PUEBLO OF ISLETA

SURFACE WATER QUALITY STANDARDS

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SECTION I. Introduction, Authority, and Applicability

Pursuant to Section 518[1] of the Clean Water Act[2], the Tribal Council of the PUEBLO OF ISLETA, a federally-recognized Tribe of Indians, hereby enacts the PUEBLO OF ISLETA Surface Water Quality Standards.

A. The purposes of the PUEBLO OF ISLETA Surface Water Quality Standards are as follows:

1. to identify the existing and attainable uses that are being designated for which the surface waters of the PUEBLO OF ISLETA shall be protected;
2. to prescribe water quality criteria (narrative and numeric) which shall be imposed in order to fully protect the designated uses;
3. to assure that degradation of existing surface water quality does not occur; and
4. to promote the social welfare and economic well-being of the PUEBLO OF ISLETA.

These purposes shall be accomplished by incorporating the criteria and other provisions set forth in the PUEBLO OF ISLETA Surface Water Quality Standards into the permitting and management process for point source dischargers and nonpoint source generators, by using those criteria to determine when a designated use is threatened or impaired, and by requiring the most efficient treatment technologies to control point sources and requiring implementation of effectual best management practices for nonpoint sources of pollution.

B. The PUEBLO OF ISLETA Surface Water Quality Standards apply to all tribal surface waters, that is, all surface waters within the exterior boundaries of the PUEBLO OF ISLETA Indian Reservation, including water situated wholly or partly within, or bordering upon, the Reservation, whether public or private, except for private waters that do not combine with other public surface waters.

C. The PUEBLO OF ISLETA Surface Water Quality Standards are consistent with Section 101(a)(2) of the Clean Water Act [33 U.S.C. Section 1251(a)(2)], which declares that "it is the national goal that, wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983 ...." Primary contact ceremonial use, agricultural water supply use, fish culture use, and industrial water supply use are other beneficial uses of the PUEBLO OF ISLETA Tribal surface waters. The PUEBLO OF ISLETA Surface Water Quality Standards provide that contamination that may result from such uses shall not lower the quality of the water below what is required for recreation and protection and propagation of fish, shellfish, and wildlife.

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1 33 U.S.C. Section 1377

2 33 U.S.C. Section 1251 et seq.

D. There is hereby created the position of Tribal Water Quality Control Officer. The Tribal Water Quality Control Officer shall serve under the direction of the Director of the Pueblo of Isleta's Environment Department. The Tribal Water Quality Control Officer shall seek to work in cooperation with the U.S. Environmental Protection Agency and other agencies of the federal government or of the State of New Mexico to insure attainment of the PUEBLO OF ISLETA Surface Water Quality Standards.

E. The antidegradation policy for Tribal surface waters and the procedures for implementing it are set forth in Section II herein and in the Implementation Plan referred to therein.

F. Pursuant to Section 303(c)(1) of the Clean Water Act [33 U.S.C. Section 1313(c)], the PUEBLO OF ISLETA shall hold public hearings at least once each three-year period for the purpose of reviewing and, as appropriate, amending the PUEBLO OF ISLETA Surface Water Quality Standards. Revisions shall incorporate relevant scientific and engineering advances.

G. The PUEBLO OF ISLETA shall issue and approve surface water designations for tribal waters and shall determine the suitability of bodies of water for recreational purposes.

H. Criteria specific to a designated use shall be protected at all times and at all flow rates. Where water diversion or drought result in flow rates of zero, all discharges shall meet the criteria for the most sensitive designated use of the receiving water body. For standing water bodies, criteria particular to a use shall be maintained whenever the water body is suitable for the use. The General Standards (Section III, below) shall be maintained at all times and shall apply to rivers, streams, lakes, reservoirs, canals, drains, ponds, springs, and wetlands, whether perennial, ephemeral, or intermittent in nature. The applicable criteria for a body of water shall be the most stringent criteria required to fully protect the most sensitive use designated for that body of water. Artificial reservoirs, constructed outside waters of the United States, used for water treatment are exempt from these standards, provided however, that the water released from any such reservoir must meet all the criteria that apply to the receiving body of water.

I. These surface water quality standards shall be the basis for managing discharges attributable to point and nonpoint sources of pollution. These surface water quality standards are not used to control natural background phenomena or acts of God.

J. In the event that monitoring of water quality identifies reaches where attainable water quality is less than what is required by the PUEBLO OF ISLETA Surface Water Quality Standards due to natural background conditions, then the PUEBLO OF ISLETA may modify the Surface Water Quality Standards to reflect actual attainability. Modification thereof shall be within the sole discretion of the PUEBLO OF ISLETA, but shall be subject to the provisions of the Clean Water Act, and shall be carried out in accordance with use-attainability analysis procedures as defined in the Code of Federal Regulations at Title 40 Section 131.10 (g) or other appropriate procedures leading to site-specific criteria.

K. Errors resulting from inadequate and erroneous data or human or clerical oversight will be subject to correction by the PUEBLO OF ISLETA. The discovery of such

errors does not render the remaining and unaffected standards invalid. If any provision of the PUEBLO OF ISLETA Surface Water Quality Standards, or the application of any provision of these Surface Water Quality Standards to any person or circumstance, should be held to be invalid, the application of such provision to other persons and circumstances and the remainder of the Surface Water Quality Standards shall not be affected thereby.

L. It shall be the policy of the PUEBLO OF ISLETA to allow, on a case-by-case basis, the inclusion of a compliance schedule in a National Pollutant Discharge Elimination System permit issued to an existing facility at the time of permit reissuance or modification. Such compliance schedule will be for the purpose of providing a permittee with a reasonable time period to make treatment facility modifications necessary to comply with water quality based permit limitations. Compliance schedules shall require compliance at the earliest practicable time and shall specify milestone dates so as to measure progress toward final compliance.

SECTION II. Antidegradation Policy and Implementation Plan

A. Antidegradation Policy:

1. Existing uses shall be fully protected. The level of water quality necessary to fully protect existing uses shall be maintained.
2. Where existing water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that level of water quality shall nonetheless be maintained and protected unless it is found, after full satisfaction of governmental and public participation requirements, that a lower level of water quality is required in order to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation of surface water quality, the PUEBLO OF ISLETA shall assure water quality adequate to fully protect existing uses while imposing the highest statutory and regulatory requirements for point sources and implementation of effectual best management practices for nonpoint sources.
3. Where high quality surface waters constitute an outstanding national or tribal resource, or waters of exceptional recreational or ecological significance, the surface water quality and uses of those water bodies shall be fully maintained and protected.
4. In those cases where potential water quality impairments associated with thermal discharge are involved, the antidegradation policy and implementation method shall be consistent with Section 316 of the Clean Water Act, as amended, (33 U.S.C. Section 1326).

B. Implementation Plan.

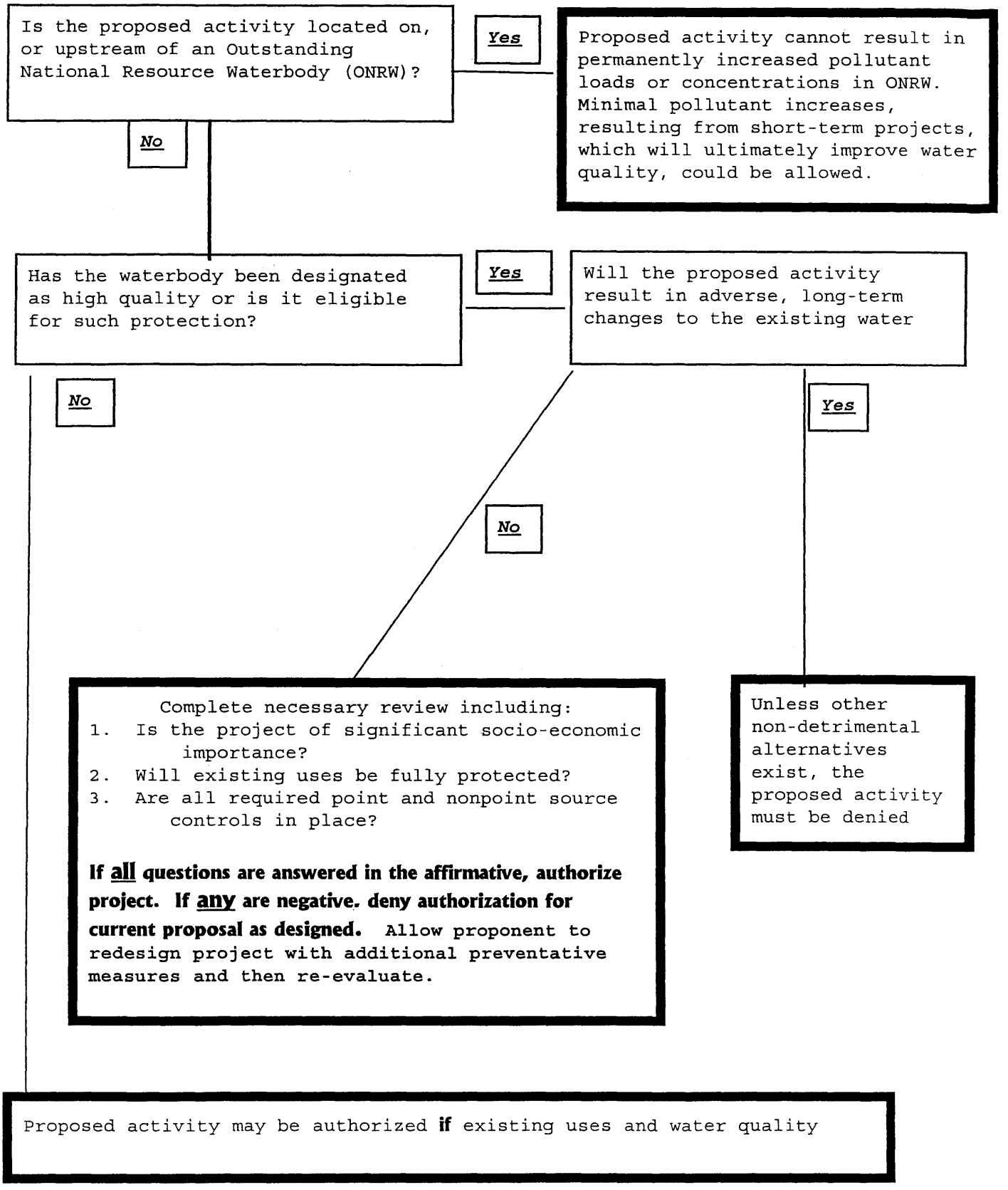
Acting under authority delegated by the PUEBLO OF ISLETA Tribal Council, the Environment Department shall implement the PUEBLO OF ISLETA Surface Water Quality Standards, including the antidegradation policy, by establishing and maintaining controls on the introduction of pollutants into surface waters. More particularly, the Tribal Water Quality Control Officer shall do the following:

1. monitor water quality to assess the effectiveness of pollution controls and to determine whether water quality standards are being attained;
2. obtain information as to the impact of effluents on receiving waters;
3. advise prospective dischargers of discharge requirements;
4. review the adequacy of the existing data base and obtain additional data when required;
5. perform ongoing reviews of federal surface water quality requirements and, as necessary, propose amendments to these standards;
6. require the highest and best degree of wastewater treatment practicable and commensurate with protecting and maintaining designated uses and existing water quality;
7. develop water quality based effluent limitations and comments on technology-based effluent limitations, as appropriate, for inclusion in any

federal permit issued to a discharger pursuant to Section 402 of the Clean Water Act (33 U.S.C. Section 1342);

8. require that these effluent limitations be included in any such permit as a condition for Tribal certification pursuant to Section 401 of the Clean Water Act, (33 U.S.C. Section 1341);
9. Seek to coordinate water pollution control activities with other tribal agencies and other local, state, and federal agencies, as appropriate;
10. develop and pursue inspection and enforcement programs in order to ensure that dischargers comply with requirements of the PUEBLO OF ISLETA Surface Water Quality Standards and any requirements promulgated thereunder, and in order to support the enforcement of federal permits by the U.S. Environmental Protection Agency or the U.S. Army Corps of Engineers;
11. provide continuing technical training for wastewater treatment facility operators through training and certification programs;
12. publish the results of water quality investigations and the interpretation thereof;
13. encourage, in conjunction with other agencies, implementation of effectual best management practices to control nonpoint sources of pollutants to achieve compliance with the PUEBLO OF ISLETA Surface Water Quality Standards;
14. Evaluate the need for, and effectiveness of, best management practices; and,
15. Implement the antidegradation policy, which, at a minimum, shall include the following review of any project that could result in a discharge of pollutants to PUEBLO OF ISLETA surface waters.

ANTIDEGRADATION REVIEW SCHEME



SECTION III. General Standards

The following General Standards apply to all surface waters of the PUEBLO OF ISLETA, including intermittent and ephemeral streams, provided, however, that where Section IV below set stricter criteria for designated water bodies, the stricter criteria supersede the General Standards.

A. Stream Bottom Deposits: Surface waters shall be free from water contaminants from other than natural causes that may settle and have a deleterious effect on the aquatic biota or that will adversely alter the physical or chemical properties of the water or the bottom sediments.

B. Floating Solids, Oil, and Grease: Surface waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on stream or lake banks). As a guideline, oil and grease discharged into surface waters shall not exceed 10 mg/liter on a weekly average or 15 mg/liter instantaneous maximum.

C. Color: Surface waters shall be free from true color-producing materials from other than natural causes that create an aesthetically undesirable condition. Color shall not impair the designated, existing or attainable uses of a water body. Color-producing substances from other than natural sources are limited to concentrations equivalent to 70 color units (CU).

D. Odor and Taste: Contaminants from other than natural causes are limited to concentrations that do not impart unpalatable flavor to fish, and that do not result in offensive odors arising from the water, and that do not otherwise interfere with the designated and other attainable uses of a water body. Taste and odor-producing substances from other than natural origins shall not interfere with the production of a potable water supply by modern treatment methods. The criteria adopted to prevent organoleptic effects are found in Appendix I.

E. Nuisance Conditions: Plant nutrients or other substances stimulating algal growth, or growth of excessive rooted aquatic vegetation, from other than natural causes shall not be present in concentrations that produce objectionable algal densities or nuisance aquatic vegetation, or that result in a dominance of nuisance species instream, or that cause nuisance conditions in any other fashion. Plant nutrient concentrations shall not be permitted to reach levels which result in man-induced eutrophication problems. If nuisance conditions resulting from plant nutrients are identified in the surface waters of the PUEBLO OF ISLETA limitations for such nutrients may be established by the PUEBLO OF ISLETA in accordance with the U.S. Environmental Protection Agency's "Ambient Water Quality Recommendations. Information Supporting the Development of State and Tribal Nutrient Criteria. Rivers and Streams in Nutrient Ecoregion III. (EPA 822-B-00-016, December 2000) and incorporated into these Surface Water Quality Standards.

F. Pathogens: Surface waters shall be virtually free from pathogens. Waters used for irrigation of table crops (e.g., lettuce, peppers or onions) shall be virtually free of Salmonella and Shigella species.

G. Turbidity: Turbidity attributable to other than natural causes shall not reduce light transmission to a point where aquatic biota are inhibited or to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less, with no more than a 10 percent increase when background

turbidity is more than 50 NTU.

H. Mixing Zones: Where effluent is discharged into surface waters the effluent shall not result in concentrations of any contaminant exceeding any water quality criteria or in the depletion of oxygen such that oxygen concentrations fall below 5.0 ppm or the change in pH such that it falls outside the acceptable pH range.

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

J. Temperature: The introduction of heat by other than natural causes shall not increase the temperature in a stream, by more than 2.7 C (5 F), based upon the weekly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less). In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7 C (3 F) above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from the surface to the bottom or surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach (20 C/68 F for coldwater fisheries and 32.2 C/ 90 F for warmwater fisheries) would thereby be exceeded. Privately-owned lakes and reservoirs used in the process of cooling water for industrial purposes may be classified using a less stringent special-use standard for thermal components, provided however, that the water released from any such lake or reservoir into a stream system or into Tribal lakes meets the surface water quality standards of the receiving stream. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates): Existing mineral quality shall not be altered by municipal, industrial, and instream activities, or other waste discharges so as to interfere with the designated or attainable uses for a water body. An increase of more than 1/3 over naturally-occurring levels shall not be permitted.

L. The pH of a water body shall not be permitted to fluctuate in excess of 1.0 unit over a period of 24 hours for other than natural causes.

M. If a water body is capable of supporting aquatic life, the dissolved oxygen standard will be a minimum of 5 mg/l.

N. Toxic Substances:

1. Toxic substances shall not be present in surface waters in quantities that are toxic to human, animal, plant, or aquatic life, or in quantities that interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota. There shall be no acute toxicity and no significant chronic toxicity in any PUEBLO OF ISLETA surface water.

   For toxic substances lacking EPA published criteria, biomonitoring data may

be used to determine compliance with this narrative standard in accordance with EPA standard acute and chronic biological test protocols. These protocols can be found in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, EPA-600/4-90/027 F; Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", EPA-600/4-91/002; U.S. Environmental Protection Agency, "Technical Support Document for Water Quality-Based Toxics Control" EPA/505/2-90-001; U.S. Environmental Protection Agency, Region VI, "Post Third Round NPDES Permit Implementation Strategy"; and U.S. Environmental Protection Agency, "Quality Criteria for Water, 1986" or the latest revisions thereof. Alternatively, the PUEBLO OF ISLETA may use results of toxicological studies published in scientific journals to calculate a chronic criterion necessary to protect the aquatic biota exposed to toxic substances. The chronic criterion for any toxic substance which does not bioaccumulate or biomagnify shall be ten percent (10%) of the LC-50 of the water body's most sensitive species. The handling of toxicants in surface waters that are known to be persistent, bioaccumulative, carcinogenic, and/or synergistic with other waste stream components shall be addressed on a case-by-case basis.

2. Toxic substance criteria for surface waters with designated aquatic life uses, or from which fish are caught for human consumption, are found in Appendix II.

O. Biological Integrity: All surface waters of the PUEBLO OF ISLETA with an existing or attainable fisheries use must demonstrate aquatic life communities which are similar in variety and abundance to least-disturbed waters within the Middle Rio Grande Basin and with similar hydrologic conditions. Measurements of biological integrity should include fish community structure and other associated aquatic life components. A significant adverse alteration of the abundance or variety of the aquatic life community constitutes a violation of these surface water quality standards.

P. Sediment quality: Man-made or man-induced activities shall not result in sediment with contaminants at concentrations which are toxic if absorbed by aquatic biota, livestock, wildlife or man or in quantities that interfere with the normal propagation, growth, and survival of the existing aquatic biota.

SECTION IV. Water Body Uses and Standards Specific to the Uses

A. Marginal Coldwater Fishery Use. A marginal coldwater fishery is a stream or river reach, lake, or impoundment where water temperature and other characteristics are suitable for support of a balanced aquatic life community which includes coldwater fish (such as brown trout, cutthroat trout, brook trout, or rainbow trout), but where temperature and other characteristics may not always be suitable for propagation of coldwater fish.

Standards specific to the use are as follows:

1. Dissolved oxygen minimum: 6 mg/l
2. Temperature maximum: 20 C (68 F)
3. pH range: 6.6-9.0
4. Total ammonia (as N) shall not exceed at any time the Environmental Protection Agency's national recommended Acute Criterion or, exceed more than once in any three-year period, the Chronic Criterion as contained in Appendix III.
5. Total residual chlorine maximum: 11 μg/L

B. Coldwater Fishery Use. A coldwater fishery is a stream or river reach, lake, or impoundment where water temperature and other characteristics are suitable for support of a balanced aquatic life community which includes and propagation of coldwater fish such as brown trout, cutthroat trout, brook trout, or rainbow trout. (See Section VII, "Definitions," below.)

Standards specific to the use are as follows:

1. Dissolved oxygen minimum: 6 mg/l
2. Temperature maximum: 20 C (68 F)
3. pH range: 6.6-8.8
4. Total ammonia (as N) shall not exceed at any time the Environmental Protection Agency's national recommended Acute Criterion or, exceed more than once in any three-year period, the Chronic Criterion as contained in Appendix III.
5. Total residual chlorine maximum: 11 μg/L

C. Warmwater Fishery Use. A warmwater fishery is a stream or river reach, lake, or impoundment where water temperature and other characteristics are suitable for support of a balanced aquatic life community which includes and propagation of warmwater fish such as large-mouth black bass, small-mouth black bass, crappie, white bass, bluegill, flathead catfish, or channel catfish.

Standards specific to the use are as follows:

1. Dissolved oxygen minimum: 5 mg/l
2. Temperature maximum: 32.2 C (90 F)
3. pH range: 6.0-9.0
4. Total ammonia (as N) shall not exceed at any time the Environmental Protection Agency's national recommended Acute Criterion or, exceed more than once in any three-year period, the Chronic Criterion as contained in

Appendix III.

5. Total residual chlorine maximum: 11 μg/L

D. Primary Contact Ceremonial Use. Primary contact ceremonial use means the use of a stream or river reach, lake, spring or impoundment for religious or traditional purposes by members of the PUEBLO OF ISLETA; such use involves immersion, and intentional or incidental ingestion of water, and it requires protection of sensitive and valuable aquatic life and riparian habitat.

Standards specific to the use are as follows:

1. Bacteria [3]

   Geometric mean maximum *Escherichia coli* (E. coli): 47 per 100 ml (geometric mean calculation based on a minimum of five samples taken over a maximum of 30 days) single sample maximum: 88 colonies/100 ml.

2. The open water shall be free from algae in concentrations causing a nuisance condition or causing gastrointestinal or skin disorders.

3. Concentrations of the following substances shall not exceed:

SUBSTANCE (Total unless otherwise indicated)	Criteria
Diazinon	0.2 μg/L
Ethylbenzene	0.7 mg/L
Methoxychlor	40 μg/L
2,4-Dichlorophenoxyacetic acid	70 μg/L
Toluene	1.0 mg/L
Total trihalomethanes	80 μg/L
Trichloroethylene	5 μg/L
1,1,1-Trichloroethane	0.20 mg/L
Total Xylenes	10.0 mg/L
Antimony (dissolved)	6 μg/L
Barium (dissolved)	2.0 mg/L
Beryllium (dissolved)	4.0 μg/L
Cadmium (dissolved)	5.0 μg/L
Chromium (dissolved)	0.1 mg/L
Cyanide (amenable to chlorination)	0.2 mg/L
Fluoride	4.0 mg/L
Total Inorganic Nitrogen [4]	10.0 mg/L
Mercury	2.0 μg/L
Selenium (total recoverable)	50 μg/L
Thallium (dissolved)	2.0 μg/L

E. Primary Contact Recreational Use. Primary contact recreational use means the recreational use of a stream or river reach, lake, or impoundment involving prolonged

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[3] Until the U.S. Environmental Protection Agency approves analytical methods for E. coli, and publishes such methods in the Code of Federal Regulations (40 CFR 136), fecal coliform bacteria can be used as an alternative bacterial indicator. When so used, the applicable criteria shall be: geometric mean maximum Fecal Coliform Bacteria: 100 per 100 ml (geometric mean calculation based on a minimum of five samples taken over a maximum of 30 days) single sample maximum: 200 colonies/100 ml.

[4] Shall be calculated as: Total Inorganic Nitrogen (TIN) = Ammonia (NH_3) + Ammonium (NH_4) + Nitrate (NO_3) + Nitrite (NO_2)

contact and the risk of ingesting water in quantities sufficient to pose a health hazard; examples are swimming and water skiing.

Standards specific to the use are:

1. Bacteria [3]
   geometric mean maximum *Escherichia coli* (E. coli): 47 per 100 ml (geometric mean calculation based on a minimum of five samples taken over a maximum of 30 days) single sample maximum: 88 colonies/100 ml.
2. pH range: 6.6-9.0
3. The open water shall be free from algae in concentrations causing a nuisance condition or causing gastrointestinal or skin disorders.

F. Agricultural Water Supply Use. Agricultural water supply use means the use of water for irrigation and livestock watering.

Concentration of the following substances shall not exceed the following criteria:

SUBSTANCE	LIVESTOCK	IRRIGATION
Aluminum, dissolved	5.0 mg/L	5.0 mg/L
Arsenic, dissolved	0.2 mg/L	- -
Boron, dissolved	5.0 mg/L	0.75 mg/L
Cadmium, dissolved	0.05 mg/L	- -
Chromium, dissolved	1.0 mg/L	- -
Cobalt, dissolved	1.0 mg/L	0.05 mg/L
Copper, dissolved	0.5 mg/L	- -
Fluoride, dissolved	2.0 mg/L	1.0 mg/L
Lithium, dissolved	- -	2.5 mg/L
Mercury, Total	0.01 mg/L	- -
Molybdenum, dissolved	- -	0.01 mg/L
Selenium, total rec,	0.05 mg/L	- -
Vanadium, dissolved	0.1 mg/L	0.1 mg/L

G. Fish Culture Use. Fish culture use means the use of a stream or river reach, lake, or impoundment for production of coldwater or warmwater fish in a hatchery or rearing station. There are no standards specific to the use. The "General Standards" (Section III, above) apply.

H. Industrial Water Supply Use. Industrial water supply use means use with reference to the production of goods or services for profit. There are no standards specific to the use. The "General Standards" (Section III, above) apply.

I. Wildlife Usage. Wildlife Usage means the use of the surface waters of the PUEBLO OF ISLETA by nondomesticated plants and animals for direct water consumption, foraging or where the waters and their associated wetland/riparian areas are used for habitat, cover and/or propagation. Waters designated for wildlife usage shall not contain any substance at concentrations which would be deleterious to any nondomesticated plant or animal or that could bioaccumulate or biomagnify to such deleterious levels. The following criteria shall not be exceeded.

SUBSTANCE (Total unless otherwise indicated)	Criteria
DDT and metabolites	11 ng/L
Mercury	1.1 ng/L
PCBs (Total of all forms)	74 ng/l
Selenium (total recoverable)	2 μG/L

Section V. Designated Uses of PUEBLO OF ISLETA Surface Water Bodies

A. The designated uses are as follows for the segment of the Rio Grande that passes through the PUEBLO OF ISLETA Reservation, from a northernmost point located in Township 8 North, Range 2 East, Section 1, Southwest Quarter, approximately 1/4 mile south of the I-25 overpass over the Rio Grande, to a southernmost point located in Township 7 North, Range 2 East, Section 15, Northeast Quarter, approximately two miles north of the State Road 49 bridge over the Rio Grande, including all tributaries thereof, except for water bodies such as Drains, that are separately designated in this Section (Section V):

1. Uses:
   a. Warmwater fishery use
   b. Primary contact ceremonial use
   c. Primary contact recreational use
   d. Agricultural water supply use
   e. Industrial water supply use
   f. Wildlife usage

B. The designated uses are as follows for the Isleta Lakes:

1. Uses:
   a. Marginal coldwater fishery use
   b. Warmwater fishery use
   c. Primary contact ceremonial use
   d. Primary contact recreational use
   e. Agricultural water supply use
   f. Industrial water supply use
   g. Wildlife usage

C. The designated uses are as follows for the following water bodies:

Coyote Bay Spring	Largo Spring	Sand Spring
Carolino Spring	Lujan Spring	Cabin Spring
Gotera Spring	Padilla Spring	Questa Spring
Guadalupe Spring	Manzano Spring	Blue Spring
Hells Canyon Spring	Pitch Spring	Bear Spring
White Rock Spring	Goat Spring	Gallina Spring
Hubble Spring	Bar Chical	Rio Puerco
Sandhill Ponds		

Albuquerque Riverside Drain (segment within the Reservation)
Atrisco Riverside Drain (segment within the Reservation)
Isleta Interior Drain (segment within the Reservation)
Indian Interior Drain
Isleta Riverside Drain
Belen Riverside Drain (segment within the Reservation)
Peralta Riverside Drain (segment within the Reservation)

Tome Interior Drain (segment within the Reservation)

1. Uses:
   a. Warmwater fishery use
   b. Primary contact ceremonial use
   c. Primary contact recreational use
   e. Agricultural water supply use
   f. Industrial water supply use
   g. Wildlife usage

SECTION VI. Sampling and Analyses

A. Sample collection, preservation, and analysis used to determine water quality and to maintain the standards set forth in the Surface Water Quality Standards shall be performed in accordance with procedures prescribed by the latest EPA authoritative analytical reference, including but not limited to the latest editions of any of the following authorities: (1) American Public Health Association, "Standard Methods for the Examination of Water and Wastewater"; (2) "Methods for Chemical Analysis of Water and Wastes"; or (3) "EPA Guidelines Establishing Test Procedures for the Analysis of Pollutants" as published at 40 CFR 136.

B. Bacteriological Surveys: The monthly geometric mean is used in assessing attainment of standards when a minimum of five samples is collected in a 30-day period. When fewer than 5 samples are collected in a 30-day period, no single sample shall exceed the applicable upper limit for bacterial density set forth in Section IV.

C. Sampling Procedures:

1. Streams: Stream monitoring stations below waste discharges shall be located a sufficient distance downstream to ensure adequate vertical and lateral mixing
2. Reservoirs and Lakes: Sampling stations in reservoirs shall be located at least 250 feet from a waste discharge, and, otherwise, where the attainment of a water quality standard is to be assessed. Water quality measurements shall be taken at intervals in the water column at a sampling station. For toxic substances and nutrients, the entire water column shall be monitored. For dissolved oxygen in stratified lakes, measurements shall be made in the epilimnion. In nonstratified lakes measurements will be made at intervals throughout the entire water column.

SECTION VII. Definitions

"Acute Toxicity": Toxicity which exerts short term unacceptable impacts on representative sensitive organisms with a duration of exposure generally less than or equal to 96 hours;

"Agricultural water supply use": The use of water for irrigation and livestock;

"Algae": Simple plants without roots, stems, or leaves which contain chlorophyll and are capable of photosynthesis;

"Antidegradation": The policy set forth in U.S. Environmental Protection Agency Water Quality Standards Regulations under the Clean Water Act whereby existing uses and the level of water quality necessary to maintain those uses is maintained and protected (See 40 C.F.R. Section 131.12);

"Aquatic biota" or "Aquatic Life": Animal and plant life in the water;

"Attainable use": A use of a surface water body which has the level of water quality and other characteristics that are needed to support the use, or which would have the level of water quality and other characteristics needed to support the use upon implementation of and compliance with the pertinent narrative and numeric standards in the PUEBLO OF ISLETA Water Quality Standards. Uses are deemed attainable if they can be achieved by the imposition of effluent limits required under the federal Clean Water Act sections 301(b) [5] and 306 [6] and implementation of effectual best management practices for nonpoint source control;

"Best management practices": Practices undertaken to control, restrict, and diminish nonpoint sources of pollution, that are consistent with the purposes of the PUEBLO OF ISLETA Surface Water Quality Standards and with the narrative and numeric standards contained therein; measures, sometimes structural, that are determined to be the most effective practical means of preventing or reducing pollution of water bodies from nonpoint sources;

"Bioaccumulation": is a process by which a compound is taken up by an aquatic organism, both from water and through food;

"Biomagnification": is the process by which the concentration of a compound increases in species occupying successive trophic levels;

"Carcinogenic": Cancer producing;

"Chronic toxicity": Toxicity which exerts sublethal negative effects such as impairment of growth or reproduction, or which becomes lethal after long term exposure, generally measured in a 28-day test on representative sensitive organisms;

"Coldwater fishery": A stream reach, lake, or impoundment where water temperature and other characteristics are suitable for support and propagation of a balanced aquatic life community including coldwater fish such as brown trout, cutthroat trout, brook trout, or rainbow trout;

"Color": True color as well as apparent color. True color is the color of the water from which turbidity has been removed. Apparent color includes not only the color due to substances in solution (true color), but also that color due to suspended matter;

"Criteria": elements of surface water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use.

"Cumulative": Increasing by successive additions;

"Designated uses": Those uses set forth in the surface water quality standards herein that are to be protected;

"Dissolved oxygen (DO)": The amount of oxygen dissolved in water or the amount of oxygen available for biochemical activity in water, commonly expressed as a concentration in milligrams per

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[5] 33 U.S.C. Section § 1311(b)

[6] 33 U.S.C. Section § 1316.

liter.

"Effluent": Discharge into surface waters from other than natural sources;

"Ephemeral stream": A stream or reach that flows briefly only in direct response to precipitation or snowmelt in the immediate locality, the channel bed of which is always above the water table in the surrounding area;

"Epilimnion": The layer of water that overlies the thermocline of a lake and that is subject to the action of wind;

"Eutrophication": The maturation of a body of water, involving increasing concentration of dissolved nutrients and seasonal oxygen deficiency.

"*Escherichia coli* (E. coli)" : A bacterium which normally inhabits the human digestive system although some forms are also found in other mammals. Several forms of this bacterium that have been found to cause diarrheal diseases in humans are found in waters used for recreation and are known to have caused health problems when ingested during recreational activities.

"Existing uses": Those uses actually attained in a surface water body on or after November 28, 1975, whether or not they are referred to in the PUEBLO OF ISLETA Surface Water Quality Standards;

"Fecal coliform bacteria": Gram negative, non spore-forming rod-shaped bacteria which are present in the gut or the feces of warmblooded animals. Fecal coliform bacteria generally includes organisms which are capable of producing gas from lactose broth in a suitable culture medium within 24 hours at 44.5+/-0.2 C.

"Fish culture": The production of fish in a hatchery or rearing station;

"Fishery": A balanced, diverse community of fishes and/or other components of the aquatic biota controlled by the water quality, quantity, and habitat of a waterbody;

"Geometric Mean": Antilog of the mean of the logs of a set of numbers;

"Indigenous": Produced, growing, or living naturally in a particular region or environment;

"Industrial water supply use": The use of water with reference to the production of goods or services for profit;

"Intermittent stream": A stream or reach of a stream that flows only at certain times of the year, when receiving flow from springs, melting snow, or localized precipitation;

"LC-50": is an estimate of the toxicant concentration that would be lethal to fifty percent (50%) of the trial organisms during a specified time period;

"Marginal coldwater fishery": A stream reach, lake, or impoundment where water temperature and other characteristics are suitable for support of a balanced aquatic life community including coldwater fish (such as brown trout, cutthroat trout, brook trout, or rainbow trout), but where temperature and other characteristics may not always be suitable for propagation of coldwater fish;

"Milligrams per Liter (mg/l)": The concentration at which one milligram is contained in a volume of one liter; one milligram per liter is equivalent to one part per million (ppm) at unit density;

"Narrative standard": A standard or criterion expressed in words rather than numerically;

"Natural background": Characteristics that are not man-induced that are related to water quality; the levels of pollutants present in ambient water that are from natural, as opposed to man-induced, sources;

"Nonpoint source": A source of pollution that is not a discernible, confined, and discrete conveyance; a diffuse source which flows across natural or manmade surfaces, such as run-off from agricultural, construction, mining, or silvicultural activities, or from urban areas;

"NTU": Nephelometric Turbidity Units; a measure of turbidity in water;

"Nuisance condition": A condition involving uncontrolled growth of aquatic plants, usually caused by excessive nutrients in the water.

"Nutrient": A chemical element or inorganic compound taken in by green plants and used in organic synthesis;

"Organoleptic effects": contaminants whose presence cause adverse taste or odors in water or

fish.

"Perennial stream": A stream or reach of a stream that flows continuously throughout the year, the upper surface of which is generally lower than the water table of the region adjoining the stream;

"Persistent": Resistant to degradation or change;

"pH": The negative logarithm of the effective hydrogen-ion concentration in gram equivalents per liter; a measure of the acidity or alkalinity of a solution, increasing with increasing alkalinity and decreasing with increasing acidity;

"Picocurie (pCi)": That quantity of radioactive material producing 2.22 nuclear transformations per minute;

"Point source": Any discernible, confined, and discrete conveyance from which pollutants are or may be discharged into a water body; does not include return flows from irrigated agriculture;

"Primary contact ceremonial use": The use of a stream, reach, lake, or impoundment for religious or traditional purposes by members of the PUEBLO OF ISLETA; such use involves immersion, and intentional or incidental ingestion of water, and it requires protection of sensitive and valuable aquatic life and riparian habitat;

"Primary contact recreational use": Recreational use of a stream, reach, lake, or impoundment involving prolonged contact and the risk of ingesting water in quantities sufficient to pose a health hazard; examples are swimming and water skiing;

"Segment": A water quality standards segment, the surface waters of which have common hydrologic characteristics or flow regulation regimes, possess common natural physical, chemical, and biological characteristics, and exhibit common reactions to external stresses, such as the discharge of pollutants;

"Thermal Stratification": Horizontal layers of different densities produced in a lake caused by temperature;

"Toxicity": State or degree of being toxic or poisonous; lethal or sublethal adverse effects on representative sensitive organisms, due to exposure to toxic materials;

"Turbidity": A measure of the amount of suspended material, particles, or sediment, which has the potential for adverse impacts on aquatic biota;

"Use-attainability analysis": A structured scientific assessment of the factors affecting attainment of a use for a body of water, which assessment may include physical, chemical, biological, and economic factors, such as those referred to in 40 C.F.R. Section 131.10(g), and guidance for which may be found in U.S. Environmental Protection Agency, "Technical Support Manual: Waterbody Surveys and Assessments for Conducting Use-Attainability Analyses" (Volume l--Streams; Volume 2--Estuarine Systems; Volume 3--Lake Systems);

"Warmwater fishery": A stream reach, lake, or impoundment where water temperature and other characteristics are suitable for support and propagation of a balanced aquatic life community including warmwater fish such as Red shiner, Fathead minnow, Flathead chub, Longnose dace, Rio Grande silvery minnow, River carpsucker, Rio Grande sucker, large-mouth black bass, small-mouth black bass, crappie, white bass, bluegill, flathead catfish, or channel catfish;

"Water Contaminant": Any substance which alters the physical, chemical, or biological qualities of water;

"Waters of the United States": Means any or all of the following

a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

b) All interstate waters, including interstate ``wetlands;"

c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, ``wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could

affect interstate or foreign commerce including any such waters:

1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;
2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
3) Which are used or could be used for industrial purposes by industries in interstate commerce;

d) All impoundments of waters otherwise defined as waters of the United States under this definition;

e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

f) The territorial sea; and

g) ``Wetlands'' adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

APPENDIX I. ORGANOLEPTIC EFFECT CRITERIA

POLLUTANT	***CRITERIA***
Acenaphthene	20 μg/L
Monochlorobenzene	20 μg/L
Chlorophenols (3- or 4-)	0.1 μg/L
2,3- Dichlorophenol	40 ng/L
2,5- Dichlorophenol	0.5 μg/L
2,6 -Dichlorophenol	0.2 μg/L
3,4 -Dichlorophenol	0.3 μg/L
2,4,5- Trichlorophenol	1.0 μg/L
2,4,6- Trichlorophenol	2.0 μg/L
2,3,4,6-Tetrachlorophenol	1 μg/L
2-Methyl-4-Chlorophenol	1.8 mg/L
3-Methyl-4-Chlorophenol	3.0 mg/L
3-Methyl-6-Chlorophenol	20 μg/L
2-Chlorophenol	0.1 μg/L
Copper	1.0 mg/L
2,4-Dichlorophenol	0.3 μg/L
2,4-Dmethylphenol	400 μg/L
Hexachlorocyclopentadiene	1 μg/L
Nitrobenzene	30 μg/L
Pentachlorophenol	30 μg/L
Phenol	300 μg/L
Zinc	5.0 mg/L

APPENDIX II. Toxic Substances.

TRACE ELEMENTS, MAJOR METALS AND METALOIDS			
FRESH WATER AQUATIC LIFE CRITERIA			HUMAN HEALTH CRITERIA [1] (Based on fish consumption ONLY)
SUBSTANCE	CHRONIC TOXICITY (μg/L) [2]	ACUTE TOXICITY (μg/L) [2]	units / Liter NOT TO EXCEED
Aluminum, dissolved	87	750	--
Antimony, dissolved	--	--	4.3 mg/L
Arsenic, dissolved	150	340	4.2 μg/L
Cadmium, dissolved	$(e^{(0.7409\,[\ln\{hd\}]-4.719)})\,(0.938)$	$(e^{(1.0166\,[\ln\{hd\}]-3.924)})(0.973)$	--
Chromium, dissolved	$(e^{(0.819\,[\ln\{hd\}]+0.6848)})\,(0.86)$	$(e^{(0.819\,[\ln\{hd\}]+3.7256)})\,(0.316)$	--
Copper, dissolved	$(e^{(0.8545\,[\ln\{hd\}-1.702)})\,(0.96)$	$(e^{(0.9422\,[\ln\{hd\}-1.7)})\,(0.96)$	--
Iron, dissolved	1,000	--	--

[1] The values stated below as "HUMAN HEALTH CRITERIA" for the individual pollutants are based on the assumption that fish from the surface waters covered by the PUEBLO OF ISLETA Surface Water Quality Standards are consumed but waters from these surface waters are not regularly ingested. A risk of 10^{-6} is hereby designated for protection from carcinogens.

[2] Chronic and acute criteria shall be applied to individual datum, no averaging is allowed. Acute criteria shall not be exceeded. Chronic criteria shall not be exceeded more than once in any three year period.

TRACE ELEMENTS, MAJOR METALS AND METALOIDS (CONTINUED)			
FRESH WATER AQUATIC LIFE CRITERIA			HUMAN HEALTH CRITERIA [1] (Based on fish consumption ONLY)
SUBSTANCE	CHRONIC TOXICITY (μg/L)[2]	ACUTE TOXICITY (μg/L)[2]	units / Liter NOT TO EXCEED
Lead, dissolved	$(e^{(1.273\,[\ln\{hd\}-4.705)})$ (cf) [3]	$(e^{(1.273\,[\ln\{hd\}-1.46)})$ (cf) [3]	- -
Mercury, total	0.012	2.4	51 ng/L [4]
Nickel, dissolved	$(e^{(0.846[\ln\{hd\}]+0.0584)})$ (0.997)	$(e^{(0.846[\ln\{hd\}]+2.255)})$(0.998)	4.6 mg/L
Selenium, total recoverable	5	20	11 mg/L
Silver, dissolved	- -	$(e^{(1.72[\ln\{hd\}]-6.6825)})$	- -
Thallium, dissolved	- -	- -	6.3 μg/L
Zinc, dissolved	$(e^{(0.8473[\ln\{hd\}]+0.884)})$(0.986)	$(e^{(0.8473[\ln\{hd\}]+0.8618)})$	- -

[3] The hardness-dependent formulae for lead must be multiplied by a conversion factor (cf) to be expressed as dissolved values. The CV for both the chronic and the acute criterion is CV = 1.46203 - [ln(hardness)(0.145712)]

[4] Concentrations of mercury from all sources shall not result in methylmercury concentrations in fish tissue that exceed 0.3 mg/kg.

Non-Metallic Inorganics			
FRESH WATER AQUATIC LIFE CRITERIA			HUMAN HEALTH CRITERIA [1] (Based on fish consumption ONLY)
SUBSTANCE	CHRONIC TOXICITY (μg/L) [2]	ACUTE TOXICITY (μg/L) [2]	units / Liter NOT TO EXCEED
Chlorine, total residual	11	19	- -
Cyanide, amenable to chlorination	5.2	22	220 mg/L
Sulfide, hydrogen	2.0	- -	- -

ORGANIC CONTAMINATES **HIGH MOLECULAR WEIGHT POLYNUCLEAR AROMATIC HYDROCARBONS**			
FRESH WATER AQUATIC LIFE CRITERIA			HUMAN HEALTH CRITERIA [1] (Based on fish consumption ONLY)
SUBSTANCE	CHRONIC TOXICITY (μg/L) [2]	ACUTE TOXICITY (μg/L) [2]	units / Liter NOT TO EXCEED
Fluoranthene	- -	- -	370 μg/L

ORGANIC CONTAMINATES **PHTHALATES**			
FRESH WATER AQUATIC LIFE CRITERIA			HUMAN HEALTH CRITERIA [1] (Based on fish consumption ONLY)
SUBSTANCE	CHRONIC TOXICITY (μg/L) [2]	ACUTE TOXICITY (μg/L) [2]	units / Liter NOT TO EXCEED
Bis (2-Ethylhexyl) Phthalate	- -	- -	5.9 μg/L
Diethyl Phthalate	- -	- -	120 mg/L
Butylbenzyl Phthalate	- -	- -	5.2 mg/L
Di-n-Butyl Phthalate	- -	- -	12 mg/L

ORGANIC CONTAMINATES **PHENOLS**			
FRESH WATER AQUATIC LIFE CRITERIA			HUMAN HEALTH CRITERIA [1] (Based on fish consumption ONLY)
SUBSTANCE	CHRONIC TOXICITY (μg/L) [2]	ACUTE TOXICITY (μg/L) [2]	units / Liter NOT TO EXCEED
Phenol	- -	- -	4.6 g/L

ORGANIC CONTAMINATES **PESTICIDES AND POLYCHLORINATED BIPHENYLS**			
FRESH WATER AQUATIC LIFE CRITERIA			HUMAN HEALTH CRITERIA [1] (Based on fish consumption ONLY)
SUBSTANCE	CHRONIC TOXICITY (μg/L) [2]	ACUTE TOXICITY (μg/L) [2]	units / Liter NOT TO EXCEED
Chlordane	0.0043	2.4	2.2 ng/L
Chloropyrifos	0.041	0.083	- -
DDD	- -	- -	0.84 ng/L
DDE	- -	- -	0.59 ng/L
DDT	0.001	1.1	0.59 ng/L
Gamma-Hexachloro-cyclo Hexane (Lindane)	- -	0.95	63 ng/L
Polychlorinated Biphenyls (total PCBs)	0.014	- -	0.17 ng/L

ORGANIC CONTAMINATES **VOLATILE AROMATIC HYDROCARBONS**			
FRESH WATER AQUATIC LIFE CRITERIA			HUMAN HEALTH CRITERIA [1] (Based on fish consumption ONLY)
SUBSTANCE	CHRONIC TOXICITY (μg/L) [2]	ACUTE TOXICITY (μg/L) [2]	units / Liter NOT TO EXCEED
Benzene	- -	- -	71 μg/L
Ethylbenzene	- -	- -	29 mg/L
Toluene	- -	- -	200 mg/L

ORGANIC CONTAMINATES **CHLORINATED BENZENES**			
FRESH WATER AQUATIC LIFE CRITERIA			HUMAN HEALTH CRITERIA [1] (Based on fish consumption ONLY)
SUBSTANCE	CHRONIC TOXICITY (μg/L) [2]	ACUTE TOXICITY (μg/L) [2]	units / Liter NOT TO EXCEED
Dichlorobenzene (1,3- or 1,4-	- -	- -	2.6 mg/L

Hexachlorobenzene	--	--	0.77 ng/L
1,2,4-Trichlorobenzene	--	--	0.94 mg/L
ORGANIC CONTAMINATES **VOLATILE HALOGENATED ALKANES**			
FRESH WATER AQUATIC LIFE CRITERIA			HUMAN HEALTH CRITERIA [1] (Based on fish consumption ONLY)
SUBSTANCE	CHRONIC TOXICITY (μg/L) [2]	ACUTE TOXICITY (μg/L) [2]	units / Liter NOT TO EXCEED
Bromoform	--	--	360 μg/L
Chloroform	--	--	470 μg/L
Chlorodibromomethane	--	--	34 μg/L
Dichlorobromomethane	--	--	46 μg/L
1,2-Dichloroethane	--	--	99 μg/L
Methylene Chloride	--	--	1.6 mg/L
Tetrachloroethane	--	--	11 μg/L
Trichloroethane (1,1,1- or 1,1,2- or mixtures thereof)	--	--	42 μg/L

APPENDIX III. A. CHRONIC CRITERIA FOR TOTAL AMMONIA IN mg NITROGEN / L WHEN EARLY FISH LIFE STAGES ARE **PRESENT**

TEMPERATURE, °C

pH	0	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	6.67	6.67	6.46	6.06	5.68	5.33	4.99	4.68	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46
6.6	6.57	6.57	6.36	5.97	5.59	5.25	4.92	4.61	4.32	4.05	3.80	3.56	3.34	3.13	2.94	2.75	2.58	2.42
6.7	6.44	6.44	6.25	5.86	5.49	5.15	4.83	4.52	4.24	3.98	3.73	3.50	3.28	3.07	2.88	2.70	2.53	2.37
6.8	6.29	6.29	6.10	5.72	5.36	5.03	4.72	4.42	4.14	3.89	3.64	3.42	3.20	3.00	2.82	2.64	2.47	2.32
6.9	6.12	6.12	5.93	5.56	5.21	4.89	4.58	4.30	4.03	3.78	3.54	3.32	3.11	2.92	2.74	2.57	2.41	2.25
7.0	5.91	5.91	5.73	5.37	5.04	4.72	4.43	4.15	3.89	3.65	3.42	3.21	3.01	2.82	2.64	2.48	2.32	2.18
7.1	5.67	5.67	5.49	5.15	4.83	4.53	4.25	3.98	3.73	3.50	3.28	3.08	2.88	2.70	2.53	2.38	2.23	2.09
7.2	5.39	5.39	5.22	4.90	4.59	4.31	4.04	3.78	3.55	3.33	3.12	2.92	2.74	2.57	2.41	2.26	2.12	1.99
7.3	5.08	5.08	4.92	4.61	4.33	4.06	3.80	3.57	3.34	3.13	2.94	2.76	2.58	2.42	2.27	2.13	2.00	1.87
7.4	4.73	4.73	4.59	4.30	4.03	3.78	3.55	3.32	3.12	2.92	2.74	2.57	2.41	2.26	2.12	1.98	1.86	1.74
7.5	4.36	4.36	4.23	3.97	3.72	3.49	3.27	3.06	2.87	2.69	2.53	2.37	2.22	2.08	1.95	1.83	1.72	1.61
7.6	3.98	3.98	3.85	3.61	3.39	3.18	2.98	2.79	2.62	2.45	2.30	2.16	2.02	1.90	1.78	1.67	1.56	1.47
7.7	3.58	3.58	3.47	3.25	3.05	2.86	2.68	2.51	2.36	2.21	2.07	1.94	1.82	1.71	1.60	1.50	1.41	1.32
7.8	3.18	3.18	3.09	2.89	2.71	2.54	2.38	2.23	2.10	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
7.9	2.80	2.80	2.71	2.54	2.38	2.24	2.10	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17	1.10	1.03
8.0	2.43	2.43	2.36	2.21	2.07	1.94	1.82	1.71	1.60	1.50	1.41	1.32	1.24	1.16	1.09	1.02	0.96	0.897
8.1	2.10	2.10	2.03	1.91	1.79	1.68	1.57	1.47	1.38	1.29	1.21	1.14	1.07	1.00	0.94	0.879	0.824	0.773
8.2	1.79	1.79	1.74	1.63	1.53	1.43	1.34	1.26	1.18	1.11	1.04	0.973	0.912	0.855	0.802	0.752	0.705	0.661
8.3	1.52	1.52	1.48	1.39	1.30	1.22	1.14	1.07	1.00	0.941	0.882	0.827	0.775	0.727	0.682	0.639	0.599	0.562
8.4	1.29	1.29	1.25	1.17	1.10	1.03	0.97	0.906	0.849	0.796	0.747	0.700	0.656	0.615	0.577	0.541	0.507	0.475
8.5	1.09	1.09	1.06	0.990	0.928	0.870	0.816	0.765	0.717	0.672	0.630	0.591	0.554	0.520	0.487	0.457	0.428	0.401
8.6	0.920	0.920	0.892	0.836	0.784	0.735	0.689	0.646	0.606	0.568	0.532	0.499	0.468	0.439	0.411	0.386	0.362	0.339
8.7	0.778	0.778	0.754	0.707	0.663	0.622	0.583	0.547	0.512	0.480	0.450	0.422	0.396	0.371	0.348	0.326	0.306	0.287
8.8	0.661	0.661	0.641	0.601	0.563	0.528	0.495	0.464	0.435	0.408	0.383	0.359	0.336	0.315	0.296	0.277	0.260	0.244
8.9	0.565	0.565	0.548	0.513	0.481	0.451	0.423	0.397	0.372	0.349	0.327	0.306	0.287	0.269	0.253	0.237	0.222	0.208
9.0	0.486	0.486	0.471	0.442	0.414	0.389	0.364	0.342	0.320	0.300	0.281	0.264	0.247	0.232	0.217	0.204	0.191	0.179

APPENDIX III. B.. CHRONIC CRITERIA FOR TOTAL AMMONIA IN mg NITROGEN / L WHEN EARLY FISH LIFE STAGES ARE **ABSENT**

TEMPERATURE, °C

pH	0-7	8	9	10	11	12	13	14	15 [1]
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36
6.7	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25
6.8	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93
7.0	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71
8.0	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641
8.9	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548
9.0	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471

[1] At or above 15 °C the chronic criterion is the same as that in Appendix III. A.

APPENDIX III. C.

TOTAL AMMONIA, ACUTE CRITERIA , (mg Nitrogen/L)		
pH	**COLDWATER DESIGNATED WATER BODY**	**WARMWATER DESIGNATED WATER BODY**
6.5	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.65	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.40
8.1	4.64	6.95
8.2	3.83	5.72
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0	0.885	1.32