

SPOKANE TRIBE OF INDIANS

SURFACE WATER QUALITY STANDARDS

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## 1. INTRODUCTION

(1) The Executive Order of President Hayes in 1881 (I Kappler 924) confirmed that the Spokane Indian Reservation was reserved for the Spokane Tribe of Indians for the purpose of providing a permanent homeland for the Spokane people. Pursuant to that purpose, the Tribe's reserved water rights and the Constitution of the Spokane Tribe of Indians, the Spokane Business Council hereby establishes these water quality standards to apply to all surface waters on lands within the constitutional jurisdiction of the Spokane Tribe of Indians. These standards shall provide a mechanism for managing and regulating the quality and use of said waters by establishing goals for specific water bodies.

(2) These standards have been adopted pursuant to Articles II, V, VIII, IX and XI of the Constitution of the Spokane Tribe. These standards shall serve to protect the public health, safety and welfare, and to enhance the quality of water on the Spokane Indian Reservation.

(3) The purposes of these water quality standards are: to restore, maintain and protect the chemical, physical, biological, and cultural integrity of the surface waters of the Spokane Indian Reservation; to promote the health, safety, welfare, and economic well-being of the Spokane Tribe, its people, and all the residents of the Spokane Indian Reservation; to achieve a level of water quality that provides for the protection and propagation of fish and wildlife, for recreation in and on the water, and for all existing and designated uses of the water; to promote the holistic watershed approach to management of the Reservation's water; and, to provide for protection of threatened and endangered species.

(4) These standards are designed to establish the uses for which the surface waters of the Spokane Tribe shall be protected, to prescribe narrative and numeric water quality criteria to sustain the designated uses, to protect existing water quality, and to prevent water quality degradation.

(5) The water use and quality criteria set forth herein are established in general conformance with water uses of the surface waters of the Spokane Indian Reservation and in consideration of the natural water quality potential and limitations of the same.

(6) The Surface Water Quality Standards were first adopted by

the Spokane Business Council on December 17, 1999, by Resolution 2000-105. As a result of public comments received after hearings were held on February 10, 2000, the standards were revised on June 19, 2000, by Resolution 2000-105. To address further comments these standards were again revised on February 13, 2001, by Resolution 2001-144. These revised standards supersede and replace the June 19, 2000 standards. These standards shall become effective on the date of adoption, and shall be applicable and in force, to the full extent of the law, until repealed or replaced by the Spokane Business Council.

## **2. DEFINITIONS**

The following definitions shall apply in the interpretation of these standards:

"Acute toxicity" means a relatively short-term lethal or other adverse effect to an organism caused by pollutants, and usually defined as occurring within 4 days for fish and large invertebrates and shorter times for smaller organisms.

"Appropriate reference site or region" means a site on the same waterbody or within the same basin or eco-region that has similar fish and wildlife habitat conditions and which is expected to represent the best attainable water quality and biological community within the area(s) of concern.

"Aquatic species" or "aquatic organism" means any plant or animal which lives at least part of its life cycle in water.

"Biological assessment" is an evaluation of the biological condition of a water body using surveys of aquatic community structure, function, diversity, presence or absence, or other direct measurements of resident aquatic species and other biota in surface waters.

"Biological criteria" means numerical values or narrative expressions that describe the biological integrity or aquatic communities inhabiting waters of a given designated aquatic life use. Biological criteria serve as an index of aquatic community health.

"Carcinogen" means any substance or agent that produces or tends to produce cancer in humans. For implementation of this chapter, the term carcinogen will apply to substances on the U.S. EPA lists of A (known human), B (probably human), and C (possible human)

carcinogens.

"Chronic toxicity" means a fairly long-term adverse effect to an organism (when compared to the life span of the organism) caused by or related to changes in feeding, growth, metabolism, reproduction, a pollutant, genetic mutation, etc. Short-term test methods for detecting chronic toxicity may be used.

"Constructed wetlands" means those wetlands intentionally created from non-wetland sites for the sole purposes of wastewater or stormwater treatment.

"Cultural water use" means the use of waters to support and maintain the way of life of the Spokane Tribal People, including, but not limited to: use for instream flow, habitat for fisheries and wildlife, and preservation of habitat for berries, roots, medicines and other vegetation significant to the values of the Spokane Tribal People.

"CWA" or "Clean Water Act" means the federal Clean Water Act (33 U.S.C. 1251 *et seq.*), as amended.

"Department" means the Spokane Tribal Water Resources Program in the Spokane Tribal Natural Resources Department.

"Designated use" means a use that is specified in these water quality standards as a goal for a water body segment, regardless of whether it currently is being attained or whether an existing use is identified for that segment.

"E. coli" means *Escherichia coli*, a species of Gram-negative bacteria normally present in the intestines of human beings and all vertebrates.

"Engineered wetlands" means wetlands intentionally altered from their natural condition for the purpose of enhancing the wetlands' ability to filter wastewater or storm water.

"EPA" means the United States Environmental Protection Agency.

"Existing uses" means all uses actually attained in the water body on or after November 28, 1975, whether or not they are stated explicitly as designated uses in these water quality standards or presently exist.

"Geometric mean" means either the  $n$ th root of a product of  $n$  factors, or the antilogarithm of the arithmetic mean of the

logarithms of the individual sample values.

"g/day" means grams per day, as used to calculate human consumption of organisms to determine toxic pollutant criteria.

"Hardness" means a measure of the calcium and magnesium salts present in water. For the purposes of this chapter, hardness is measured in milligrams per liter and expressed as calcium carbonate (CaCO<sub>3</sub>).

"Intermittent stream" means a waterway which flows only at certain times of the year or does not flow continuously.

"Mean detention time" is the mean amount of time that water remains in a basin. The time is computed by dividing a reservoir's mean annual minimum total storage by the thirty-day, ten-year, low flow from the reservoir.

"mg/L" means milligrams of solute per liter of solution.

"Natural conditions" means surface water quality that was present before human-caused pollution. When assessing natural conditions in the headwaters of a disturbed watershed, it may be necessary to use an appropriate reference site.

"ppm" means parts per million.

"pCi/l" means picocuries per liter.

"pH" means the negative logarithm of the hydrogen ion activity.

"Point source" means any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, seep, spring, channel, sewer, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.

"Pollutant" includes, but is not limited to, dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, mining, milling, municipal, and agricultural waste discharged into water.

"Pollution" includes such contamination or other alteration of the physical, chemical or biological properties of any surface waters

of the tribe, including change in temperature, taste, color turbidity, or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any surface waters of the tribe as will or is likely to create a nuisance or impair any designated use or existing use of such waters.

"Primary contact ceremonial and spiritual" water use means activities involving Native American religious, spiritual and cultural practices which may involve primary and secondary contact with water, and immersion and intentional or incidental ingestion of water or steam. Such use also requires protection of sensitive and valuable aquatic life and riparian habitat.

"Primary contact recreation" means activities in which a person would have direct contact with water to the point of complete submergence, including but not limited to ceremonial, spiritual and cultural uses, and skin diving, swimming and water skiing.

"Process wastewater" means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

"Receiving waters" means any water source or water body that receives treated or untreated discharges.

"Reservation" means all lands and waters within the exterior boundaries of the Spokane Indian Reservation, as set forth by Executive Order in 1881, and any extensions thereof, and all Spokane Tribal and allotted Indian lands outside the exterior boundaries of the Spokane Indian Reservation.

"Resident aquatic community" or "aquatic life" means the various aquatic species expected to exist in a particular habitat when water quality standards for a specific eco-region, basin, or water body are met. This shall be established by accepted biomonitoring techniques.

"Secondary contact recreation" means activities, including but not limited to wading or fishing, in which a person's water contact would be limited, to the extent that bacterial infections or chemical exposures to eyes, ears, respiratory, or digestive systems or urogenital areas would normally be avoided.

"Seep" means water issuing from geologic material at a rate that is slightly greater than the rate of evaporation resulting in non-flowing conditions.

"Spring" means water issuing from geologic material at a rate that is greater than the rate of evaporation resulting in flowing or standing conditions.

"Standards" means the Spokane Tribal Surface Water Quality Standards as set forth herein.

"Stormwater" means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, pipes, and other features of a stormwater drainage system into a defined surface water body or a constructed infiltration facility.

"Surface waters of the Tribe" includes lakes, rivers, ponds, streams (including intermittent streams), wetlands, inland waters and all other surface waters and water sources of the Reservation.

"Temperature" means water temperature expressed in degrees Celcius (°C).

"Threatened or endangered species" or "listed species" means any species of fish, wildlife or plant which has been determined to be endangered or threatened under Section 4 of the federal Endangered Species Act. Listed species are found in 50 CFR 17.11-17.12.

"Toxicity" means acute or chronic toxicity.

"Toxicity test" means a test using selected organisms to determine the acute or chronic effects of a chemical pollutant or whole effluent.

"Toxic pollutants" means those pollutants, or combinations of pollutants, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to EPA or the Department, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in exposed organisms or their offspring.

"Tribal Business Council" means the governing body of the Spokane Tribe of Indians exercising those powers authorized by the Spokane Tribal Constitution of June 27, 1951, as amended.

"Tribe" means the Spokane Tribe of Indians.



"True color" means the color of water from which turbidity has been removed.

"Turbidity" means a condition in water or discharges caused by the presence of suspended matter resulting in the scattering and absorption of light rays, as measured in nephelometric turbidity units (ntu's).

"ug/L" means micrograms per liter.

"Waste" includes sewage, industrial, municipal, household or business wastes, and all other liquid, gaseous, solid, radioactive, or other substances which will or may cause pollution or tend to cause pollution of any water body.

"Wastewater" means any water which comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

"Water quality" means the chemical, physical, biological, and cultural characteristics of a water body or segment of a water body.

"Wetland" means any area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, riparian zones and similar areas.

"Wildlife habitat" means the surface waters of the tribe used by, or that directly or indirectly provide support to, fish, other aquatic life, and wildlife, for any life history stage or activity.

### **3. GENERAL CONDITIONS**

The following conditions shall apply to the water quality criteria and classifications set forth herein.

(1) All surface waters shall be free from pollutants and other materials in concentrations or combinations that do not protect the most sensitive existing or designated use of the water body.

(2) Whenever the natural conditions of any specific surface waters of the Reservation are of a lower quality than the criteria assigned to waters typical of that class, the Department may determine that the natural conditions shall constitute the water quality criteria.

(3) At the boundary between surface waters of different classifications, the more stringent water quality criteria shall prevail. If existing or designated uses of more than one resource are affected, the most protective criteria shall apply.

(4) The Department may revise criteria on a Reservation-wide or waterbody-specific basis as needed to protect aquatic life and human health and other existing and designated uses and to increase the technical accuracy of the criteria being applied. The Department shall formally adopt any revised criteria following public review and comment, and shall submit revisions to EPA for review and approval.

(5) The analytical testing methods used to measure or otherwise evaluate Water Quality Standards shall to the extent practicable, be in accordance with the most recent editions of "Standard Methods for the Examination of Water and Wastewater," published by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, and "Methods for Chemical Analysis of Water and Wastes," published by the EPA, and other or superseding methods published and/or approved by the Department following consultation with and concurrence of the EPA.

#### **4. ANTIDegradation Policy**

(1) The existing instream beneficial uses of each water body and the level of water quality necessary to protect those uses shall be maintained and protected.

(2) Where the quality and total maximum daily loads of the waters are at higher qualities than necessary to support propagation of fish, shellfish and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the Department finds, after full satisfaction of the intergovernmental coordination and public participation required by law, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the Department shall assure water quality adequate to protect existing uses fully. Further, the Department shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

(3) Where high quality waters constitute an outstanding national or Tribal resource, or waters of exceptional recreational or ecological significance, the water quality and uses of those water bodies shall be maintained and protected.

(4) In those cases where potential water quality impairments associated with thermal discharge are involved, the antidegradation policy and implementing method shall be consistent with Section 316 of the Clean Water Act, as amended (33 U.S.C. § 1326).

#### **5. Narrative Criteria**

All surface waters of the Reservation shall be free from pollutants and other materials attributable to point source discharges, nonpoint sources, or instream activities in accordance with the following:

(1) Floating Solids, Oil and Grease: All waters shall be free from visible oils, scum, foam, grease, and other floating and suspended materials of a persistent nature resulting from other than natural causes.

(2) Color: True color-producing materials resulting from

other than natural causes shall not create an aesthetically undesirable condition; nor should color inhibit photosynthesis or otherwise impair the existing and designated uses of the water.

(3) Odor and Taste: Materials from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the existing and designated uses of the water.

(4) Nuisance Conditions: Nutrients or other materials from anthropogenic causes shall not be present in concentrations which will produce objectionable algal densities or nuisance aquatic vegetation, result in a dominance of nuisance species, or otherwise cause nuisance conditions.

(5) Turbidity: Turbidity shall not be at a level to threaten or impair existing and designated uses or aquatic biota.

(6) Bottom Deposits: All surface waters of the tribe shall be free from anthropogenic materials that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical and chemical properties of the water or the bottom sediments.

(7) In issuing permits, Tribal authorities shall attempt to insure that to the extent practicable, all waters shall be free from soil particles resulting from erosion of land involved in earthwork, such as construction of public works, highways, or commercial or industrial developments, or the cultivation and management of agricultural or forested lands, or resulting from discharges from consumptive or nonconsumptive uses of water following surface water diversions or ground water pumping.

## **6. TOXIC POLLUTANTS**

(1) Toxic pollutants shall not be introduced into surface waters of the Reservation in concentrations which have the potential either singularly or cumulatively to adversely affect existing and designated 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 may employ or require chemical testing, acute and/or chronic toxicity testing, and biological assessments,

as appropriate, to evaluate compliance with subsection (1) of this section. Where necessary, the Department may establish controls to ensure that aquatic communities and the existing and designated beneficial uses of waters are being fully protected.

(3) Criteria for toxic pollutants and other materials not currently listed in Table 1 shall be determined with consideration of U.S. EPA Quality Criteria for Water, 1986, as updated, and other relevant information as appropriate.

(4) Risk-based criteria for carcinogenic materials shall be applied such that the upper-bound excess cancer risk is less than or equal to one in one million, which means the probability of one excess cancer per one million people exposed.

(5) The aquatic organism consumption rate utilized in determining the human health criteria shall be 86.3 g/day. This figure does not reflect the actual consumption rate typical of the Spokane Tribe of Indians, but has been used for the limited purpose of establishing these Surface Water Quality Standards based on current EPA guidance (63 F.R. 43756). This rate may be modified to reflect consumption rate analysis specific to the Spokane Tribe.

(6) The guidelines set forth in 40 CFR Part 136 shall be used as guidance for analytical methodologies

(7) The criteria in Table 1 shall be applied to all surface waters of the tribe for the protection of aquatic life and human health. The concentration for each compound listed in Table 1 is a criterion for aquatic life or human health protection. Selecting values for regulatory purposes will depend on the most sensitive beneficial use to be protected and the level of protection necessary for aquatic life and human health as specified within Table 1. Application for a reduction in the list of compounds or elements must be based on proof that one or more of the proposed compounds are not of concern. Authorization of such a reduction is at the discretion of the Department. All concentrations, except asbestos, are micrograms per liter (ug/L).

**Table 1. Water Quality Criteria for Toxic Pollutants (ug/l)**

Compound	Carcin -ogen?	Acute (a) Criteria	Chronic (b) Criteria	Water & (c) Organisms	Organisms Only (d)
Acenaphthene	n			1.84E+02	2.01E+02
Acrolein	n			5.31E+01	5.89E+01
Acrylonitrile	y			2.82E-02	5.01E-02
Aldrin (e)	y	3.00E+00	1.90E-03	1.02E-05	1.02E-05
Aluminum (pH 6.5 - 9.0)	n	7.50E+02	8.70E+01	----	----
Ammonia (f,g)	n	24.10	4.15	----	----
Anthracene	n			4.58E+03	8.11E+03
Antimony	n			1.34E+01	3.24E+02
Arsenic (h)	y	3.40E+02	1.50E+02	6.90E-03	1.05E-02
Asbestos (i)	y			7 MFL	----
Barium (l)	n			1.0E+3	----
Benz(a)anthracene	y			2.09E-03	3.70E-03
Benzene	y			9.86E-01	5.38E+00
Benzidine	y			3.19E-05	4.03E-05
Benzo(a)pyrene	y			2.09E-03	3.70E-03
3,4-Benzo(b)fluoranthene	y			2.09E-03	3.70E-03
Benzo(k)fluoranthene	y			2.09E-03	3.70E-03
alpha BHC	y			8.41E-04	9.90E-04
beta BHC	y			2.94E-03	3.47E-03
gamma BHC (e)	y	9.50E-01	8.00E-02	3.99E-03	4.71E-03
Bis(2-chloroethyl) Ether	y			2.45E-02	1.07E-01
Bis(2-chloroisopropyl) Ether	n			1.27E+03	1.31E+04
Bis(2-chloromethyl) Ether	y			1.55E-04	5.85E-03
Bis(2-ethylhexyl)phthalate	y			3.78E-01	4.46E-01
Bromoform	y			3.81E+00	2.74E+01
Butylbenzyl phthalate	n			3.71E+02	3.92E+02
Cadmium (j)	n	3.70E+00	1.03E+00	----	----
Carbon tetrachloride	y			1.49E-01	3.33E-01
Chlordane (e)	y	2.40E+00	4.30E-03	4.42E-05	4.43E-05
Chloride	n	8.60E+05	2.30E+05	----	----
Chlorine	n	1.90E+01	1.10E+01	----	----
Chlorobenzene	n			4.85E+02	1.57E+03
Chlorodibromomethane	y			3.59E-01	2.57E+00
Chloroform	y			4.94E+00	3.55E+01
2-Chloronaphthalene	n			2.88E+02	3.21E+02
2-Chlorophenol	n			2.58E+01	3.03E+01
Chlorpyrifos	n	8.30E-02	4.10E-02	----	----
Chromium (Hex, k)	n	1.50E+01	1.00E+01	----	----
Chromium (Tri)	n	5.49E+02	7.41E+01	----	----
Chrysene	y			2.09E-03	3.70E-03
Copper (j, l)	n	1.34E+01	8.96E+00	1.3E+3	----
Cyanide	n	2.20E+01	5.20E+00	6.71E+02	1.62E+04
4,4'-DDD	y			6.30E-05	6.31E-05

**Table 1. Water Quality Criteria for Toxic Pollutants (Continued)**

Compound	Carcin -ogen?	Acute (a) Criteria	Chronic (b) Criteria	Water & (c) Organisms	Organisms Only (d)
4,4'-DDE	y			4.45E-05	4.45E-05
4,4'-DDT (e)	y	1.10E+00	1.00E-03	4.45E-05	4.45E-05
Demeton	n		1.00E-01	----	----
Dibenz(a,h)anthracene	y			2.09E-03	3.70E-03
Dibutyl phthalate	n			7.23E+02	9.11E+02
1,2-(o)Dichlorobenzene	n			9.27E+02	1.31E+03
1,3-(m)Dichlorobenzene	n			1.38E+02	1.95E+02
1,4-(p)Dichlorobenzene	n			1.38E+02	1.95E+02
3,3-Dichlorobenzidine	y			5.38E-03	5.78E-03
Dichlorobromomethane	y			4.86E-01	3.49E+00
Dichlorodifluoromethane	n			6.03E+03	4.33E+04
1,2-Dichloroethane	y			3.66E-01	7.43E+00
1,2-trans-Dichloroethylene	n			6.55E+02	1.03E+04
1,1-Dichloroethylene	y			4.70E-02	2.41E-01
2,4-Dichlorophenol	n			3.81E+01	5.98E+01
1,2-Dichloropropane	n			4.48E-01	2.97E+00
1,3-Dichloropropylene	n			9.70E+00	1.27E+02
Dieldrin (e)	y	2.40E-01	1.90E-03	1.08E-05	1.09E-05
Diethyl phthalate	n			6.75E+03	8.89E+03
2,4-Dimethylphenol	n			1.39E+02	1.73E+02
Dimethyl phthalate	n			1.37E+05	2.25E+05
2,4-Dinitrophenol	n			6.57E+01	1.08E+03
2,4-Dinitrotoluene	y			9.57E-02	6.79E-01
2,3,7,8-TCDD (Dioxin)	y			1.04E-09	1.04E-09
1,2-Diphenylhydrazine	y			2.11E-02	4.07E-02
alpha Endosulfan (e)	n	2.20E-01	5.60E-02	1.66E+01	1.80E+01
beta Endosulfan (e)	n	2.20E-01	5.60E-02	1.66E+01	1.80E+01
Endosulfan sulfate	n			1.66E+01	1.80E+01
Endrin (e)	n	8.60E-02	2.30E-03	6.09E-02	6.13E-02
Endrin aldehyde	n			6.09E-02	6.13E-02
Ethylbenzene	n			1.34E+03	2.16E+03
Fluoranthene	n			2.77E+01	2.82E+01
Fluorene	n			6.10E+02	1.08E+03
Guthion	n		1.00E-02	----	----
Heptachlor	y	0.52e	3.80E-03	1.61E-05	1.61E-05
Heptachlor epoxide	y	0.52e	3.80E-03	7.94E-06	7.96E-06
Hexachlorobenzene	y			5.82E-05	5.83E-05
Hexachlorobutadiene	y			4.01E-01	3.74E+00
Hexachlorocyclopentadiene	n			2.06E+02	1.31E+03
Hexachloroethane	y			5.26E-01	6.67E-01
Indeno(1,2,3-cd)pyrene	y			2.09E-03	3.70E-03
Iron (l)	n		1.00E+03	3.0E+2	----
Isophorone	y			3.10E+01	1.95E+02

**Table 1. Water Quality Criteria for Toxic Pollutants (Continued)**

Compound	Carcin -ogen?	Acute (a) Criteria	Chronic (b) Criteria	Water & (c) Organisms	Organisms Only (d)
Lead (j)	n	6.46E+01	2.52E+00	----	----
Malathion	n		1.00E-01	----	----
Manganese	n			----	----
Mercury (m)	n	1.40E+00	1.20E-02	1.10E-02	1.10E-02
Methoxychlor (l)	n		3.00E-02	1.0E+2	----
Methyl bromide	n			4.22E+01	3.03E+02
2-Methyl-4,6-Dinitrophenol	n			1.10E+01	5.75E+01
Methylene chloride	y			4.49E+00	1.20E+02
Mirex	n		1.00E-03	----	----
Nickel (j)	n	4.68E+02	5.20E+01	2.31E+02	3.45E+02
Nitrobenzene	n			1.56E+01	1.40E+02
N-Nitrosodimethylamine	y			6.86E-04	6.12E-01
N-Nitrosodi-n-propylamine	y			4.77E-03	1.03E-01
N-Nitrosodiphenylamine	y			1.04E+00	1.22E+00
N-Nitrosopyrrolidine	y			1.66E-02	7.02E+00
Parathion	n	6.50E-02	1.30E-02	----	----
PCB Total	y	2.00E+00	1.40E-02	3.37E-06	3.38E-06
Pentachlorobenzene	n			3.02E-01	3.05E-01
Pentachlorophenol (n)	y	2.03E+01	1.28E+01	1.98E-01	6.14E-01
Phenol	n			1.98E+04	3.48E+05
Pyrene	n			4.58E+02	8.11E+02
Selenium	n	2.00E+01	5.00E+00	1.45E+02	8.45E+02
Silver (j)	n	3.45E+00		----	----
Sulfide - Hydrogen Sulfide	n		2.00E+00	----	----
1,1,2,2-Tetrachloroethane	y			1.44E-01	8.11E-01
Tetrachloroethylene	y			3.79E-01	6.66E-01
Thallium	n			3.88E-01	4.63E-01
Toluene	n			4.79E+03	1.52E+04
Toxaphene	y	7.30E-01	2.00E-04	5.62E-05	5.63E-05
Tributyltin	n	4.60E-01	0.063	1.74E-02	1.74E-02
1,2,4-Trichlorobenzene	n			5.91E+01	7.12E+01
1,1,2-Trichloroethane	y			5.14E-01	3.16E+00
Trichloroethylene	y			1.91E+00	6.07E+00
2,4,6-Trichlorophenol	y			4.26E-01	4.92E-01
Vinyl chloride	y			1.91E+00	3.98E+01
Zinc (j)	n	1.14E+02	1.05E+02	3.47E+03	5.18E+03



#### FOOTNOTES FOR TABLE 1

a. Acute criteria: EPA CWA § 304(a) Criteria Maximum Concentration (CMC). The threshold value at or below which there should be no unacceptable effects to freshwater or marine aquatic organisms and their uses if the one-hour average concentration does not exceed that CMC value more than once every three years on average.

b. Chronic criteria: EPA CWA § 304(a) Criteria Continuous Concentration (CCC). The threshold value at or below which there should be no unacceptable effects to freshwater or marine aquatic organisms and their uses if the four-day average concentration does not exceed that CCC value more than once every three years on the average.

c. Water and Organisms: Values represent the maximum ambient water concentration for consumption of both contaminated water and fish or other aquatic organisms.

d. Organisms Only: Values represent the maximum ambient water concentration for consumption of fish or other aquatic organisms.

e. The acute values shown are final acute values (FAV) which by the EPA Guidelines as noted in the Federal Register, 45 FR 79318 Nov. 28, 1980 are instantaneous values, as contrasted with a CMC which is a one-hour average.

f. Values for Chronic Criterion are pH, temperature and lifestage dependent as described in Fed. Reg. 64(245):71975. The criteria employed for all waters of the reservation are expected to protect all stages of salmonid development including early life stages. The following equation is used to derive such criteria for chronic exposure:  $\text{Chronic criteria} = \{ [0.0577 / (1 + 10^{7.688 - \text{pH}})] + [2.487 / (1 + 10^{\text{pH} - 7.688})] \} * \text{MIN}(2.85, 1.45 * 10^{0.028 * (25 - T)})$ . Values listed in Table 1 are derived for pH of 7 and temperature of 20°C.

g. Values for Acute Criterion are pH and species dependent as described in Fed. Reg. 64(245):71975. The criteria employed for all waters of the reservation are expected to protect all stages of salmonid development including early life stages. The following equation is used to derive such criteria for acute exposure:  $\text{Acute criteria} = 0.275 / (1 + 10^{7.204 - \text{pH}}) + 39.0 / (1 + 10^{\text{pH} - 7.204})$ . Values listed in Table 1 are derived for pH of 7.

h. The aquatic life criteria refer to the trivalent form only. The human health criteria refer to the inorganic form only.

i. MFL = Million fibers per liter, with fiber length >10 microns.

j. Freshwater aquatic life criteria for these metals are measured as dissolved fraction and are expressed as a function of total hardness (mg/l CaCO<sub>3</sub>) according to the following equations. All other analytes for all other uses are measured as total recoverable unless otherwise specified. The factors for the equations are provided in the following matrix. Values in the above table correspond to a hardness of 100 mg/l.

Equations for calculating metals criteria

**Cadmium (i)**

acute  $(1.136672 - (\text{LN}(\text{hardness}) * 0.041838)) * \text{EXP}(1.128 * \text{LN}(\text{hardness}) - 3.828)$   
chronic  $(1.101672 - (\text{LN}(\text{hardness}) * 0.041838)) * \text{EXP}(0.7852 * \text{LN}(\text{hardness}) - 3.49)$

**Chromium (Tri; j)**

acute  $(0.316) * \text{EXP}(0.819 * \text{LN}(\text{hardness}) + 3.688)$   
chronic  $(0.86) * \text{EXP}(0.819 * \text{LN}(\text{hardness}) + 0.6848)$

**Copper (j)**

acute  $(0.96) * \text{EXP}(0.9422 * \text{LN}(\text{hardness}) - 1.7)$   
chronic  $(0.96) * \text{EXP}(0.8545 * \text{LN}(\text{hardness}) - 1.702)$

**Lead (j)**

acute  $(1.46203 - (\text{LN}(\text{hardness}) * 0.145712)) * \text{EXP}(1.273 * \text{LN}(\text{hardness}) - 1.46)$   
chronic  $(1.46203 - (\text{LN}(\text{hardness}) * 0.145712)) * \text{EXP}(1.273 * \text{LN}(\text{hardness}) - 4.705)$

**Nickel (j)**

acute  $(0.998) * \text{EXP}(0.846 * \text{LN}(\text{hardness}) + 2.255)$   
chronic  $(0.997) * \text{EXP}(0.846 * \text{LN}(\text{hardness}) + 0.0584)$

**Silver (j)**

**acute**  $(0.85) * \text{EXP}(1.72 * \text{LN}(\text{hardness}) - 6.52)$   
chronic N/A

**Zinc (j)**

acute  $(0.978) * \text{EXP}(0.8473 * \text{LN}(\text{hardness}) + 0.8604)$   
chronic  $(0.986) * \text{EXP}(0.8473 * \text{LN}(\text{hardness}) + 0.7614)$

k. Hexavalent Chromium (acute and chronic criteria) is measured as dissolved. The mercury chronic criterion is measured as total recoverable mercury.

l. These human health criteria are not based on calculations with fish consumption rates and reflect EPA's 304(a) criteria guidance.

m. If the ambient concentration of total mercury exceeds 0.012 ug/l more than once in a 3-year period in the ambient water, the edible portion of aquatic species of concern must be analyzed to determine whether the concentration of methyl mercury exceeds the FDA action level (1.0 mg/kg). If the FDA action level is exceeded, the Tribe must notify the EPA Region 10 Regional Administrator, initiate a site specific criterion or a revision of its mercury criterion so as to protect designated uses, and take other appropriate action, such as issuance of a fish consumption advisory for the affected area.

n. Freshwater aquatic life criteria for pentachlorophenol are expressed as a function of pH, and are calculated as follows (Values in the table correspond to a pH of 7.8):

$$\text{Acute criterion} = \exp(1.005(\text{pH}) - 4.830)$$

Chronic criterion =  $\exp(1.005(\text{pH})-5.290)$

The criteria in Table 2 shall be applied in addition to criteria described in Table 1 to all surface waters in which primary contact ceremonial and spiritual uses of surface waters apply.

**Table 2. Water Quality Criteria for Primary Contact Ceremonial and Spiritual Uses**

Compound	ug/L
Aluminum	50
Antimony	6
Arsenic	50
Asbestos	7MF/Li
Barium	1,000
Benzene	5
Benzo(a)pyrene	0.2
Beryllium	4
Bromoform	100
Cadmium	5
Chloride	250,000
Chromium (total)	100
Color	15 color units.
Copper	1,000
Corrosivity	Non-corrosive.
Cyanide (as free	200
Fluoride	2,000
Foaming agents	500
Iron	300
Manganese	50
Mercury	2
Nitrate (as N)	10,000
Nitrite (as N)	1,000
Total Nitrate +	10,000
Odor	3 threshold odor number.
pH	6.5-8.5 STDU
Selenium	50
Silver	100
Strontium 90	8 (pCi/L)
Sulfate	250,000
Thallium	2
Total dissolved	500,000
Tritium	20,000 (pCi/L)
Zinc	5000

## 7. RADIOACTIVE MATERIALS

Concentrations of gross alpha particle activity shall not exceed the concentration caused by naturally-occurring materials. The combined dissolved concentration of Radium-226 and Radium-228, and the concentration of Strontium-90 shall not exceed 5 picocuries per liter, and 8 picocuries per liter, respectively. Gross alpha particle concentrations, including Radium-226 but excluding radon and uranium, shall not exceed 15 picocuries per liter. Tritium concentrations shall not exceed 20,000 picocuries per liter. The gross beta radiation concentration shall not exceed 50 picocuries per liter. The average annual concentration of beta particles and of photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year.

Concentrations of analytes of the  $U^{238}$ ,  $U^{235}$ , and  $Th^{232}$  decay chains in excess of natural conditions shall not exceed activities defined in Table 3.

Table 3. Water Quality Criteria for Radionuclides

Radionuclide	pCi/L
Pa234	30.00
Pb206*	5.00
Pb207*	5.00
Pb208*	5.00
Pb210	0.01
Pb212	2.00
Po210	0.04
Ra226	0.06
Th232	0.03
Th234	5.00
U234	0.30
U235	0.30
U238	0.30
Unat	0.30

\*Pb<sup>206</sup>, Pb<sup>207</sup>, Pb<sup>208</sup> are the stable end members of the three aforementioned decay chains and therefore are not radioactive. The sum of Pb<sup>206</sup>, Pb<sup>207</sup>, and Pb<sup>208</sup> shall not exceed 5 ug/L.

## 8. BIOLOGICAL CRITERIA

(1) All surface waters of the tribe shall be of sufficient quality to support aquatic life without detrimental changes in the resident aquatic communities.

(2) Surface waters of the tribe shall be free from materials, whether attributable to point source discharges, nonpoint sources, or instream activities, in concentrations or combinations which would impair the structure or limit the function of the resident aquatic community as it naturally occurs.

(3) The structure and function of the resident aquatic community shall be measured by biological assessment methods approved by the Department.

(4) Determination of impairment or limitation of the resident aquatic community shall be based on a comparison with the aquatic community found at an appropriate reference site or region.

## 9. WATER USE AND CRITERIA CLASSES

The following criteria shall apply to the various classes of surface waters of the tribe:

(1) Class AA (Extraordinary)

(a) **General characteristics.** Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all **designated** uses.

(b) **Designated uses.** Designated uses shall include, but not be limited to, the following:

(i) Primary contact ceremonial and spiritual;

(ii) Cultural;

(iii) Water supply (domestic, industrial, agricultural);

(iv) Stock watering;

- (v) Fish and shellfish, including:
  - Salmonid migration, rearing, spawning, and harvesting.
  - Other fish migration rearing, spawning, and harvesting.
  - Clam, and mussel rearing, spawning, and harvesting.
  - Mollusks, crustaceans and other shellfish rearing, spawning, and harvesting.

(vi) Primary contact recreation; and

(vii) Commerce and navigation.

(c) **Water quality criteria:**

- (i) E.coli organism levels must not exceed a geometric mean value of 126/100mL with not 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 406/100mL
- (ii) Dissolved oxygen shall not be less than 9.5 mg/l.
- (iii) Total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.
- (iv) Water used for spawning or rearing by naturalized populations of indigenous salmon or trout. Not to exceed a 7-day average of the daily maximum temperature values greater than 16.5 C from June 1 to September 1. Not to exceed a 7-day average of the daily maximum temperature values greater than 13.5 C between September 1 and October 1 and between April 1 and June 1, and not to exceed 11 C from October 1 to April 1; with no single daily maximum temperature exceeding 18.5 C. Exception for Non-Anadromous Rainbow and Redband Trout. In waters where the only salmonid present is non-anadromous form of naturalized rainbow or redband trout. Temperatures from June 1 to September 1 may be allowed to reach a 7-day average of the daily maximum temperatures of 18.5 C.
- (v) pH shall be within the range of 6.5 to 8.5 with a human-caused variation within a range of less than 0.2 units.

- (vi) Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

(2) Class A (Excellent)

(a) **General characteristics.** Water quality of this class shall meet or exceed the requirements for all or substantially all designated uses.

(b) **Designated uses.** Designated uses shall include, but not be limited to, the following:

- (i) Primary contact ceremonial and spiritual;
- (ii) Cultural;
- (iii) Water supply (domestic, industrial, agricultural);
- (iv) Stock watering;
- (v) Fish and shellfish, including:
  - Salmonid migration, rearing, spawning, and harvesting.
  - Other fish migration rearing, spawning, and harvesting.
  - Mollusks, crustaceans and other shellfish rearing, spawning, and harvesting.
- (vi) Primary contact recreation, and
- (vii) Commerce and navigation.

(c) **Water quality criteria:**

- (i) E.coli organism levels must not exceed a geometric mean value of 126/100mL with not 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 406/100mL
- (ii) Dissolved oxygen shall not be less than 8.0 mg/l.
- (iii) Total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.

- (iv) Water used for spawning or rearing by naturalized populations of indigenous salmon or trout. Not to exceed a 7-day average of the daily maximum temperature values greater than 16.5 C from June 1 to September 1. Not to exceed a 7-day average of the daily maximum temperature values greater than 13.5 C between September 1 and October 1 and between April 1 and June 1, and not to exceed 11 C from October 1 to April 1; with no single daily maximum temperature exceeding 18.5 C. Exception for Non-Anadromous Rainbow and Redband Trout. In waters where the only salmonid present is non-anadromous form of naturalized rainbow or redband trout. Temperatures from June 1 to September 1 may be allowed to reach a 7-day average of the daily maximum temperatures of 18.5 C.
- (v) pH shall be within the range of 6.5 to 8.5 with a human-caused variation within a range of less than 0.5 units.
- (vi) Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

(3) Lake Class

(a) **General characteristics.** Water quality of this class shall meet or exceed the requirements for all or substantially all designated uses, particularly cultural, fish and shellfish, and domestic water supply uses.

(b) **Designated uses.** Designated uses shall include, but not be limited to, the following:

- (i) Primary Contact ceremonial and spiritual;
- (ii) Cultural;
- (iii) Water supply (domestic, industrial, agricultural);
- (iv) Stock watering;
- (v) Fish and shellfish, including:
  - Salmonid migration, rearing, spawning, and harvesting.



--Other fish migration rearing, spawning, and harvesting.

--Mollusks, crustaceans and other shellfish rearing, spawning, and harvesting;

(vi) Primary contact recreation, and

(vii) Commerce and navigation.

(c) **Water quality criteria:**

(i) E. coli organism levels must not exceed a geometric mean value of 126/100mL with not 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 406/100mL.

(ii) Dissolved oxygen shall exhibit no measurable decrease from natural conditions.

(iii) Total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.

(iv) Temperature shall exhibit no measurable change from natural conditions.

(v) pH shall exhibit no measurable change from natural conditions.

(vi) Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

(vii) Nutrient criteria shall be established with the aid of Table 4.

Table 4. Nutrient Criteria for Lakes

<b>Trophic State</b>	<b>If Ambient TP Range of Lake is:</b>	<b>Then Criteria Should be Set</b>
Ultra-oligotrophic	0-4	4 or less
Oligotrophic	>4-10	10 or less
Lower mesotrophic	>10-20	20 or less
Upper mesotrophic	>20-35	35 or less

## 10. GENERAL CLASSIFICATIONS

General classifications applying to all waterbodies not specifically classified under Specific Classifications are as follows:

(1) All lakes and their feeder streams are classified Lake Class, except for those feeder streams specifically classified otherwise.

(2) All reservoirs with a mean detention time of greater than 15 days are classified Lake Class.

(3) All reservoirs with a mean detention time of 15 days or less are classified the same as the river section in which they are located.

(4) All unclassified surface waters that are tributaries to classified waters shall assume the class of the receiving water.

(5) All other unclassified surface waters are classified as A.

## 11. SPECIFIC CLASSIFICATIONS

Specific surface waters on the Spokane Indian Reservation are classified as follows:

Blue Creek	Class AA
Castle Rock Creek	Class A
Chamokane (Tshmkn) Creek	Class A
Cottonwood Creek	Class A
Deep Creek	Class A
Little Chamokane Creek	Class A
Moses Creek	Class A
Orazada Creek	Class AA
Owl Creek	Class AA
Oyachen Creek	Class AA
Rail Creek	Class AA
Sams Creek	Class A
Sand Creek	Class AA
Sheep Creek	Class A
Thomas Creek	Class A
Wellpinit Creek	Class A
Benjamin Lake	Lake Class
Mathew Lake	Lake Class
McCoy Creek	Class A
McCoy Lake	Lake Class
Turtle Lake	Lake Class
Spokane River	Class A
Columbia River	Class AA

## 12. WETLANDS

(1) All wetlands within the reservation which are not constructed or engineered shall be subject to the Narrative Criteria (Section 5) and Toxic Pollutants Criteria (Section 6) provisions of this chapter.

(2) Water quality in wetlands shall be maintained at naturally occurring levels, within the natural range of variation for the individual wetland.

(3) Physical and biological characteristics shall be maintained and protected by:

(a) Maintaining hydrological conditions, including

hydroperiod, hydrodynamics, and natural water temperature variations;

(b) Maintaining the natural hydrophytic vegetation; and,

(c) Maintaining substrate characteristics necessary to support existing and designated uses.

(4) Wetlands shall not be used in lieu of stormwater treatment, except as specified by number (7) below. Stormwater shall be treated before discharge to a wetland.

(5) Point and nonpoint sources of pollution shall not cause destruction or impairment of wetlands except where authorized under Section 404 of the CWA.

(6) Wetlands shall not be used as repositories or treatment systems for wastes from human sources, except as specified by number (7) below.

(7) Wetlands intentionally created from non-wetland sites or by enhancing naturally-occurring wetlands for the sole purpose of wastewater or stormwater treatment (constructed or engineered wetlands) are not considered "surface waters of the tribe" and are not subject to the provisions of this section.

### **13. IMPLEMENTATION**

(1) All discharges from point sources and all activities which generate nonpoint source pollution shall be conducted so as to comply with this chapter.

(2) Activities which cause pollution of storm water shall be conducted so as to comply with these water quality standards.

### **14. ENFORCEMENT**

These standards shall be enforced through all methods available to the Department including, but not limited to, enforcement actions brought in Tribal Court, and coordination with

other departments and regulatory agencies.