

# **Appendix I**

## **Wyoming Water Quality Standards**

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### ***Wyoming Surface Water Quality Standards***

(Taken from Wyoming Water Quality Rules and Regulations: Chapter 1)

**Section 4. Surface Water Classes and Uses.** The following water classes are a hierarchical categorization of waters according to existing and designated uses. Except for Class 1 waters, each classification is protected for its specified uses plus all the uses contained in each lower classification. Class 1 designations are based on value determinations rather than use support and are protected for all uses in existence at the time or after designation. There are four major classes of surface water in Wyoming with various subcategories within each class (see “Wyoming Surface Water Classification List” for current listing).

**(a) Class 1, Outstanding Waters.** Class 1 waters are those surface waters in which no further water quality degradation by point source discharges other than from dams will be allowed. Nonpoint sources of pollution shall be controlled through implementation of appropriate best management practices. Pursuant to Section 7 of these regulations, the water quality and physical and biological integrity which existed on the water at the time of designation will be maintained and protected. In designating Class 1 waters, the Environmental Quality Council shall consider water quality, aesthetic, scenic, recreational, ecological, agricultural, botanical, zoological, municipal, industrial, historical, geological, cultural, archaeological, fish and wildlife, the presence of significant quantities of developable water and other values of present and future benefit to the people.

**(b) Class 2, Fisheries and Drinking Water.** Class 2 waters are waters, other than those designated as Class 1, that are known to support fish or drinking water supplies or where those uses are attainable. Class 2 waters may be perennial, intermittent or ephemeral and are protected for the uses indicated in each sub category listed below. There are four subcategories of Class 2 waters.

(i) Class 2AB. Class 2AB waters are those known to support game fish populations or spawning and nursery areas at least seasonally and all their perennial tributaries and adjacent wetlands and where a game fishery and drinking water use is otherwise attainable. Class 2AB waters include all permanent and seasonal game fisheries and can be either "cold water" or "warm water" depending upon the predominance of cold water or warm water species present. All Class 2AB waters are designated as cold water game fisheries unless identified as a warm water game fishery by a "ww" notation in the “Wyoming Surface Water Classification List”. Unless it is shown otherwise, these waters are presumed to have sufficient water quality and quantity to support drinking water supplies and are protected for that use. Class 2AB waters are also protected for nongame fisheries, fish consumption, aquatic life other than fish, primary contact recreation, wildlife, industry, agriculture and scenic value uses.

(ii) Class 2A. Class 2A waters are those that are not known nor have the

potential to support game fish but are used for public or domestic drinking water supplies, including their perennial tributaries and adjacent wetlands. Uses designated on Class 2A waters include drinking water, aquatic life other than fish, primary contact recreation, wildlife, industry, agriculture and scenic value.

(iii) Class 2B. Class 2B waters are those known to support or have the potential to support game fish populations or spawning and nursery areas at least seasonally and all their perennial tributaries and adjacent wetlands and where it has been shown that drinking water uses are not attainable pursuant to the provisions of Section 33. Class 2B waters include permanent and seasonal game fisheries and can be either "cold water" or "warm water" depending upon the predominance of cold water or warm water species present. All Class 2B waters are designated as cold water game fisheries unless identified as a warm water game fishery by a "ww" notation in the "Wyoming Surface Water Classification List". Uses designated on Class 2B waters include game and nongame fisheries, fish consumption, aquatic life other than fish, primary contact recreation, wildlife, industry, agriculture and scenic value.

(iv) Class 2C. Class 2C waters are those known to support or have the potential to support only nongame fish populations or spawning and nursery areas at least seasonally including their perennial tributaries and adjacent wetlands. Class 2C waters include all permanent and seasonal nongame fisheries and are considered "warm water". Uses designated on Class 2C waters include nongame fisheries, fish consumption, aquatic life other than fish, primary contact recreation, wildlife, industry, agriculture, and scenic value.

**(c) Class 3, Aquatic Life Other than Fish.** Class 3 waters are waters, other than those designated as Class 1, that are intermittent, ephemeral or isolated waters and because of natural habitat conditions, do not support nor have the potential to support fish populations or spawning, or certain perennial waters which lack the natural water quality to support fish (e.g., geothermal areas). Class 3 waters provide support for invertebrates, amphibians, or other flora and fauna which inhabit waters of the state at some stage of their life cycles. Uses designated on Class 3 waters include aquatic life other than fish, recreation, wildlife, industry, agriculture and scenic value. Generally, waters suitable for this classification have wetland characteristics, and such characteristics will be a primary indicator used in identifying Class 3 waters. There are three subcategories of Class 3 waters.

(i) Class 3A. Class 3A waters are isolated waters including wetlands that are not known to support fish populations or drinking water supplies and where those uses are not attainable.

(ii) Class 3B. Class 3B waters are tributary waters including adjacent wetlands that are not known to support fish populations or drinking water supplies and where those uses are not attainable. Class 3B waters are intermittent and ephemeral streams with sufficient hydrology to normally support and sustain communities of aquatic life including invertebrates, amphibians, or other flora and fauna which inhabit waters of the state at some stage of their life cycles. In general, 3B waters are characterized by frequent linear wetland occurrences or impoundments within or adjacent to the stream channel over its entire length. Such characteristics will be a primary indicator used in identifying Class 3B waters.

(iii) Class 3C. Class 3C waters are perennial streams without the natural water quality potential to support fish or drinking water supplies but do support wetland characteristics. These may include geothermal waters and waters with naturally high concentrations of dissolved salts or metals or pH extremes.

**(d) Class 4, Agriculture, Industry, Recreation and Wildlife.** Class 4 waters are waters, other than those designated as Class 1, where it has been determined that aquatic life uses are not attainable pursuant to the provisions of Section 33 of these regulations. Uses designated on Class 4 waters include primary contact recreation, wildlife, industry, agriculture and scenic value.

(i) Class 4A. Class 4A waters are artificial canals and ditches that are not known to support fish populations.

(ii) Class 4B. Class 4B waters are intermittent and ephemeral stream channels that have been determined to lack the hydrologic potential to normally support and sustain aquatic life pursuant to the provisions of Section 33(b) of these regulations. In general, 4B streams are characterized by only infrequent wetland occurrences or impoundments within or adjacent to the stream channel over its entire length. Such characteristics will be a primary indicator used in identifying Class 4B waters.

(iii) Class 4C. Class 4C waters are all waters that have been determined to lack the potential to normally support and sustain aquatic life pursuant to the provisions of Section 33(b)(i), (iii), (iv), (v), and (vi) of these regulations. Class 4C includes, but is not limited to effluent-dominated streams where it has been determined under Section 33(b)(iii) that removing a source of pollution to achieve full attainment of aquatic life uses would cause more environmental damage than leaving the source in place.

(e) Specific stream segment classifications are contained in a separate document entitled “Wyoming Surface Water Classification List” which is published by the department and periodically revised and updated according to the provisions of sections 4, 33, 34, 35 and Appendix A of this chapter. Class 1 waters are those waters that have been specifically designated by the Environmental Quality Council. Class 2 designations are based upon the fisheries information contained in the Wyoming Game and Fish Department’s “Stream and Lakes” inventory database as submitted to the Department of Environmental Quality in June, 2000. This database represents the best available information and is considered conclusive. Class 4 designations are based upon knowledge that a water body is an artificial, man made conveyance, or has been determined not to support aquatic life uses through an approved Use Attainability Analysis. All other waters are designated as Class 3A or 3B. New information made available to the department may be cause to amend the classifications.

## Wyoming Groundwater Quality Standards

Parameter	Class I	Class II	Class III	Class Special (A)
	Domestic	Agriculture	Livestock	Fish/Aquatic Life
	Concentration (mg/L unless otherwise indicated)			
Aluminum (Al)	-	5.0	5.0	0.1
Ammonia (NH <sub>3</sub> -N)	0.58	-	-	0.021
Arsenic (AS)	0.05	0.1	0.2	0.05
Barium (Ba)	1.0	-	-	5.0
Beryllium (Be)	-	0.1	-	0.011-1.33
Boron (B)	0.75	0.75	5.0	-
Cadmium (Cd)	0.01	0.01	0.05	0.0004-0.0153
Chloride (Cl)	250.0	100.0	2000.0	-
Chromium (Cr)	0.05	0.1	0.05	0.05
Cobalt (Co)	-	0.05	1.0	-
Copper (Cu)	1.0	0.2	0.5	0.01-0.043
Cyanide (CN)	0.2	-	-	0.005
Fluoride (F)	1.4-2.47	-	-	-
Hydrogen Sulfide (H <sub>2</sub> S)	0.05	-	-	0.0022
Iron (Fe)	0.3	5.0	-	0.5
Lead (Pb)	0.05	5.0	0.1	0.004-0.153
Lithium (Li)	-	2.5	-	-
Manganese (Mn)	0.05	0.2	-	1.0
Mercury (Hg)	0.002	-	0.00005	0.00005
Nickel (Ni)	-	0.2	-	0.05-0.43
Nitrate (NO <sub>3</sub> -N)	10.0	-	-	-
Nitrite (NO <sub>2</sub> -N)	1.0	-	10.0	-
(NO <sub>3</sub> +NO <sub>2</sub> )-N	-	-	100.0	-
Oil & Grease Virtually Free	Virtually free	10.0	10.0	Virtually free
Phenol	0.001	-	-	0.001
Selenium (Se)	0.01	0.02	0.05	0.05
Silver (Ag)	0.05	-	-	0.0001-0.000253
Sulfate (SO <sub>4</sub> )	250.0	200.0	3000.0	-
Total Dissolved Solids (TDS)	500.0	2000.0	5000.0	500.04-1000.5-2000.06
Uranium (U)	5.0	5.0	5.0	0.03-1.43
Vanadium (V)	-	0.1	0.1	-
Zinc (Zn)	5.0	2.0	25.0	0.05-0.63
pH	6.5-9.0s.u.	4.5-9.0s.u.	6.5-8.5s.u.	6.5-9.0s.u.
SAR	-	8	-	-
RSC	-	1.25meq/L	-	-
Combined Total Radium 226 and Radium 2289	5 pCi/L	5 pCi/L	5 pCi/L	5 pCi/L
Total Strontium 90	8 pCi/L	8 pCi/L	8 pCi/L	8 pCi/L
Gross alpha particle radioactivity (including Radium 226 but excluding Radon and Uranium)	15 pCi/L	15 pCi/L	15 pCi/L	15 pCi/L