General Water Use and Criteria~~

~~Section 13, Special Resource Water Class~~

### **Sections Outside Clean Water Act Section 303(c)**

EPA's Basis for Action notes that the following sections fall outside the provisions of Section 303(c) of the Clean Water Act but are nonetheless pertinent to administration and enforcement of the standards themselves:

~~Section 1, Background~~

~~Section 3, Applicability(b)—Analytical Methods~~

~~Section 6, Water Quality Certification Section 7,~~

~~Nonpoint Source Pollution Section 8, Implementation and Enforcement~~

~~Sections 12 and 13, Prohibition of certain discharges without control or treatment~~

## 1) Background

The Kalispel Tribe of Indians has a primary interest in the protection, control, conservation, and utilization of the water resources of the Kalispel Indian Reservation. The Tribe has been authorized by EPA since 2002 to implement Sections 303(c) and 401 of the Clean Water Act in the same manner as a State. Kalispel water quality standards have been approved by EPA and implemented by the Tribe beginning in 2004.

It is the purpose of these Water Quality Standards to prescribe minimum water quality requirements for the surface waters located within the exterior boundaries of the Kalispel Indian Reservation to protect public health or welfare, enhance the quality of water and serve the purposes of the federal Clean Water Act, consistent with the provisions of 40 CFR 130.3 and 40 CFR 131. The water use and water quality criteria are established in conformance with present and future uses of the surface water of the Kalispel Indian Reservation and in consideration of water quality potential and limitations of the same.

## 2) Waters and Territory Covered

The provisions of these water quality standards shall apply to all surface waters of the Kalispel Indian Reservation, provided that nothing in these standards shall preclude the Tribe from applying appropriate standards and measures to protect and enhance Reservation groundwater to the extent permitted by federal and tribal law.

## 3) Applicability

The Tribe may apply these water quality standards to protect the integrity of all surface waters within the boundaries of the Reservation. As such, the Tribe may apply these water quality standards to any activity including, but not limited to, the construction or operation of municipal, agricultural, residential, industrial or commercial facilities, which may result in any discharge (including discharges from nonpoint sources) into any of the surface waters on the Reservation.

Changes and revisions to this document constitute changes to the water quality standards regulations and shall be formally adopted by resolution following public review and comment and EPA review and approval.

### **3(a) National Pollutant Discharge Elimination Permitting and Critical Low Flows**

The water quality standards in this section shall be used by the Regional Administrator for establishing any water quality based National Pollutant Discharge Elimination System Permit (NPDES) for discharges on the Kalispel Indian Reservation arising from a point source.

### **3(b) Analytical Methods**

The analytical testing methods used to measure or otherwise evaluate compliance with water quality standards shall, to the extent practicable, be in accordance with the "Guidelines Establishing Test Procedures for the Analysis of Pollutants" (40 CFR 136).

When a testing method is not available for a particular substance, [or the method does not provide the lowest levels of measure](#), the most recent edition of the “Standard Methods for the Examination of Water and Wastewater” (American Public Health Association, American Water Works Association, and Water Pollution Control Federation), [or other appropriate methods shall be used](#). ~~and other or superseding methods published and/or approved by EPA shall be used., or shall be used.~~

All numeric criteria contained in this section apply at all in-stream flow rates greater than or equal to the critical low flow rates as described in Table 1. Narrative criteria apply regardless of flow. Critical low flows are applied to mixing zones granted for point- source discharges.

**Table 1. Critical Low Flows**

<b>Critical Low Flows for Aquatic Life*</b>	
Acute Criteria (CMC)	1Q10
Chronic Criteria (CCC)	7Q10
<a href="#">Chronic Criteria (CCC) for Ammonia</a>	<a href="#">30B3 or 30Q10</a>
<b>Critical Low Flows for Human Health*</b>	
Non-Carcinogens	30Q5
Carcinogens	Harmonic Mean Flow

[\\*If seasonally variable critical flows are used for deriving seasonal permit limits, a return frequency for each seasonal critical flow will be adjusted to provide a combined annual probability of exceeding water quality criteria of 10% or less.](#)

Critical low flows are defined as:

1Q10: the lowest one day flow with an average recurrence frequency of once in ten years determined hydrologically.

7Q10: the lowest average seven consecutive day low flow with an average recurrence frequency of once in ten years determined hydrologically.

30Q5: the lowest average 30 consecutive day low flow with an average recurrence frequency of once in five years determined hydrologically.

[30B3: is a biologically based low flow and indicates an allowable exceedance for 30 consecutive days once every three years](#)

[30Q10: the lowest average 30 consecutive day low flow with an average recurrence frequency of once in ten years determined hydrologically.](#)

Harmonic Mean Flow: the long term mean flow value calculated by dividing the number of daily flows by the sum of the reciprocals of those daily flows.

#### 4) Definitions

- Acute Toxicity: A lethal effect or serious injury in response to a stimulus observed in 96 hours or less.
- Anthropogenic: That which results from human activity.
- Appropriate Reference Site or Region: A site on the same water body, or within the same basin or ecoregion that has similar conditions, and represents the biological potential based on best attainable condition, habitat structure, water quality, and biological parameters for a specific ecoregion, water body, or water body class.

- Aquatic Species: Any plant or animal that lives at least part of its life in water.
- Biological Assessment: An evaluation of the biological condition of a water body using surveys of aquatic community structure and function and other direct measurements of resident biota in surface waters.
- Ceremonial and Cultural Water Use: Activities involving traditional Native American spiritual practices which involve, among other things, consuming water, primary (direct) and secondary (indirect) contact with water, use of a water body to fulfill cultural, traditional, spiritual or religious uses; use of water for instream flow, habitat for fisheries and wildlife, preservation of habitat for berries, roots and other vegetation significant to the ~~Tribe, people of the Reservation.~~
- Cold Water Aquatic Life: Aquatic communities, including but limited to Salmonidae and cold-water invertebrates that are physiologically restricted to cold water ~~and~~, composed of one or more species sensitive to reduced oxygen levels. ~~Including, but not limited to, Salmonidae and cold-water invertebrates.~~
- Council: Kalispel Tribal Council or Business Committee
- Department: Kalispel Natural Resources Department
- Designated Beneficial Use: The purpose or benefit to be derived from a water body, as designated by the Tribe, whether or not they are currently attained.
- DO: dissolved oxygen
- Ecological Integrity: The sum of chemical, physical, and biological factors capable of supporting and maintaining a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat of the region.
- EPA: Environmental Protection Agency
- EPA Regional Administrator: Administrator of EPA's Region X
- Existing Uses: Those uses actually attained in a water body on or after November 25, 1975, whether or not they are included in the water quality standards.
- Fishing: The collection of fish, shellfish, or other aquatic organisms for consumption or other uses.
- Geometric Mean: The *n*th root of a product of *n* factors.
- Industrial Waste: Any liquid, gaseous, radioactive, or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade, or business or from the development or recovery of any natural resources.
- Low Flow: Flows in a stream resulting primarily from groundwater discharge or base flows during the driest part of the year.
- Measurable Temperature Increase: An increase in water body temperature of greater than 0.25 degrees C.
- mg/L: milligrams per liter.
- µg/L: micrograms per liter.
- Minimum Dissolved Oxygen: Minimum recorded concentration on a seasonal or diurnal basis.
- Mixing Zone or Dilution Zone: A limited area or volume of water where initial dilution of a discharge takes place; and where numeric water quality criteria can be exceeded but acutely toxic conditions are prevented from occurring.
- Natural Background: Background conditions due only to non-anthropogenic sources. Water quality present prior to or without human-caused influences. A neighboring or similar system may be used as a reference.

- Nonpoint Source: Diffuse or unconfined sources of pollution by which waste can enter or be transported in waters of the Reservation.
- Numeric Temperature Criteria: Measured seven-day moving average of daily maximum temperatures. When data are insufficient to establish a seven-day moving average of maximum temperatures, the numeric criteria shall be applied as an instantaneous maximum.
- Outstanding Resource Water: Those waters designated by the Tribe where existing high quality waters constitute outstanding Reservation resources based on extraordinary water quality or ecological values.
- pH: The negative logarithm of the hydrogen ion concentration.
- Primary Contact Recreation: Activities in which a person would have direct submergence, including but not limited to skin diving, swimming, and water skiing.
- Point Source: A stationary location or fixed facility (e.g. a pipe or ditch) from which pollution or pollutants are discharged to waters of the Reservation.
- Pollutant: Materials or substances that settle to form objectionable deposits; float as debris, scum, oil, or other matter to form nuisances; produce objectionable color, odor, taste, or turbidity; ~~injure or are toxic to produce~~ or produce adverse physiological responses in humans, animals, plants; or produce undesirable or nuisance aquatic life.
- Pollution: Contamination or other alteration of the physical, chemical, or biological properties of any Waters of the Reservation, including change in temperature, taste, color, turbidity, silt, or odor of the waters, or ~~such~~ radioactive or any other substance which, when introduced into any Waters of the Reservation ~~which~~ either by itself or in connection with any other substance present, will or can reasonably be expected to create a threat to public health, safety, or welfare, or to domestic, commercial, cultural, industrial, agricultural, recreational, cultural or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life, or the habitat thereof.
- Reach: A specifically identified section of a stream or water body.
- Reservation: All land within the limits of the Kalispel Indian Reservation, established on March 23, 1914 by Executive Order, and such additional lands that the United States acquired in trust for the Tribe prior to November 17, 2000, the date the Tribe submitted its application to EPA for treatment as a state under §§303(c) and 401 of the CWA. These lands consist of 5,060 acres more or less, and are under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation. See 56 FR 64876, 64881 (December 12, 1991).
- Secondary Contact Recreation: Activities in which a person's water contact would be limited to the extent that bacterial infections of eyes, ear, respiratory, or digestive systems or urogenital areas would normally be avoided. Secondary contact recreation includes wading and fishing.
- Secondary Treatment: May be required under the following circumstances:
  - Sewage Waste—minimum level of treatment mandated by EPA regulations pursuant to Public Law 92-500;
  - Industrial and other waste sources—imply control equivalent to best practicable treatment (BPT).
- Sewage: The water-carried human or animal wastes from residences, buildings, industrial establishments, or other places, together with such groundwater infiltration and surface water as may be present. The admixture of sewage as herein defined, of industrial waste or wastes shall also be considered sewage.
- Surface Water: All water above the surface of the ground within the exterior boundaries of the Kalispel Indian Reservation including, but not limited to, lakes, ponds, rivers, springs, seeps, and

wetlands.

- Temperature: Water temperature expressed in degree Centigrade.
- Toxicity: Acute and/or chronic toxicity.
- Tribe: The Kalispel Tribe of Indians.
- Triennial Review Process: Refers to Clean Water Act, Section 303(c)(1) that requires the Tribe hold public hearings to review applicable water quality standards and, as appropriate, to modify and adopt revised or new standards at least every three years. The Tribe will follow guides provided in Chapter 6 “Procedures for Review and Revision of Water Quality Standards” from EPA’s Water Quality Standards Handbook to conduct all triennial reviews.
- Turbidity: The clarity of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidimeter.
- Waste: Sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive, or other substances, that will or may cause pollution or tend to cause pollution of any water of the Reservation.
- Waters of the Reservation: Lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, marshes, wetlands, inlets, canals, and all other bodies of surface water, natural, or artificial, inland, fresh, public or private (except those private waters that do not combine or affect a junction with natural surface or underground waters), which are within the Reservation.
- Wetlands: Areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.
- Wildlife Habitat: The waters and surrounding land areas of the Reservation used by fish, other aquatic life and wildlife at any stage of their life history or activity.
- Without Detrimental Changes in the Resident Biological Community: Refers to no loss of ecological integrity when compared to natural background conditions at an appropriate reference site or region.

## 5) Mixing Zones

In conjunction with the issuance of Section 402 or Section 404 permits, the Tribe may designate mixing zones in the waters of the Reservation on a case-by-case basis. The size of such mixing zones and the in-zone water quality in such mixing zones shall be consistent with the applicable procedures and guidelines in EPA’s Water Quality Standards Handbook and the Technical Support Document for Water Quality Based Toxic Control and subsequent updates of the handbook and technical support documents.

In no case will mixing zones occupy more than 25% of flow or width of a water body measured at critical low flow ~~(7Q10)~~. The critical 7Q10 low flow shall be calculated using methods recommended by the United States Geological Survey. Water quality criteria shall not be violated outside the mixing zone as a result of the discharge for which the mixing zone was authorized. Acute criteria shall be met at the point of discharge, chronic criteria shall be met at the edge of the mixing zone. Narrative criteria shall not be exceeded at any point at any time. Aesthetic Quality criteria apply to all waters at all times, including mixing zones.

No mixing zone with any reasonable potential to substantially interfere with existing uses of the water

body, result in ecosystem damage, or adversely affect public health will be granted. No mixing zone will be provided that adversely affects federally listed threatened or endangered species, or petitioned or candidate species nor for Washington State species of concern.

## **6) Water Quality Certification**

In conjunction with issuance of the Federal licenses or permits to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the waters of the Reservation, the applicant for the federal license or permit must apply for certification from the Tribe under Section 401 of the Clean Water Act, in accordance with tribal law governing the application and Tribal review process. To the extent authorized by EPA, the Tribe may approve, approve subject to conditions, or deny the certification to ensure compliance with tribal water quality standards.

## **7) Nonpoint Source Pollution**

Best management practices shall be applied to activities generating nonpoint source pollution such that water quality standards are not violated. If water quality standards are violated with best management practices in place, the discharger shall modify existing practices or apply further water pollution control measures selected or approved by the Tribe. When applicable best management practices are not being implemented, the Tribe may conclude activities are causing pollution and issue orders, directives, or sanctions to gain compliance.

## **8) Implementation and Enforcement**

The implementation and enforcement of these standards shall be pursuant to tribal law governing water quality protection and the application of these standards.

## **9) Antidegradation Policy**

This Antidegradation Policy shall be applicable to all surface waters of the Reservation. The purpose of the Antidegradation Policy is to guide decisions that affect water quality such that unnecessary degradation from point and nonpoint sources of pollution is prevented, and to protect, maintain, and enhance existing surface water quality to protect all existing beneficial uses. The Antidegradation Policy consists of the following three tiers:

### **9(a) Tier 1:**

Existing in-stream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. When the natural conditions of Waters of the Reservation are of a lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria.

### **9(b) Tier 2:**

Where the quality of the waters exceeds assigned criteria, that quality shall be maintained and protected unless the Tribe finds, after full satisfaction of the inter-governmental coordination and

public participation provisions, that:

- 1) allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located;
- 2) in allowing such degradation or lower water quality, the Tribe shall assure water quality adequate to protect existing uses fully;
- 3) lowering water quality will support all existing beneficial uses and will not violate applicable criteria or site specific criteria;
- 4) lowering water quality for economic or social development purpose shall not authorize other users or dischargers to increase their loading;
- 5) lowering water quality will not adversely affect listed threatened or endangered species, or species eligible for listing.
- 6) all wastes and other substances discharged will be treated and controlled to achieve:
  - i) the highest statutory and regulatory requirements for all new and existing point sources, and
  - ii) all cost-effective and reasonable best management practices for non- point sources.

### **9(c) Tier 3:**

Water quality shall be maintained and protected in high quality waters within areas designated as unique water quality management areas and waters otherwise of exceptional recreational, ecological, cultural, or religious significance. Such waters may be classified as “Outstanding Resource Waters of the Reservation”. Provision for such designation will be provided for in the Tribe’s Law and Order Code as adopted by resolution.

In those cases where potential water quality impairment associated with a thermal discharge is involved, this Antidegradation Policy’s implementing method shall be consistent with Section 316 of the Clean Water Act.

## **10) Toxic Substances**

1) Toxic substances shall not be introduced in waters of the reservation in amounts, concentrations, or combinations 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. ~~The numeric criteria in Table 2 shall apply to all waters for which the Tribe determines that designated uses are attainable that provide for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water.~~

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 characteristic beneficial uses of waters are being fully protected.

3) The following criteria (Tables 2 and ~~63~~) shall be applied at all times to all surface waters of the reservation (except as provided for in approved mixing zones) for the protection of aquatic life and

[human health](#). Toxics criteria apply at and above critical low flows described in Table 1. The department may revise the following criteria on a reservation-wide or water body specific basis as needed to protect aquatic life occurring in waters of the reservation and to increase the technical accuracy of the criteria. [Criteria for toxic, and other substances not listed will be determined with consideration of the most recent published version of USEPA National Recommended Water Quality Criteria, and other relevant information as appropriate.](#)

4) Human Health [ambient water](#) criteria assume a fish consumption rate (FCR) of ~~17.5~~389 g/day [based on regional tribal fish consumption survey information](#) and a carcinogenicity risk of  $10^{-6}$ . Water and Organisms values represent the maximum ambient water concentration for consumption of both water and fish or other aquatic organisms in that water. Organisms Only values represent the maximum ambient water concentration for consumption of fish or other aquatic organisms in that water. ~~Nickel, arsenic, and chloroform, using a consumption rate of 6.5g/day, are the exceptions to this. Water and Organisms values represent the maximum ambient concentration for consumption of both water and fish or other aquatic organisms in that water.~~

5) Criteria Maximum Concentration (CMC), or acute criteria, is an estimate of the highest concentration of a material in surface water to which aquatic life can be exposed briefly (one hour average) without resulting in an unacceptable deleterious effect.

6) Criteria Continuous Concentration (CCC), or chronic criteria, is an estimate of the highest concentration of a material in surface water to which aquatic life can be exposed for an extended period (four days) without resulting in an unacceptable deleterious effect.

**Table 2. Toxic Substances**

<b>Compound</b>	<b>CAS #</b>	<b>Freshwater-Aquatic Life-Criterion-Maximum-Concentration (ug/L)-e</b>	<b>Freshwater-Aquatic Life-Criterion-Continuous Concentration (ug/L)-e</b>	<b>Human-Health-Water &amp; Organisms (ug/L)</b>	<b>Human-Health-Organisms-Only (ug/L)</b>
Atrazine		x	y		
1. Antimony	744036			5.6 a	640 a
2. Arsenic	744038	340 h, l, r, z	150 h, l, r, z	0.018 m, t	0.14 m, t
3. Beryllium	4470417				
4. Cadmium		u	v	w	w
5a. Chromium (III)	1606583	570 d, h, l, r	74 d, h, l, r		
5b. Chromium (VI)	18540299	16 h, l, r	11 h, l, r		
6. Copper	7440508	13 d, h, l, r	9.0 d, h, l, r	1,300 k	
7. Lead	7439921	65 d, h, l	2.5 d, h, l		
8a. Mercury	7439976	1.4 h, l, r			
8b. Methylmercury	22967926				0.3 mg/kg i
9. Nickel	7440020	470 d, h, l, r	52 d, h, l, r	610	4,600
10. Selenium	7782492			170 a	4,200 a
11. Silver	7440224	3.2 d, f, h, l			
12. Thallium	7440280			0.24 a	0.47 a
13. Zinc	7440666	120 d, h, l	120 d, h, l, r	7,400 a	25,000 a
14. Cyanide	57125	22 r, s	5.2 r, s	140 a	16,000 a, j
15. Asbestos	1332214			7-million fibers/L k	
16. 2,3,7,8-TCDD (Dioxin)	1746016			5.0 E-9	5.1 E-9
17. Acrolein	107028			190	290
18. Acrylonitrile	107131			0.051 a	0.25 a
19. Benzene	71432			0.61-2.2 a	14-51 a
20. Bromoform	75252			4.3 a	130 a
21. Carbon Tetrachloride	56235			0.23 a	1.6 a
22. Chlorobenzene	108907			130 a	1,600 a, j
23. Chlorodibromomethane	124481			0.40 a	13 a
24. Chloroethane	75003				
25. 2-Chloroethylvinyl Ether	110758				
26. Chloroform	67663			5.7 b	470 b

<b>Compound</b>	<b>CAS #</b>	<b>Freshwater-Aquatic Life-Criterion-Maximum-Concentration-(ug/L)-c</b>	<b>Freshwater-Aquatic Life-Criterion-Continuous-Concentration-(ug/L)-c</b>	<b>Human-Health-Water-&amp;-Organisms-(ug/L)</b>	<b>Human-Health-Organisms-Only-(ug/L)</b>
28. 1,1-Dichloroethane	75343				
29. 1,2-Dichloroethane	107062			0.38 a	37 a
30. 1,1-Dichloroethylene	75354			0.056 a	1.2 a
31. 1,2-Dichloropropene	78875			0.50	15
32. 1,3-Dichloropropene	542756			0.34 a	21 a
33. Ethylbenzene	100414			530 a	2,100 a
34. Methyl Bromide	74839			47 a	1,500 a
35. Methyl Chloride	74873				
36. Methylene Chloride	75092			4.6 a	590 a
37. 1,1,2,2-Tetrachloroethane	79345			0.17 a	4.0 a
38. Tetrachloroethylene	127184			0.69	3.3
39. Toluene	108883			1,300 a	15,000 a
40. 1,2-Trans-Dichloroethylene	156605			140 a	10,000 a
41. 1,1,1-Trichloroethane	71556				
42. 1,1,2-Trichloroethane	79005			0.59 a	16 a
43. Trichloroethylene	79016			2.5	30
44. Vinyl Chloride	75014			0.025 a	2.4 a
45. 2-Chlorophenol	95578			80 a	150 a
46. 2,4-Dichlorophenol	120832			77 a	290 a
47. 2,4-Dimethylphenol	105679			380 a	850 a
48. 2-Methyl-4,6-Dinitrophenol	534521			13	280

<b>Compound</b>	<b>CAS #</b>	<b>Freshwater-Aquatic Life-Criterion-Maximum-Concentration-(ug/L)-e</b>	<b>Freshwater-Aquatic Life-Criterion-Continuous-Concentration-(ug/L)-e</b>	<b>Human-Health-Water &amp; Organisms-(ug/L)</b>	<b>Human-Health-Organisms-Only-(ug/L)</b>
49. 2,4-Dinitrophenol	51285			69 a	5,300 a
50. 2-Nitrophenol	88755				
51. 4-Nitrophenol	100027				
52. 3-Methyl-4-Chlorophenol	59507				
53. Pentachlorophenol	87865	19 e, r	15 e, r	0.27 a	3.0 a, j
54. Phenol	108952			21,000 a	1,700,000 a, j
55. 2,4,6-Trichlorophenol	88062			1.4 a	2.4 a
56. Acenaphthene	83329			670 a	990 a
57. Acenaphthylene	208968				
58. Anthracene	120127			8,300 a	40,000 a
59. Benzidine	92875			0.000086 a	0.00020 a
60. Benzo(a) Anthracene	56553			0.0038 a	0.018 a
61. Benzo(a) Pyrene	50328			0.0038 a	0.018 a
62. Benzo(b) Fluoranthene	205992			0.0038 a	0.018 a
63. Benzo(ghi) Perylene	191242				
64. Benzo(k) Fluoranthene	207089			0.00038 a	0.018 a
65. Bis(2-Chloroethoxy) Methane	111911				
66. Bis(2-Chloroethyl) Ether	111444			0.030 a	0.53 a
67. Bis(2-Chloroiso-propyl)-Ether	108601			1,400 a	65,000 a
68. Bis(2-Ethylhexyl)-Phthalate(x)	117817			1.2 a	2.2 a
69. 4-Bromophenyl Phenyl Ether	101553				

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Compound	CAS#	Freshwater-Aquatic Life-Criterion-Maximum-Concentration-(ug/L)-c	Freshwater-Aquatic Life-Criterion-Continuous-Concentration-(ug/L)-c	Human-Health-Water & Organisms-(ug/L)	Human-Health-Organisms-Only-(ug/L)
70. Butylbenzyl Phthalate(w)	85687			1,500 a	1,900 a
71. 2-Chloronaphthalene	91587			1,000 a	1,600 a
72. 4-Chlorophenyl Phenyl Ether	7005723				
73. Chrysene	218019			0.0038 a	0.018 a
74. Dibenzo (a,h) Anthracene	53703			0.0038 a	0.018 a
75. 1,2-Dichlorobenzene	95501			420 a	1,300 a
76. 1,3-Dichlorobenzene	541731			320	960
77. 1,4-Dichlorobenzene	106467			63	190
78. 3,3-Dichlorobenzidine	91941			0.021 a	0.028 a
79. Diethyl Phthalate	84662			17,000 a	44,000 a
80. Dimethyl Phthalate	131113			270,000	1,100,000
81. Di-n-Butyl Phthalate	84742			2,000 a	4,500 a
82. 2,4-Dinitrotoluene	121142			0.11	3.4
83. 2,6-Dinitrotoluene	606202				
84. Di-n-Octyl Phthalate	117840				
85. 1,2-Diphenylhydrazine	122667			0.036 a	0.20 a
86. Fluoranthene	206440			130 a	140 a
87. Fluorene	86737			1,100 a	5,300 a
88. Hexachlorobenzene	118741			0.00028 a	0.00029 a
89. Hexachlorobutadiene	87683			0.44 a	18 a

<b>Compound</b>	<b>CAS#</b>	<b>Freshwater-Aquatic Life-Criterion-Maximum-Concentration-(ug/L)-e</b>	<b>Freshwater-Aquatic Life-Criterion-Continuous-Concentration-(ug/L)-e</b>	<b>Human-Health-Water-&amp;-Organisms-(ug/L)</b>	<b>Human-Health-Organisms-Only-(ug/L)</b>
90. Hexachlorocyclopentadiene	77474			47-a	1,300-a,j
91. Hexachloroethane	67721			1.4-a	3.3-a
92. Ideno(1,2,3-ed)Pyrene	193395			0.0038-a	0.018-a
93. Isophorone	78591			35-a	960-a
94. Naphthalene	91203				
95. Nitrobenzene	98953			17-a	690-a,j
96. N-Nitrosodimethylamine	62759			0.00069-a	3.0-a
97. N-Nitrosodimethylpropylamine	621647			0.0050-a	0.50-a
98. N-Nitrosodiphenylamine	86306			3.3-a	6.0-a
99. Phenanthrene	85018				
100. Pyrene	129000			830-a	4,000-a
101. 1,2,4-Trichlorobenzene	120821			35-a	70-a
102. Aldrin	309002	3.0-f		0.000049-a	0.000050-a
103. alpha-BHC	319846			0.0026-a	0.0049-a
104. beta-BHC	319857			0.0091-a	0.017-a
105. gamma-BHC	58899	0.95-r		0.012	0.023
106. delta-BHC	319868				
107. Chlordane	57749	2.4-f	0.0043-f	0.00080-a	0.00081-a
108. 4,4'-DDT	50293	1.1-f	0.001-f	0.00022-a	0.00022-a
109. 4,4'-DDE	72559			0.00022-a	0.00022-a
110. 4,4'-DDD	72548			0.00031-a	0.00031-a
111. Dieldrin	60571	0.24-r	0.056-r	0.000052-a	0.000053-a
112. alpha-Endosulfan	959988	0.22-f	0.056-f	62-a	89-a
113. beta-Endosulfan	33213659	0.22-f	0.056-f	62-a	89-a
114. Endosulfan Sulfate	1031078			62-a	89-a

Compound	CAS #	Freshwater-Aquatic Life-Criterion-Maximum-Concentration (ug/L)-e	Freshwater-Aquatic Life-Criterion-Continuous-Concentration (ug/L)-e	Human-Health-Water-&-Organisms (ug/L)	Human-Health-Organisms-Only (ug/L)
115. Endrin	72208	0.086 <sub>r</sub>	0.036 <sub>r</sub>	0.059 <sub>a</sub>	0.060 <sub>a, j</sub>
116. Endrin Aldehyde	7421934			0.29 <sub>a</sub>	0.30 <sub>a, j</sub>
117. Heptachlor	76448	0.52 <sub>f</sub>	0.0038 <sub>f</sub>	0.000078 <sub>a</sub>	0.000079 <sub>a</sub>
118. Heptachlor Epoxide	1024573	0.52 <sub>f</sub>	0.0038 <sub>f</sub>	0.000039 <sub>a</sub>	0.000039 <sub>a</sub>
119. Polychlorinated Biphenyls (PCBs)			0.014 <sub>q</sub>	0.000064 <sub>a, q</sub>	0.000064 <sub>a, q</sub>
120. Toxaphene	8001352	0.73	0.0002	0.00027 <sub>a</sub>	0.00028 <sub>a</sub>
Total Number of Criteria (g)		23	21	96	95

7) Footnotes to Table 2:

- a. This criterion reflects the Environmental Protection Agency's  $q1^*$  or RfD, as contained in the integrated Risk Information System (IRIS) as of August 28, 2000. The fish tissue bioconcentration factor (BCF) from the 1980 Ambient Water Quality Criteria document was retained in each case (unless otherwise noted).
- b. This criterion has been revised to reflect the Environmental Protection Agency's  $q1^*$  or RfD, as contained in the Integrated Risk Information System (IRIS) as of April 8, 1998. The fish tissue bioconcentration factor (BCF) from the 1980 Ambient Water Quality Criteria document was retained in each case.
- c. Criterion Maximum Concentration (CMC) equals the highest concentration of a pollutant to which aquatic life can be exposed for a short period (one-hour average) of time without deleterious effects. Criterion Continuous Concentration (CCC) equals the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (four days) without deleterious effects. The term "ug/L" means micrograms per liter.
- d. Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the waterbody. The equations are provided at paragraph 8 (a) through 8 (d) of this section. Values displayed in the table correspond to a total hardness of 100mg/L.
- e. Freshwater aquatic life criteria for pentachlorophenol are expressed as a function of pH, and are calculated as follows: Values displayed in the table correspond to a pH of 7.8.  $CMC = \exp(1.005(pH) - 4.869)$ .  $CCC = \exp(1.005(pH) - 5.134)$ .

- ~~f. This criterion is based on 304 (a) aquatic life criterion issued in 1980, and was issued in one of the following documents: Aldrin/Dieldrin (EPA 440/5-80-019), Chlordane (EPA 440/5-80-027), DDT (EPA 440/5-80-038), Endosulfan (EPA 440/5-80-046), Endrin (EPA 440-5-80-047), Heptachlor (EPA 440/5-80-052), Hexachlorocyclohexane (EPA 440/5-80-054), Silver (EPA 440/5-80-071). The Minimum data requirements and derivation procedures used to derive the 1980 criteria were different from those in the 1985 Guidelines. For example, a “CMC” derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. If assessment is to be done using an averaging period, the values given should be divided by 2 to obtain a value that is more comparable to CMC derived using the 1985 Guidelines.~~
- ~~g. These totals simply sum the number of criteria in each column. For aquatic life, there are 24 priority toxic pollutants with some type of freshwater, acute or chronic criteria. For human health, there are 99 priority toxic pollutants with either “water and organism” or “organism only” criteria. Note that these totals count chromium as one pollutant even though EPA had developed criteria based on two valence states. In the matrix, EPA has assigned numbers 5a and 5b to the criteria for chromium to reflect the fact that the list of 126 priority pollutants included only a single listing for chromium.~~
- ~~h. Criteria for these metals are expressed as a function of the water effect ratio, WER, as defined in paragraphs 8 (e) and 8 (f) of this section. CMC = (CMC value) x WER; CCC = (CCC value) x WER.~~
- ~~i. This criterion is a fish tissue residue criterion based on a total fish consumption weighted rate of 0.0175 kg/day. See EPA 823-R-01-001~~
- ~~j. No criterion for protection of human health from consumption of aquatic organisms (excluding water) was presented in the 1980 criteria document or in the 1986 Quality Criteria for Water. Nevertheless, sufficient information was presented in the 1980 document to allow a calculation of a criterion, even though the results of such a calculation were not shown in the document.~~
- ~~k. The CWA 304(a) criterion for this compound is the MCL or drinking water action level.~~
- ~~l. These freshwater criteria for metals are expressed in terms of the dissolved fraction of the metal in the water column. Criterion values were calculated by using EPA’s Clean Water Act 304(a) guidance values (described in the total recoverable fraction) and then applying the conversion factors in 8 (d) and 8 (g).~~
- ~~m. EPA is currently reassessing the criteria for arsenic. Upon completion of the reassessment, EPA will publish revised criteria as appropriate. National Recommended Water Quality Criteria—Correction (EPA 822-Z-99-001, April 1999)~~
- ~~p. This water quality criterion is expressed in terms of total recoverable metal in the water column. It is scientifically acceptable to use the conversion factor (0.996 for the CMC, or 0.922 for the CCC) to convert this criterion to a value that is expressed in terms of dissolved metal. (See 40 CFR part 132).~~

- q. ~~This criterion applies to total PCB's (that is, the sum of all homolog, all isomer, all congener, or all Aroclor analyses).~~
- r. ~~This criterion has been recalculated pursuant to the 1995 Updates: Water Quality Criteria Document for the Protection of Aquatic Life in Ambient Water, Office of Water, EPA 820-B-96-001, September 1996. See also Great Lakes Water Quality Initiative Criteria Document for the Protection of Aquatic Life in Ambient Water, EPA 80-B-95-004, March 1995.~~
- s. ~~This water quality criterion is expressed as  $\mu\text{g}$  free cyanide (as CN)/L.~~
- t. ~~This recommended water quality criterion refers to the inorganic form only.~~
- u. ~~dissolved CMC for cadmium =  $1.136672 \cdot [\ln(\text{hardness})(0.041838)] * e^{1.0166[\ln(\text{hardness})] - 3.924}$  (66 FR 18935, April 12, 2001)~~
- v. ~~dissolved CCC for cadmium =  $1.101672 \cdot [\ln(\text{hardness})(0.041838)] * e^{0.7409[\ln(\text{hardness})] - 4.719}$  (66 FR 18935, April 12, 2001)~~
- w. ~~EPA has not calculated human health criteria for this contaminant but it will be addressed in NPDES permit actions using narrative criteria.~~
- x. ~~Average of all samples collected in one hour with a concentration not to exceed  $350 \mu\text{g/L}$  more than once every three years on the average. This is a draft criterion (66 FR 49186, September 26, 2001) the Tribe will interpret its toxic narrative criterion using this draft criterion.~~
- y. ~~Average of all samples taken in four consecutive days with a concentration not to exceed  $12 \mu\text{g/L}$  more than once every three years on the average. This is a draft criterion (66 FR 49186, September 26, 2001) the Tribe will interpret its toxic narrative criterion using this draft criterion.~~
- z. ~~This recommended water quality criterion was derived from data for arsenic (III), but is applied here to total arsenic, which might imply that arsenic (III) and arsenic (V) are equally toxic to aquatic life and that their toxicities are additive. In the arsenic criteria document (EPA 440/5-84-033, January 1985), Species Mean Acute Values (SMAVs) are given for both arsenic (III) and arsenic (V) for five species and the ratios of the SMAVs for each species range from 0.6 to 1.7. Chronic values are available for both arsenic (III) and arsenic (V) for one species; for the fathead minnow, the chronic value for arsenic (V) is 0.29 times the chronic value for arsenic (III). No data are known to be available concerning whether the toxicities of the forms of arsenic to aquatic organisms are additive.~~

8) ~~Calculating Metals Criteria. Final CMC and CCC values should be rounded to two significant figures.~~

(a)  ~~$\text{CMC} = \text{WER} * (\text{Acute Conversion Factor}) * (\exp\{m_A[\ln(\text{hardness})] + b_A\})$~~

(b)  ~~$\text{CCC} = \text{WER} * (\text{Chronic Conversion Factor}) * (\exp\{m_C[\ln(\text{hardness})] + b_C\})$~~

(e) Table 3

Metal	$m_A$	$b_A$	$m_C$	$b_C$
Chromium (III)	0.8190	3.7256	0.8190	0.6848
Copper	0.9422	-1.700	0.8545	-1.702
Lead	1.273	-1.460	1.273	-4.705
Nickel	0.8460	2.255	0.8460	0.0584
Silver	1.72	-6.52	—	—
Zinc	0.8473	0.884	0.8473	0.884

Note: The term “exp” represents the base e exponential function.

(d) Table 4

Metal	Conversion Factor (CF) for freshwater acute criteria	Conversion Factor (CF) for freshwater chronic criteria
Antimony	d	d
Arsenic	1.000	1.000
Beryllium	d	d
Cadmium	0.994 b	0.909 b
Chromium (III)	0.316	0.860
Chromium (IV)	0.982	0.962
Copper	0.960	0.960
Lead	0.791 b	0.791 b
Mercury	0.85	0.85
Nickel	0.998	0.997
Selenium	—	e
Silver	0.85	d
Thallium	d	d
Zinc	0.978	0.986

Note: The term “Conversion Factor” represents the recommended conversion factor for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column. See “Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria,” October 1, 1993, by Martha G. Prothro, Acting Assistant Administrator for Water.

#### Footnotes

- b.—Conversion Factors for these pollutants in freshwater are hardness dependent. CFs are based on a hardness of 100 mg/L as calcium carbonate ( $\text{CaCO}_3$ ). Other hardness can be used; CFs should be recalculated using the equations in Table 5.
- c.—Bioaccumulative compound and inappropriate to adjust to percent dissolved.
- d.—EPA has not published an aquatic life criterion value.

~~8 (e) The hardness values used shall be consistent with the design discharge conditions established in Table 1 for design flows and mixing zones.~~

~~8 (f) The criteria for metals—compounds #1 through #13 in Table 2—are expressed as dissolved except where otherwise noted. For purposes of calculating aquatic life criteria for metals from the equations in footnote h to Table 2 and the equations in paragraphs 8 (a) through 8 (e), the water effect ratio is generally computed as a specific pollutant’s acute or chronic toxicity value measured in water from the site covered by the standard, divided by the respective acute or chronic toxicity value in laboratory dilution water. To use a water effect ratio other than the default of 1, the WER must be determined as set forth in Interim Guidance on Determination and Use of Water Effect Ratio, U.S. EPA Office of Water, EPA 823-B-94-001, February 1994. For calculation of criteria using site-specific values for both the hardness and the water effect ratio, the hardness used in the equations in paragraphs 8 (a) through 8 (e) must be determined as required in paragraphs 8 (e) and 8 (f). Water hardness must be calculated from the measured calcium and magnesium ions present, and the ratio of calcium to magnesium should be approximately the same in standard laboratory toxicity testing water as in site water.~~

~~8 (g) Table 5~~

	<del>Acute</del>	<del>Chronic</del>
<del>Lead</del>	<del>1.46203 [(ln(hardness))*(0.145712)]</del>	<del>1.46203 [(ln(hardness))*(0.145712)]</del>

~~8 (h) For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraphs 8 (a) through 8 (e) of this section, for waters with a hardness of 400 mg/L or less as calcium carbonate, the actual ambient hardness of the surface water shall be used in those equations. For waters with a hardness of over 400 mg/L as calcium carbonate, a hardness of 400 mg/L as calcium carbonate shall be used with a default Water Effect Ratio (WER) of 1, or the actual hardness of the ambient surface water shall be used with a WER.~~

**Table 2. Toxics Substances**

Unless otherwise noted in the table below, the aquatic life CMC is applied as a 1-hour average concentrations, and the aquatic life CCC is applied as a 4-day average concentration. The CCC and CMC should not be exceeded more than once every three years. Footnotes G and O describe the exception to the frequency and duration of the criteria stated in this paragraph.

All values are in micrograms per liter unless otherwise noted. Dashes in the criterion column means that there is no numeric criterion.

<u>Compound</u>	<u>CAS #</u>	<u>Aquatic Life CMC</u>	<u>Aquatic Life CCC</u>	<u>Human Health Criteria, Water &amp; Organisms</u>	<u>Human Health Criteria, Organisms Only<sup>A</sup></u>
<u>Aluminum (pH 6.5 – 9.0)</u>	<u>7429905</u>	<u>750<sup>B</sup></u>	<u>87<sup>B</sup></u>	<u>---</u>	<u>---</u>
<u>Ammonia</u>	<u>7664417</u>	<u>See Footnote C</u>	<u>See Footnote C</u>	<u>---</u>	<u>---</u>
<u>Antimony</u>	<u>744036</u>	<u>---</u>	<u>---</u>	<u>3</u>	<u>30</u>
<u>Arsenic</u>	<u>744038</u>	<u>340<sup>D</sup></u>	<u>150<sup>D</sup></u>	<u>0.0199<sup>D</sup></u>	<u>0.224<sup>D</sup></u>
<u>Barium</u>	<u>7440393</u>	<u>---</u>	<u>---</u>	<u>2000<sup>R</sup></u>	<u>---</u>
<u>Beryllium</u>	<u>7440417</u>	<u>---</u>	<u>---</u>	<u>4.0<sup>R</sup></u>	<u>---</u>
<u>Cadmium</u>	<u>7440439</u>	<u>See Footnote E</u>	<u>See Footnote E</u>	<u>5<sup>R</sup></u>	<u>---</u>
<u>Chromium (III)</u>	<u>1606583</u>	<u>See Footnote E</u>	<u>See Footnote E</u>	<u>See Footnote F</u>	<u>---</u>
<u>Chromium(VI)</u>	<u>1854029</u>	<u>16</u>	<u>11</u>	<u>See Footnote F</u>	<u>---</u>
<u>Copper</u>	<u>7440508</u>	<u>See Footnote G</u>	<u>See Footnote G</u>	<u>1,300<sup>R</sup>---</u>	<u>---</u>
<u>Lead</u>	<u>7439921</u>	<u>See Footnote E</u>	<u>See Footnote E</u>	<u>---</u>	<u>---</u>
<u>Mercury</u>	<u>7439976</u>	<u>---</u>	<u>---</u>	<u>0.00015<sup>H</sup></u>	<u>---</u>
<u>Methylmercury</u>	<u>2296792</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>0.013 mg/kg<sup>I</sup></u>
<u>Nickel</u>	<u>7440020</u>	<u>See Footnote E</u>	<u>See Footnote E</u>	<u>10</u>	<u>20</u>
<u>Selenium</u>	<u>7782492</u>	<u>---</u>	<u>See Footnote J</u>	<u>10</u>	<u>40</u>
<u>Silver</u>	<u>7440224</u>	<u>See Footnote E</u>	<u>---</u>	<u>---</u>	<u>---</u>
<u>Thallium</u>	<u>7440280</u>	<u>---</u>	<u>---</u>	<u>0.02</u>	<u>0.02</u>
<u>Tributyltin (TBT)</u>	<u>---</u>	<u>0.46</u>	<u>0.072</u>	<u>---</u>	<u>---</u>
<u>Zinc</u>	<u>7440666</u>	<u>See Footnote E</u>	<u>See Footnote E</u>	<u>200</u>	<u>200</u>
<u>Cyanide</u>	<u>57125</u>	<u>22<sup>K</sup></u>	<u>5.2<sup>K</sup></u>	<u>3<sup>L</sup></u>	<u>20<sup>L</sup></u>
<u>Asbestos</u>	<u>1332214</u>	<u>---</u>	<u>---</u>	<u>7 million fibers/L<sup>R</sup></u>	<u>---</u>
<u>Chlorine</u>	<u>7782505</u>	<u>19</u>	<u>11</u>	<u>---</u>	<u>---</u>
<u>2,3,7,8-TCDD (Dioxin) Total Toxic Equivalents</u>	<u>1746016</u>	<u>---</u>	<u>---</u>	<u>2.30 E-10<sup>M</sup></u>	<u>2.31 E-10<sup>M</sup></u>
<u>Acrolein</u>	<u>107028</u>	<u>3.0</u>	<u>3.0</u>	<u>2</u>	<u>20</u>
<u>Acrylonitrile</u>	<u>107131</u>	<u>---</u>	<u>---</u>	<u>0.046</u>	<u>0.33</u>
<u>Benzene</u>	<u>71432</u>	<u>---</u>	<u>---</u>	<u>0.29</u>	<u>0.65</u>
<u>Bromoform</u>	<u>75252</u>	<u>---</u>	<u>---</u>	<u>2.7</u>	<u>4.7</u>
<u>Carbon Tetrachloride</u>	<u>56235</u>	<u>---</u>	<u>---</u>	<u>0.1</u>	<u>0.2</u>

<u>Compound</u>	<u>CAS #</u>	<u>Aquatic Life CMC</u>	<u>Aquatic Life CCC</u>	<u>Human Health Criteria, Water &amp; Organisms</u>	<u>Human Health Criteria, Organisms Only<sup>A</sup></u>
<a href="#">Chlorobenzene</a>	<a href="#">108907</a>	---	---	<a href="#">60</a>	<a href="#">100</a>
<a href="#">Chlorodibromomethane</a>	<a href="#">124481</a>	---	---	<a href="#">0.39</a>	<a href="#">0.85</a>
<a href="#">Chloroform</a>	<a href="#">67663</a>	---	---	<a href="#">40</a>	<a href="#">100</a>
<a href="#">1,2-Dibromo-3-chloropropane (DBCP)</a>	<a href="#">96128</a>	---	---	<a href="#">0.2<sup>R</sup></a>	---
<a href="#">Dichlorobromomethane</a>	<a href="#">75274</a>	---	---	<a href="#">0.48</a>	<a href="#">1.1</a>
<a href="#">1,2-Dichloroethane</a>	<a href="#">107062</a>	---	---	<a href="#">5<sup>R</sup></a>	<a href="#">29</a>
<a href="#">1,1-Dichloroethylene</a>	<a href="#">75354</a>	---	---	<a href="#">7<sup>R</sup></a>	<a href="#">700</a>
<a href="#">1,2-Dichloropropane</a>	<a href="#">78875</a>	---	---	<a href="#">0.5</a>	<a href="#">1.3</a>
<a href="#">1,3-Dichloropropene</a>	<a href="#">542756</a>	---	---	<a href="#">0.2</a>	<a href="#">0.5</a>
<a href="#">Ethylbenzene</a>	<a href="#">100414</a>	---	---	<a href="#">5</a>	<a href="#">5</a>
<a href="#">Methyl Bromide</a>	<a href="#">74839</a>	---	---	<a href="#">100</a>	<a href="#">500</a>
<a href="#">Methylene Chloride</a>	<a href="#">75092</a>	---	---	<a href="#">12</a>	<a href="#">56</a>
<a href="#">1,1,2,2-Tetrachloroethane</a>	<a href="#">79345</a>	---	---	<a href="#">0.06</a>	<a href="#">0.1</a>
<a href="#">Tetrachloroethylene (Perchloroethylene)</a>	<a href="#">127184</a>	---	---	<a href="#">1</a>	<a href="#">1</a>
<a href="#">Toluene</a>	<a href="#">108883</a>	---	---	<a href="#">10</a>	<a href="#">20</a>
<a href="#">Trans-1,2-Dichloroethylene (DCE)</a>	<a href="#">156605</a>	---	---	<a href="#">60</a>	<a href="#">200</a>
<a href="#">1,1,1 Trichloroethane</a>	<a href="#">71556</a>	---	---	<a href="#">200<sup>R</sup></a>	<a href="#">7000</a>
<a href="#">1,1,2 -Trichloroethane</a>	<a href="#">79005</a>	---	---	<a href="#">0.21</a>	<a href="#">0.35</a>
<a href="#">Trichloroethylene</a>	<a href="#">79016</a>	---	---	<a href="#">0.2</a>	<a href="#">0.3</a>
<a href="#">Vinyl Chloride</a>	<a href="#">75014</a>	---	---	<a href="#">0.020</a>	<a href="#">0.071</a>
<a href="#">2-Chlorophenol</a>	<a href="#">95578</a>	---	---	<a href="#">20</a>	<a href="#">30</a>
<a href="#">2,4-Dichlorophenol</a>	<a href="#">120832</a>	---	---	<a href="#">2</a>	<a href="#">2</a>
<a href="#">2,4-Dimethylphenol</a>	<a href="#">105679</a>	---	---	<a href="#">50</a>	<a href="#">100</a>
<a href="#">3-Methyl-4-Chlorophenol</a>	<a href="#">59507</a>	---	---	<a href="#">80</a>	<a href="#">90</a>
<a href="#">2-Methyl-4,6-Dinitrophenol</a>	<a href="#">534521</a>	---	---	<a href="#">0.7</a>	<a href="#">1</a>
<a href="#">2,4-Dinitrophenol</a>	<a href="#">51285</a>	---	---	<a href="#">7</a>	<a href="#">20</a>
<a href="#">Dinitrophenols</a>	<a href="#">25550587</a>	---	---	<a href="#">9</a>	<a href="#">50</a>
<a href="#">Pentachlorophenol</a>	<a href="#">87865</a>	<a href="#">See Footnote N</a>	<a href="#">See Footnote N</a>	<a href="#">0.0008</a>	<a href="#">0.0009</a>
<a href="#">Phenol</a>	<a href="#">108952</a>	---	---	<a href="#">3,000</a>	<a href="#">10,000</a>
<a href="#">2,4,5-Trichlorophenol</a>	<a href="#">95954</a>	---	---	<a href="#">20</a>	<a href="#">20</a>
<a href="#">2,4,6-Trichlorophenol</a>	<a href="#">88062</a>	---	---	<a href="#">0.1</a>	<a href="#">0.11</a>
<a href="#">Acenaphthene</a>	<a href="#">83329</a>	---	---	<a href="#">4</a>	<a href="#">4</a>
<a href="#">Anthracene</a>	<a href="#">120127</a>	---	---	<a href="#">20</a>	<a href="#">20</a>
<a href="#">Benzidine</a>	<a href="#">92875</a>	---	---	<a href="#">0.000099</a>	<a href="#">0.00046</a>
<a href="#">Benzo(a) Anthracene</a>	<a href="#">56553</a>	---	---	<a href="#">0.000063</a>	<a href="#">0.000063</a>
<a href="#">Benzo(a) Pyrene</a>	<a href="#">50328</a>	---	---	<a href="#">0.0000063</a>	<a href="#">0.0000063</a>
<a href="#">Benzo(b) Fluoranthene</a>	<a href="#">205992</a>	---	---	<a href="#">0.000063</a>	<a href="#">0.000063</a>

<u>Compound</u>	<u>CAS #</u>	<u>Aquatic Life CMC</u>	<u>Aquatic Life CCC</u>	<u>Human Health Criteria, Water &amp; Organisms</u>	<u>Human Health Criteria, Organisms Only<sup>A</sup></u>
<a href="#">Benzo(k) Fluoranthene</a>	<a href="#">207089</a>	---	---	<a href="#">0.00063</a>	<a href="#">0.00063</a>
<a href="#">Bis(2-Chloroethyl) Ether</a>	<a href="#">111444</a>	---	---	<a href="#">0.021</a>	<a href="#">0.1</a>
<a href="#">Bis(2-Chloro-1-Methylethyl) Ether</a>	<a href="#">108601</a>	---	---	<a href="#">90</a>	<a href="#">140</a>
<a href="#">Bis(ChloroMethyl) Ether</a>	<a href="#">542881</a>	---	---	<a href="#">0.000011</a>	<a href="#">0.000082</a>
<a href="#">Bis(2-Ethylhexyl) Phthalate</a>	<a href="#">117817</a>	---	---	<a href="#">0.018</a>	<a href="#">0.018</a>
<a href="#">Butylbenzyl Phthalate</a>	<a href="#">85687</a>	---	---	<a href="#">0.005</a>	<a href="#">0.005</a>
<a href="#">2- Chloronaphthalene</a>	<a href="#">91587</a>	---	---	<a href="#">50</a>	<a href="#">50</a>
<a href="#">Chrysene</a>	<a href="#">218019</a>	---	---	<a href="#">0.0063</a>	<a href="#">0.0063</a>
<a href="#">Dibenzo (a,h) Anthracene</a>	<a href="#">53703</a>	---	---	<a href="#">0.0000063</a>	<a href="#">0.0000063</a>
<a href="#">1,2-Dichlorobenzene</a>	<a href="#">95501</a>	---	---	<a href="#">100</a>	<a href="#">100</a>
<a href="#">1,3- Dichlorobenzene</a>	<a href="#">541731</a>	---	---	<a href="#">0.4</a>	<a href="#">0.4</a>
<a href="#">1,4- Dichlorobenzene</a>	<a href="#">106467</a>	---	---	<a href="#">30</a>	<a href="#">30</a>
<a href="#">3,3-Dichlorobenzidine</a>	<a href="#">91941</a>	---	---	<a href="#">0.0053</a>	<a href="#">0.0058</a>
<a href="#">Diethyl Phthalate</a>	<a href="#">84662</a>	---	---	<a href="#">30</a>	<a href="#">30</a>
<a href="#">Dimethyl Phthalate</a>	<a href="#">131113</a>	---	---	<a href="#">90</a>	<a href="#">90</a>
<a href="#">Di-n-Butyl Phthalate</a>	<a href="#">84742</a>	---	---	<a href="#">1</a>	<a href="#">1</a>
<a href="#">2,4-Dinitrotoluene</a>	<a href="#">121142</a>	---	---	<a href="#">0.0268</a>	<a href="#">0.0692</a>
<a href="#">1,2 Diphenylhydrazine</a>	<a href="#">122667</a>	---	---	<a href="#">0.007</a>	<a href="#">0.008</a>
<a href="#">Fluoranthene</a>	<a href="#">206440</a>	---	---	<a href="#">1</a>	<a href="#">1</a>
<a href="#">Fluorene</a>	<a href="#">86737</a>	---	---	<a href="#">2</a>	<a href="#">2</a>
<a href="#">Hexachlorobenzene</a>	<a href="#">118741</a>	---	---	<a href="#">0.0000020</a>	<a href="#">0.0000020</a>
<a href="#">Hexachlorobutadiene</a>	<a href="#">87683</a>	---	---	<a href="#">0.0002</a>	<a href="#">0.0002</a>
<a href="#">Hexachlorocyclopentadiene</a>	<a href="#">77474</a>	---	---	<a href="#">0.1</a>	<a href="#">0.1</a>
<a href="#">Hexachloroethane</a>	<a href="#">67721</a>	---	---	<a href="#">0.004</a>	<a href="#">0.004</a>
<a href="#">Ideno(1,2,3-cd) Pyrene</a>	<a href="#">193395</a>	---	---	<a href="#">0.000063</a>	<a href="#">0.000063</a>
<a href="#">Isophorone</a>	<a href="#">78591</a>	---	---	<a href="#">22</a>	<a href="#">79</a>
<a href="#">Methoxychlor</a>	<a href="#">72435</a>	---	---	<a href="#">0.0006</a>	<a href="#">0.0006</a>
<a href="#">Nitrobenzene</a>	<a href="#">98953</a>	---	---	<a href="#">8</a>	<a href="#">20</a>
<a href="#">N-Nitrosodimethylamine</a>	<a href="#">62759</a>	---	---	<a href="#">0.00046</a>	<a href="#">0.14</a>
<a href="#">N-Nitrosodi-n-Propylamine</a>	<a href="#">621647</a>	---	---	<a href="#">0.003</a>	<a href="#">0.02</a>
<a href="#">N-Nitrosodiphenylamine</a>	<a href="#">86306</a>	---	---	<a href="#">0.26</a>	<a href="#">0.27</a>
<a href="#">Pyrene</a>	<a href="#">129000</a>	---	---	<a href="#">1</a>	<a href="#">1</a>
<a href="#">1,2,4,5-Tetrachlorobenzene</a>	<a href="#">95943</a>	---	---	<a href="#">0.0006</a>	<a href="#">0.0006</a>
<a href="#">1,2,4-Trichlorobenzene</a>	<a href="#">120821</a>	---	---	<a href="#">0.002</a>	<a href="#">0.002</a>
<a href="#">Pentachlorobenzene</a>	<a href="#">608935</a>	---	---	<a href="#">0.003</a>	<a href="#">0.003</a>
<a href="#">Aldrin</a>	<a href="#">309002</a>	<a href="#">3.0<sup>0</sup></a>	---	<a href="#">0.000000016</a>	<a href="#">0.000000016</a>
<a href="#">Hexachlorocyclohexane (HCH) Technical</a>	<a href="#">608731</a>	---	---	<a href="#">0.0004</a>	<a href="#">0.0004</a>

<u>Compound</u>	<u>CAS #</u>	<u>Aquatic Life CMC</u>	<u>Aquatic Life CCC</u>	<u>Human Health Criteria, Water &amp; Organisms</u>	<u>Human Health Criteria, Organisms Only<sup>A</sup></u>
<a href="#">alpha-Hexachlorocyclohexane (HCH)</a>	<a href="#">319846</a>	---	---	<a href="#">0.000017</a>	<a href="#">0.000017</a>
<a href="#">beta-Hexachlorocyclohexane (HCH)</a>	<a href="#">319857</a>	---	---	<a href="#">0.00054</a>	<a href="#">0.00055</a>
<a href="#">gamma-Hexachlorocyclohexane (Lindane)</a>	<a href="#">58899</a>	<a href="#">0.95</a>	---	<a href="#">0.17</a>	<a href="#">0.17</a>
<a href="#">Carbaryl</a>	<a href="#">63252</a>	<a href="#">2.1</a>	<a href="#">2.1</a>	---	---
<a href="#">Chlordane</a>	<a href="#">57749</a>	<a href="#">2.4<sup>o</sup></a>	<a href="#">0.0043<sup>o</sup></a>	<a href="#">0.0000086</a>	<a href="#">0.0000086</a>
<a href="#">Chlorophenoxy Herbicide 2,4-D</a>	<a href="#">94757</a>	---	---	<a href="#">70<sup>R</sup></a>	<a href="#">600</a>
<a href="#">Chlorophenoxy Herbicide 2,4,5-TP</a>	<a href="#">93721</a>	---	---	<a href="#">20</a>	<a href="#">20</a>
<a href="#">Chloropyrifos</a>	<a href="#">2921882</a>	<a href="#">0.083</a>	<a href="#">0.041</a>	---	---
<a href="#">p,p'-Dichlorodiphenylchloroethane (DDD)</a>	<a href="#">72548</a>	---	---	<a href="#">0.0000031</a>	<a href="#">0.0000031</a>
<a href="#">p,p'-Dichlorodiphenylchloroethylene (DDE)</a>	<a href="#">72559</a>	---	---	<a href="#">0.000000348</a>	<a href="#">0.000000348</a>
<a href="#">p,p'-Dichlorodiphenyltrichloroethane (DDT)</a>	<a href="#">50293</a>	<a href="#">1.1<sup>o,P</sup></a>	<a href="#">0.001<sup>o,P</sup></a>	<a href="#">0.00000048</a>	<a href="#">0.00000048</a>
<a href="#">Diazinon</a>	<a href="#">333415</a>	<a href="#">0.17</a>	<a href="#">0.17</a>	---	---
<a href="#">Dieldrin</a>	<a href="#">60571</a>	<a href="#">0.24</a>	<a href="#">0.056</a>	<a href="#">0.000000027</a>	<a href="#">0.000000027</a>
<a href="#">alpha-Endosulfan</a>	<a href="#">959988</a>	<a href="#">0.22<sup>o</sup></a>	<a href="#">0.056<sup>o</sup></a>	<a href="#">1</a>	<a href="#">1</a>
<a href="#">beta-Endosulfan</a>	<a href="#">3321365</a>	<a href="#">0.22<sup>o</sup></a>	<a href="#">0.056<sup>o</sup></a>	<a href="#">2</a>	<a href="#">2</a>
<a href="#">Endosulfan Sulfate</a>	<a href="#">1031078</a>	---	---	<a href="#">1</a>	<a href="#">2</a>
<a href="#">Endrin</a>	<a href="#">72208</a>	<a href="#">0.086</a>	<a href="#">0.036</a>	<a href="#">0.0009</a>	<a href="#">0.0009</a>
<a href="#">Endrin Aldehyde</a>	<a href="#">7421934</a>	---	---	<a href="#">0.05</a>	<a href="#">0.05</a>
<a href="#">Heptachlor</a>	<a href="#">76448</a>	<a href="#">0.52<sup>o</sup></a>	<a href="#">0.0038<sup>o</sup></a>	<a href="#">0.00000013</a>	<a href="#">0.00000013</a>
<a href="#">Heptachlor Epoxide</a>	<a href="#">1024573</a>	<a href="#">0.52<sup>o</sup></a>	<a href="#">0.0038<sup>o</sup></a>	<a href="#">0.00000094</a>	<a href="#">0.00000094</a>
<a href="#">Mirex</a>	<a href="#">2385855</a>	---	<a href="#">0.001</a>	---	---
<a href="#">Polychlorinated Biphenyls (PCBs) –Total</a>	<a href="#">1336363</a>	---	<a href="#">0.014<sup>q</sup></a>	<a href="#">0.000003<sup>q</sup></a>	<a href="#">0.000003<sup>q</sup></a>
<a href="#">Toxaphene</a>	<a href="#">8001352</a>	<a href="#">0.73</a>	<a href="#">0.0002</a>	<a href="#">0.000025</a>	<a href="#">0.000025</a>

**FOOTNOTES FOR TABLE 2.**

- A.** Fish tissue residue data may be used to evaluate compliance with the human health criteria, organisms only (HHC<sub>org only</sub>) for highly bioaccumulative pollutants that are expected to accumulate in fish tissue, such as those with a bioaccumulation factor (BAF) greater than 1000 (40 CFR 132.2 and 132.6 Table 6). If detectable water column data and fish tissue data are available the water column data should be used to determine compliance with the criteria.

Fish tissue residue criteria can be derived using the  $HHC_{org\ only}$  and the appropriate BAF, or BCF if no BAF value is available.

For  $HHC_{org\ only}$  which were derived using a BAF the fish tissue residue criterion can be developed using the equation:  $(BAF \times HHC_{org\ only}) \div 1000 =$  fish tissue residue criterion in mg/kg

For  $HHC_{org\ only}$  which were derived using a BCF the fish tissue residue criterion can be developed using the equation:  $(BCF \times HHC_{org\ only}) \div 1000 =$  fish tissue residue criterion in mg/kg

B. These criteria are expressed as total recoverable.

C. The acute and chronic criteria for ammonia are expressed in mg/L as total ammonia nitrogen (mg TAN/L). The criteria are as follows:

**ACUTE CRITERION (CMC):** The acute criterion is a one hour average not to be exceeded more than once in a three year period. In the following equations, temperature (T) is in degrees celsius, and pH is in standard units.

$$CMC = MIN \left( \left( \frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}} \right), \left( 0.7249 \times \left( \frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}} \right) \times (23.12 \times 10^{0.036 \times (20-T)}) \right) \right)$$

**CHRONIC CRITERION (CCC):** The chronic criterion is a 30-day rolling average not to be exceeded more than once in a three year period.

$$CCC = 0.8876 \times \left( \frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}} \right) \times (2.126 \times 10^{0.028 \times (20-MAX(T,7))})$$

In addition to the above equation for the CCC, the highest four day average within the 30-day averaging period should not be more than 2.5 times the CCC more than once in three years on average (e.g.,  $2.5 \times 1.9$  mg TAN/L = 4.8 mg TAN/L at pH 7 and 20°C).

D. The criterion is expressed in terms of dissolved concentration in the water column. The criterion is applied as inorganic arsenic (i.e., arsenic III + arsenic IV). The conversion factor used for arsenic can be found in Endnote A located at the end of these footnotes.

E. The criterion is expressed in terms of dissolved concentration in the water column. The criterion for this metal is expressed as a function of hardness (mg/L) in the water column. To calculate the criteria, use the formula in expanded Endnote A at the end of these footnotes.

F. The criterion is 100 µg/L for total chromium [i.e., Chromium (III) + Chromium (VI)]. The criterion is based on a maximum contaminant level (MCL) under the Safe Drinking Water Act as EPA does not have a recommended human health criterion for chromium III, chromium VI or total chromium.

G. The copper criteria are derived using the biotic ligand model (BLM) based on EPA's *Aquatic Life Ambient Freshwater Quality Criteria – Copper, 2007 Revision*. The CMC is applied as a 24-hour average

concentration that should not be exceeded more than once in three years. The CCC is applied as a 4-day average concentration that should not be exceeded more than once in three years. If sufficient ambient data is not available to use the BLM, the hardness based copper criterion may be used, at the Tribe's discretion, until sufficient data is collected to run the BLM. See Endnote A, located at the end of these footnotes, for the hardness based equation for copper.

- H. This criterion is expressed as total mercury. This value must be used until a site specific water column value is calculated from the methylmercury fish tissue criterion. The water column value must be calculated using the procedures in EPA's *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion*, April 2010 EPA 823-R-10-001.
- I. This criterion is a fish tissue concentration.
- J. EPA is in the process of revising its selenium criteria. In the interim selenium in point source discharges to tribal waters should follow the Tribe's guidance titled *The Kalispel Tribe's Selenium Implementation Guidance for Using the Narrative Toxic Criterion for Selenium*.
- K. This criterion is expressed as  $\mu\text{g}$  free cyanide (CN)/L.
- L. This criterion is expressed as total cyanide (CN)/L.
- M. Assessments of compliance with this criterion shall use the total toxic equivalents (TEQ) of TCDD and dioxin-like compounds (DLC) present in water and fish tissue. The toxicity equivalence factor (TEF) methodology of TCDD and DLC shall be used with TCDD as the index chemical and the consensus using TEF values for TCDD and DLC published in 2005 by the World Health Organization. All sample analysis should be performed using the most sensitive analytical method. When a sample result of TCDD or DLC is reported as detected, but less than the minimum level (or interim minimum level), the sample result should be reported as the value mid-way between the method detection level and the minimum level (or interim minimum level), this value must be used to derive the TEQ for each compound (see *Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2,3,7,8-Tetrachlorodibenzo-p-dioxin and Dioxin-Like Compounds*, December 2010, EPA/100/R 10/005). Definitions for method detection level, minimum level and interim minimum level are the same as the Environmental Protection Agency's definitions for these terms.
- N. Freshwater aquatic life criteria for pentachlorophenol are expressed as a function of pH of the ambient water and are calculated as follows:  $\text{CMC} = \exp(1.005(\text{pH}) - 4.869)$ ; and  $\text{CCC} = \exp(1.005(\text{pH}) - 5.134)$ .
- O. These criteria are based on EPA recommendations issued in 1980 that were derived using guidelines that differed from EPA's *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (1985 Guidelines) which update minimum data requirements and derivation procedures. The CMC for these compounds must not be exceeded at any

time. The CMC may be applied using a one hour averaging period not to be exceeded more than once every three years, if the CMC values given in Table 2 are divided by 2 to obtain a value that is more comparable to a CMC value derived using the 1985 Guidelines. The CCC must not be exceeded based on a 24-hour average.

- P. This criterion applies to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).
- Q. This criterion applies to total PCBs (e.g., the sum of all homolog, all isomer, all congener, or all Aroclor analyses).
- R. This criterion is based on the Maximum Contaminant Level (MCL) for this pollutant under the Safe Drinking Water Act which is more protective than the EPA recommended HHC.

#### **ENDNOTE A – Equations for Hardness Dependent Freshwater Metals Criteria and Conversion Factor Table**

The freshwater criterion for this metal is expressed as dissolved with two significant figures, and is a function of hardness (mg/L) in the water column. Criteria values for hardness are calculated using the following formulas (CMC refers to the acute criterion; CCC refers to the chronic criterion):

$$\text{CMC} = (\exp(m_A * [\ln(\text{hardness})] + b_A)) * CF$$

$$\text{CCC} = (\exp(m_C * [\ln(\text{hardness})] + b_C)) * CF$$

“CF” is the conversion factor used for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column. For ambient waters with a hardness of 400 mg/L or less, the ambient hardness of the surface must be used in the equations. The hardness value used must be consistent with the design discharge conditions in Table 1 for design flows and mixing zones. For ambient waters with a hardness of greater than 400 mg/L, a hardness of 400 mg/L must be used in the equations.

<u>Compound</u>	<u>m<sub>A</sub></u>	<u>b<sub>A</sub></u>	<u>m<sub>C</sub></u>	<u>b<sub>C</sub></u>
<u>Cadmium</u>	<u>1.0166</u>	<u>-3.924</u>	<u>0.7409</u>	<u>-4.719</u>
<u>Chromium III</u>	<u>0.8190</u>	<u>3.7256</u>	<u>0.8190</u>	<u>0.6848</u>
<u>Copper</u>	<u>0.9422</u>	<u>-1.700</u>	<u>0.8545</u>	<u>1.702</u>
<u>Lead</u>	<u>1.273</u>	<u>-1.460</u>	<u>1.273</u>	<u>-4.705</u>
<u>Nickel</u>	<u>0.8460</u>	<u>2.255</u>	<u>0.8460</u>	<u>0.0584</u>
<u>Silver</u>	<u>1.72</u>	<u>-6.59</u>	<u>--</u>	<u>--</u>
<u>Zinc</u>	<u>0.8473</u>	<u>0.884</u>	<u>0.8473</u>	<u>0.884</u>

The conversion factors (CF) below must be used in the equations above for the hardness-dependent metals in order to convert total recoverable metals criteria to dissolved metals criteria. For metals that are not hardness-dependent (i.e. arsenic, chromium VI, selenium, and silver (chronic)) the criterion value associated with the metal in Table 2 already reflects a dissolved criterion based on its conversion factor below.

**Conversion Factor (CF) Table for Dissolved Metals**

<u>Compound</u>	<u>Freshwater</u>	
	<u>Acute</u>	<u>Chronic</u>
<u>Arsenic</u>	<u>1.000</u>	<u>1.000</u>
<u>Cadmium</u>	<u>1.136672-[(ln hardness)(0.041838)]</u>	<u>1.101672-[(ln hardness)(0.041838)]</u>
<u>Chromium III</u>	<u>0.316</u>	<u>0.860</u>
<u>Chromium VI</u>	<u>0.982</u>	<u>0.962</u>
<u>Copper</u>	<u>0.960</u>	<u>0.960</u>
<u>Lead</u>	<u>1.46203-[(ln hardness)(0.145712)]</u>	<u>1.46203-[(ln hardness)(0.145712)]</u>
<u>Nickel</u>	<u>0.998</u>	<u>0.997</u>
<u>Selenium</u>	<u>0.996---</u>	<u>0.922</u>
<u>Silver</u>	<u>0.85</u>	<u>0.85---</u>
<u>Zinc</u>	<u>0.978</u>	<u>0.986</u>

**Table 3. Nutrients**

<u>Compound</u>	<u>Criteria</u>
<u>Total Phosphorus in river and streams (April-October)</u>	<u>10 µg/L as P, expressed as a 30 day average</u>

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## 11) Beneficial Water Uses to be Protected in Waters of the Reservation

Water quality in Waters of the Reservation shall be managed to protect the recognized beneficial uses listed in Table 74. This table may be revised in the future to include additional beneficial uses as long as existing uses are protected and after full satisfaction of the public participation. At the boundary between two waters of different classifications, the water quality standards for the more stringent shall prevail.

Table 74. Designated Beneficial Uses of Waters of the Reservation

Designated Use	Calispell Creek	Pend Oreille River	Cee Cee Ah Creek
<u>Cutthroat and Brown Trout Spawning, Incubation, and Rearing</u>			X
Adult Salmonid Migration	X	X	X
Primary Contact Recreation	X	X	X
Agricultural Water Supply	X	X	X
Wildlife Habitat, Fishing and Hunting	X	X	X
Ceremonial and Cultural Use	X	X	X
Aesthetic Quality	X	X	X

## 12) General Water Use and Criteria

The following criteria shall apply to the designated uses of surface waters on the Kalispel Indian Reservation

### 12(a) Cutthroat and Brown Trout Spawning, Incubation, and Rearing

These criteria shall apply to waters used for Cutthroat and Brown Trout spawning, incubation, and rearing~~between October 1 and March 1 although site-specific designations may apply at other times.~~

1) Temperature criteria shall not be exceeded in each of the spawning/incubation and juvenile rearing seasons;

a) During the period October 1<sup>st</sup> through May 31<sup>st</sup>, temperature shall not exceed 9°C as a moving 7-day average of the daily maximum temperatures with no single daily maximum temperature greater than 13°C.

b) During the period June 1<sup>st</sup> through September 30<sup>th</sup>, temperature shall not exceed 16°C as a moving 7-day average of the daily maximum temperatures with no single daily maximum temperature greater than 17.6°C.

When natural background conditions prevent the attainment of the numeric temperature criteria, human-caused conditions and activities considered cumulatively can increase temperature levels by only an additional 0.253°C. The spatial and temporal characteristics of the natural thermal regime, including thermal refugia, must be maintained to the maximum extent practicable at all times.

2) Dissolved oxygen shall not fall below 8 mg/L at any time. When natural

background conditions prevent attainment of the numeric dissolved oxygen criteria, all human-caused conditions and activities considered cumulatively can lower dissolved oxygen levels by only an additional 0.2mg/L.

3) Turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10% increase in turbidity when the background turbidity is more than 50 NTU.

4) Total dissolved gas shall not exceed 110% of saturation at any point of sample collection.

5) pH shall 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.

### **12(b) Adult Salmonid Migration**

These criteria apply to waters not used for native char or cutthroat trout spawning, incubation, or rearing but are used for adult salmonid migration and apply at all times.

1) Temperature shall not exceed 18°C as a moving 7-day average of the daily maximum temperatures with no single daily maximum temperature greater than 20.5°C. When natural background conditions prevent the attainment of the numeric temperature criteria, human-caused conditions and activities considered cumulatively can increase temperature levels by only an additional 0.25°C. The spatial and temporal characteristics of the natural thermal regime, including thermal refugia, must be maintained to the maximum extent practicable at all times.

2) Average daily dissolved oxygen concentrations shall not fall below 8 mg/L in any single sample. When natural background conditions prevent attainment of the numeric dissolved oxygen criteria, no human-caused condition or activity shall result in a decrease of more than 0.2 mg/L of dissolved oxygen.

3) Turbidity shall not exceed 5 NTU over background turbidity when the natural background turbidity is 50 NTU or less, or have more than a 20% increase in turbidity when the natural background turbidity is more than 50 NTU.

4) Total dissolved gas shall not exceed 110% of saturation in any single sample.

5) pH shall be within the range of 6.5 to 9.0 with no human-caused variation within the above range of more than 0.5 units.

### **12(c) Primary Contact Recreation**

These criteria apply to waters used for swimming and wading.

1) *E.coli* shall not exceed a geometric mean of 126 colony forming units/100mL with no single sample exceeding 235 colony forming units/100mL.

2) Livestock, pet, human, commercial, and industrial wastes are not allowed to be drained or discharged into Waters of the Reservation without control or treatment with best management practices approved by the department and sufficient to meet all criteria.

### **12(d) Agricultural Water Supply**

These criteria apply to source waters at the initial point of diversion from Waters of the Reservation and do not apply within systems designed for drainage water reuse.

1) Toxic, radioactive, or deleterious materials shall be below levels which have the potential either singularly or in combination to interfere with use as source water for domestic and municipal

water supplies, or adversely affect public health as determined by the department.

2) Livestock, pet, human, commercial, and industrial wastes are not allowed to be drained or discharged into Waters of the Reservation without control or treatment with best management practices approved by the department and sufficient to meet all criteria. No wastewater source is permitted to cause a violation in Kalispel Tribal Water Quality Standards.

3) Electrical conductivity shall not exceed 700 microsiemens/centimeter.

4) Bicarbonate shall not exceed 300 milligrams/liter.

5) Total suspended solids shall not exceed 75 milligrams/liter.

6) pH shall be within the range 6.54 and 9.0 standard units.

#### **12(e) Wildlife Habitat, Fishing and Hunting**

1) Toxic, radioactive, or deleterious materials shall be below levels which have the potential either singularly or in combination to interfere with use as a source water for domestic and municipal water supplies, or adversely affect public health as determined by the department.

2) Livestock, pet, human, commercial, and industrial wastes are not allowed to be drained or discharged into Waters of the Reservation without control or treatment with best management practices approved by the department and sufficient to meet all criteria.

3) Temperature shall not exceed 18°C as a moving 7-day average of the daily maximum temperatures with no single daily maximum temperature greater than 20.5°C. When natural background conditions prevent the attainment of the numeric temperature criteria, human-caused conditions and activities considered cumulatively can increase temperature levels by only an additional 0.253°C. The spatial and temporal characteristics of the natural thermal regime, including thermal refugia, must be maintained to the maximum extent practicable at all times.

4) pH shall be within the range of 6.5 to 9.0 with no human-caused variation within the above range of more than 0.5 units.

#### **12(f) Ceremonial and Cultural Use**

These criteria apply to waters used for consumption, swimming, ~~sweat bathing, and~~ wading, and any other ceremonial or cultural use.

1) *E.coli* shall not exceed a geometric mean of 126 colony forming units/100mL with no single sample exceeding 235 colony forming units/100mL.

2) Livestock, pet, human, commercial, and industrial wastes are not allowed to be drained or discharged into Waters of the Reservation without control or treatment with best management practices approved by the department and sufficient to meet all criteria. No wastewater source is permitted to cause a violation in Kalispel Tribal Water Quality Standards.

3) Toxic, radioactive, or deleterious materials shall be below levels which have the potential either singularly or in combination to interfere with use as source water for domestic and municipal water supplies, or adversely affect public health as determined by the department.

#### **12(g) Aesthetic Qualities**

All waters within the Reservation, including those within mixing zones, shall be free from substances, attributable to wastewater discharges or other pollutant sources, that:

- i) settle to form objectionable deposits:
- ii) float as debris, scum, oil, or other matter forming nuisances:
- iii) produce objectionable color, odor, taste, or turbidity;
- iv) cause injury to, are toxic to, or produce adverse physiological responses in humans, animals, or plants; or
- v) produce undesirable or nuisance aquatic life

### **13) Special Resource Water Class**

These are waters that comprise a special and unique resource to the Reservation and include wetlands, ephemeral streams, headwater streams and all other unclassified waters not intentionally created as waterways or waterbodies. Physical and biological conditions of these waters shall be maintained in a natural state. Aesthetic Qualities criteria and Toxic Substances criteria apply to these waters at all times. Additionally, the following criteria apply at all times:

- 1) Toxic, radioactive, or deleterious materials shall be below levels which have the potential either singularly or in combination to interfere with use as source water for domestic and municipal water supplies, or adversely affect public health as determined by the department.
- 2) Livestock, pet, human, commercial, and industrial wastes are not allowed to be drained or discharged into Waters of the Reservation without control or treatment with best management practices approved by the department and sufficient to meet all criteria.