NAVAJO NATION SURFACE WATER QUALITY STANDARDS 2007

(Photograph of the Little Colorado River near Grand Falls on January 4, 2005)

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PART I
SURFACE WATER QUALITY STANDARDS - GENERAL PROVISIONS

§ 101 TITLE

These regulations are cited as the Navajo Nation Surface Water Quality Standards (NNSWQS).

§ 102 AUTHORITY

These regulations are adopted pursuant to §104(b) and §201 of the Navajo Nation Clean Water Act (NNCWA), C.J.Y.-81-99; they establish surface water quality standards applicable to the surface waters of the Navajo Nation pursuant to §303 and §518 of the Federal Clean Water Act.

§ 103 PURPOSE

A. The purpose of these surface water quality standards is to protect, maintain, and improve the quality of Navajo Nation surface waters for public and private drinking water supplies; to promote the habitation, growth, and propagation of native and other desirable aquatic plant and animal life; to protect existing, and future, domestic, cultural, agricultural, recreational and industrial uses; and to protect any other existing and future beneficial uses of Navajo Nation surface waters. These standards provide the water quality goals for each body of surface water within the Navajo Nation and provide the basis for establishing treatment controls and strategies through regulation.

B. These standards apply to all Waters of the Navajo Nation.

§ 104 DEFINITIONS

A. "Acute Standard" means a standard that applies to any single sample; acute standards shall not be exceeded at any time.

B. "Acute Toxicity" means toxicity involving a stimulus severe enough to induce a deleterious response (e.g., mortality, disorientation, immobilization) in 96 hours of exposure or less.

C. "Agricultural Water Supply (AgWS)" means the use of the water for the irrigation of crops that could be used for human consumption.

D. "Aquatic and Wildlife Habitat (A&WHbt)" means the use of the water by animals, plants or other organisms, including salmonids and non-salmonids, and non-domestic animals

(including migratory birds) for habitation, growth or propagation. Water body supports or is capable of supporting either cold water fishes, including trout species or warm water fishes including bass species, catfish species, and bluegill species. Water body supports the aquatic communities upon which cold and warm water fishes depend. Cold waters are waters that typically have temperatures below 20 ^{o}C. Warm waters are waters that typically have temperatures exceeding 20 ^{o}C. Water body supports prey base for non-domestic animals (including migratory birds).

E. "Best Management Practices" or "BMPs" means methods, measures or practices selected by an agency to meet its nonpoint source pollution control needs, or, in the case of the National Pollutant Discharge Elimination System, schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollution of waters of the Navajo Nation. BMPs include, but are not limited to, structural and non-structural controls, treatment requirements, operation and maintenance procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage, and can be applied before, during, or after pollution-producing activities to reduce or eliminate the introduction of pollutants into Waters of the Navajo Nation.

F. "Bioaccumulation" means the process of a chemical accumulating in a biological food chain by being passed from one organism to another as the contaminated organism is preyed upon by another organism.

G. "Bioconcentration" means the process by which there is a net accumulation of a chemical directly from water into aquatic organisms resulting from simultaneous uptake and elimination.

H. "Chronic Standard" means a standard that applies to the arithmetic mean of samples collected during four consecutive days; chronic standards shall not be exceeded more than once every three years.

I. "Chronic Toxicity" means toxicity involving a stimulus that lingers or continues for a relatively long period relative to the life span of an organism before effects are observed (e.g., 28 days for small fish test species). Chronic effects include, but are not limited to, lethality, growth impairment, behavioral modifications, disease and reduced or impaired reproduction.

J. "Clean Water Act" means the Federal Water Pollution Control Act of 1972, as amended, 33 U.S.C., § 1251 *et seq*.

K. "Criteria" means elements of water quality standards that are expressed as pollutant

concentrations, levels or narrative statements representing a water quality that supports a

designated use. When criteria are met, water quality should protect the designated use.

L. “Deep lake” means a lake or reservoir with an average depth over 6 meters.

M. "Designated Use" means a use described in §205 and specified in Table 205.1 of these standards for a surface water body or surface water body segment of the Navajo Nation.

N. “Diel” means a measurement obtained during 24 hours.

O. "Director" means the Executive Director of the Navajo Nation Environmental Protection Agency.

P. "Dissolved" means the concentration of a constituent in a water sample that is analytically determined following filtration using a 0.45 micron filter.

Q. "Domestic Water Supply (Dom)" means the use of the water as a potable water supply.

R. "Ephemeral Water" means a water that has a channel that is at all times above the water table, and that flows only in direct response to precipitation.

S. “Fish Consumption (FC)” means the use of the water by humans for harvesting aquatic organisms for consumption. Harvestable aquatic organisms include, but are not limited to, fish, shell-fish, turtles, crayfish, and frogs.

T. "Geometric Mean" means the nth root of the product of n items or values. A minimum of four samples shall be used to calculate the geometric mean. The geometric mean is calculated using the following formula:

$$GM_Y = \sqrt[n]{(Y_1)(Y_2)(Y_3)...(Y_n)}$$

U. "Hardness" means the sum of the calcium and magnesium concentrations, expressed as calcium carbonate ($CaCO_3$), in milligrams per liter. Hardness analysis is done from a dissolved water sample.

V. “Igneous lake” means a lake or reservoir located in volcanic or basaltic geology and soils.

W. "Intermittent Stream" means a watercourse that flows only at certain times of the year, receiving water from springs or surface sources; also, a watercourse that does not flow continuously, when water losses from evaporation or seepage exceed available stream flow.

X. "Livestock Watering (LW)" means water used by livestock for consumption (ingestion). -

Y. "Micrograms per Liter (µg/l)" means micrograms of solute per liter of solution (equivalent to parts per billion when the specific gravity of the solution = 1.000).

Z. "Milligrams per Liter (mg/l)" means milligrams of solute per liter of solution (equivalent to parts per million when the specific gravity of the solution = 1.000).

AA. "Nonpoint Source" means any source of water pollution that is not a point source, as defined herein.

BB. "NTU" is a nephelometric turbidity unit based on a standard method using formazin polymer or its equivalent as the standard reference suspension. Nephelometric turbidity measurements expressed in units of NTU are numerically identical to the same measurements expressed in units of FTU (formazin turbidity units).

CC. "Oil" means oil of any kind or in any form, including but not limited to petroleum, crude oil, gasoline, fuel oil, diesel oil, lubricating oil, oil refuse, sludge, vegetable oil, animal oil, and oil mixed with wastes.

DD. “Perennial Water" means a flowing or non-flowing surface water that is present continuously throughout the year.

EE. “Photic zone” means the lighted region of a lake where photosynthesis takes place. Extends down to a depth where plant growth and respiration are balanced by the amount of light available.

FF. "Picocurie (pCi)" is a measure of radioactivity equal to the quantity of a radioactive substance in which the rate of disintegrations is 2.22 per minute. Expressed in picocuries per liter (pCi/l).

GG. "Point Source" means any discernible, confined, and discrete conveyance including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, landfill leachate collection system, container, rolling stock (except to the extent excluded from the NPDES program by section 601 of the National and Community Services Act of 1990, P.L. 101-610, 104 Stat. 3185), concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged into a body of water. This term does not include agricultural storm water discharges or return flows from irrigated agriculture.

HH. "Pollutant" means fluids, contaminants, toxic wastes, toxic pollutants, dredge spoil, solid waste, substances and chemicals, pesticides, herbicides, fungicides, rodenticides, fertilizers, and other agricultural chemicals, incinerator residue, sewage, garbage, sewage sludge,

munitions, petroleum products, oils, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, dirt, and mining, industrial,

municipal, and agricultural wastes or any other liquid, solid, gaseous, or hazardous substance.

II. "Pollution" means any man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of waters of the Navajo Nation.

JJ. "Primary Human Contact (PrHC)" means the use of the water that causes the human body to come into direct contact with the water, typically to the point of submergence in the water body, or probable ingestion of the water, or contact by the water with membrane material of the body. Examples include ceremonial uses, swimming and water-skiing.

KK. "Recreational Uses" are the Primary Human Contact and Secondary Human Contact designated uses.

LL. "Regional Administrator" means the Regional Administrator of Region 9 of the U.S. Environmental Protection Agency.

MM. "Secondary Human Contact (ScHC) " means the use of water which may cause the water to come into direct contact with the skin of the body but normally not to the point of submergence, ingestion of the water, or contact of the water with membrane material of the body. Such contact would occur incidentally and infrequently. Examples include ceremonial and other cultural uses, boating and fishing.

NN. “Sedimentary lake” means a lake or reservoir in sedimentary or karst geology and soils.

OO. “Shallow lake” means a lake or reservoir with an average depth of less than 3 meters and a maximum depth of less than 4 meters.

PP. "TDS" means total dissolved solids, also termed "total filterable residue."

QQ. "Total Concentration" means the concentration of a constituent in a water sample which is analytically determined without filtration through a 0.45 micron filter.

RR. "Total Nitrogen" means the sum of the concentrations of ammonia (NH_3), ammonium ion (NH_{4+}), nitrite (NO_{2-}), nitrate (NO_{3-}) and dissolved and particulate organic nitrogen in a water sample, expressed as elemental nitrogen (N).

SS. "Total Phosphorus" means all the phosphorus species present in a water sample, regardless of form, as measured by a persulfate digestion procedure.

TT. "Toxic Pollutant" means a pollutant, or combination of pollutants, including disease-causing agents, 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 the Administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring.

UU. "Turbidity" means the optical clarity of water that causes incident light to be scattered or absorbed rather than transmitted in straight lines.

VV. "Unique Waters" means ground or surface waters that have been determined to be of exceptional cultural, ecological and/or recreational significance due to the nature of their flora, fauna, water quality, aesthetic value, or wilderness characteristics.

WW. "Wastewater Mixing Zone" means a defined and limited part of a surface water body, with defined boundaries adjacent to a point source of pollution, in which initial dilution of wastewater occurs.

XX. "Waters of the Navajo Nation" means all surface waters including, but not limited to, portions of rivers, streams (including perennial, intermittent and ephemeral streams and their tributaries), lakes, ponds, dry washes, marshes, waterways, wetlands, mudflats, sandflats, sloughs, prairie potholes, wet meadows, playa lakes, impoundments, riparian areas, springs, and all other bodies or accumulations of water, surface, natural or artificial, public or private, including those dry during part of the year, which are within or border the Navajo Nation. This definition shall be interpreted as broadly as possible to include all waters which are currently used, were used in the past, or may be susceptible to use in interstate, intertribal or foreign commerce. Consistent with federal requirements, the Director may exclude from waters of the Navajo Nation certain waste treatment systems.

YY. "Wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

ZZ. "Zone of passage" means a continuous water route of volume, cross-sectional area and quality necessary to allow passage of free-swimming or drifting organisms with no toxic effect produced on the organisms.

§ 105 SEVERABILITY

If any provision of these regulations or the application thereof to any person or circumstance is held invalid, the remainder of these regulations and the application of such provision to other persons or

circumstances shall remain unaffected, and to this end the provisions of these regulations are declared to be severable.

PART II
SURFACE WATER QUALITY STANDARDS

§ 201 ANTIDEGRADATION POLICY

The following antidegradation policy is promulgated under § 201(a) of the Navajo Nation Clean Water Act (C.J.Y.-81-99).

1. Existing designated uses and the level of water quality necessary to protect the existing designated uses shall be maintained and protected.

2. Where the quality of any water body is of a higher quality than is necessary to support existing designated uses, including but not limited to the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water body, that quality shall be maintained and protected unless the Navajo Nation finds, after full interagency coordination and public participation, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the water body is located. In allowing such degradation or lower water quality, the Navajo Nation shall assure water quality adequate to protect existing designated uses fully.

3. The Navajo Nation 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 pollution control.

4. Where high quality waters or Unique Waters constitute an outstanding resource of the Navajo Nation, such as waters of National parks and monuments, Tribal parks and wildlife refuges, and other waters of exceptional recreational, cultural or ecological significance, that water quality shall be maintained and protected.

5. This policy of antidegradation includes protection against water quality impairment associated with thermal discharges and shall be implemented consistent with §316 of the Federal Clean Water Act (33 U.S.C. §1326).

§ 202 NARRATIVE SURFACE WATER QUALITY STANDARDS

A. All Waters of the Navajo Nation shall be free from pollutants in amounts or combinations that, for any duration:

   1. Cause injury to, are toxic to, or otherwise adversely affect human health, public safety, or public welfare.

2. Cause injury to, are toxic to, or otherwise adversely affect the habitation, growth, or propagation of indigenous aquatic plant and animal communities or any member of these communities; of any desirable non-indigenous member of these communities; of waterfowl accessing the water body; or otherwise adversely affect the physical, chemical, or biological conditions on which these communities and their members depend.

3. Settle to form bottom deposits, including sediments, precipitates and organic materials, that cause injury to, are toxic to, or otherwise adversely affect the habitation, growth, or propagation of indigenous aquatic plant and animal communities or any member of these communities; of any desirable non-indigenous member of these communities; of waterfowl accessing the water body; or otherwise adversely affect the physical, chemical, or biological conditions on which these communities and their members depend.

4. Cause physical, chemical, or biological conditions that promote the habitation, growth, or propagation of undesirable, non-indigenous species of plant or animal life in the water body.

5. Cause solids, oil, grease, foam, scum, or any other form of objectionable floating debris on the surface of the water body; may cause a film or iridescent appearance on the surface of the water body; or that may cause a deposit on a shoreline, on a bank, or on aquatic vegetation.

6. Cause objectionable odor in the area of the water body.

7. Cause objectionable taste, odor, color, or turbidity in the water body.

8. Cause objectionable taste in edible plant and animal life, including waterfowl, that reside in, on, or adjacent to the water body.

9. Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses.

B. All Waters of the Navajo Nation shall be free of toxic pollutants from other than natural sources in amounts, concentrations, or combinations which affect the propagation of fish or which are toxic to humans, livestock or other animals, fish or other aquatic organisms, wildlife using aquatic environments for habitation or aquatic organisms for food, or which will or can reasonably be expected to bioaccumulate in tissues of fish, shellfish, or other aquatic organisms to levels which will impair the health of aquatic organisms or wildlife or result in uancceptable tastes, odors or health risks to human consumers.

C. No person shall place animal carcasses, refuse, rubbish, demolition or construction debris,

trash, garbage, motor vehicles, motor vehicle parts, batteries, appliances, tires, or other solid waste into Waters of the Navajo Nation or onto their banks.

§ 203 IMPLEMENTATION PLAN

The Navajo Nation Water Quality Program (NNWQP) within the Navajo Nation Environmental Protection Agency (NNEPA), pursuant to the NNCWA, shall implement these water quality standards, including the antidegradation policy, by establishing and maintaining controls on the introduction of pollutants into waters of the Navajo Nation. Specifically, NNWQP shall do the following:

1. Develop a comprehensive database that fully identifies all waters of the Navajo Nation, their quality and designated uses, and any activities which may detrimentally impact those waters and uses.

2. Monitor water quality to assess the effectiveness of pollution controls, and to determine whether designated uses are being supported and narrative and numeric water quality standards are being met.

3. Obtain information as to the impact of effluent on receiving waters.

4. Advise prospective dischargers of discharge requirements.

5. Assess the probable impact of effluent on the capability of receiving waters to support designated uses and achieve narrative and numeric water quality standards.

6. Require the highest degree of wastewater treatment practicable to maintain designated uses and existing water quality.

7. Develop water quality-based effluent limitations and provide comment on technology-based effluent limitations as appropriate for inclusion in any permit to be issued to a discharger pursuant to §301 of the NNCWA, C.J.Y.-81-99, and §402 of the Federal Clean Water Act (33 U.S.C. §1342).

8. Require that effluent limitations or any other appropriate limitations applicable to activities with the potential for discharge to waters of the Navajo Nation be included in any permit as a condition for Navajo Nation certification pursuant to §209 of the NNCWA, C.J.Y.-81-99, and §401 of the Federal Clean Water Act (33 U.S.C. §1341).

9. Coordinate water pollution control activities with other Navajo Nation, 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 NNCWA and any regulations promulgated thereunder (including these water quality standards), and in order to support the enforcement of federal permits issued by the U.S.EPA and permits issued by the NNEPA.

11. Provide technical assistance to wastewater treatment facility operators.

12. Assist publicly owned wastewater treatment facilities in the pursuit of wastewater treatment construction funds through construction grants authorized by the Federal Clean Water Act (33 U.S.C. §1281) and other federal funding available for this purpose.

13. Encourage, in conjunction with other agencies, voluntary implementation of best management practices (BMPs) to control nonpoint sources of pollutants in order to support designated uses and meet Navajo Nation narrative and numeric water quality standards.

14. Examine existing and future Navajo Nation policies pertaining to septic systems, solid waste disposal, range management practices, and any other relevant activities to ensure that these policies are sufficient to meet narrative and numeric water quality standards.

15. Require that sufficient instream flows be maintained to support designated uses and meet narrative and numeric water quality standards.

16. Require that surface and groundwater withdrawals do not cause degradation of surface or ground water bodies.

17. Conduct an antidegradation analysis for regulated actions that may potentially impair water quality.

§ 204 NARRATIVE NUTRIENT STANDARD IMPLEMENTATION PLAN

A. The implementation plan in this Section applies to lakes and reservoirs.

B. The narrative nutrient standard in Section 202(A)(9) is met if sampling conducted during the peak season for lake productivity shows:

   1. The mean chlorophyll-a concentration is less than the lower value in the target range chlorophyll-a for the lake category; or

   2. The mean chlorophyll-a concentration is within the target range for the lake category and:

      a. The mean blue green algae count is at or below 20,000 per milliliter, and

b. The blue green algae count is less than 50 percent of the total algae count, and

c. There is no evidence of nutrient-related impairments such as:

i. An exceedance of dissolved oxygen or pH exceedance;

ii. A fish kill occurring with dissolved oxygen or pH exceedance;

iii. A fish kill or other aquatic organism mortality occurring with algal toxicity;

iv. Secchi depth is less than the lower value prescribed for the lake category;

v. A nuisance algal bloom is present in the lacustrine portion of the lake or reservoir; or

vi. The concentration of total phosphorous, total nitrogen, or total Kjeldahl nitrogen (TKN) is greater than the upper value in the range prescribed for the lake category;

3. Submerged aquatic vegetation covers 50 percent or less of the lake bottom of a shallow lake and there is less than a 5 milligram per liter change in diel dissolved concentrations measured within the photic zone.

C. The following threshold ranges apply during the peak season for lake productivity:

1. Warm water lakes peak season, April - October;

2. Cold water lakes peak season, May – September.

D. Table 204.1 lists the numeric targets for lakes and reservoirs:

Table 204.1 Numeric Targets for Lakes and Reservoirs

Designated Use	Lake Category	Chl-a (ug/L)	Secchi Depth (m)	Total Phosphorus (ug/L)	Total Nitrogen (mg/L)	Total Kjeldahl Nitrogen (TKN)	Blue-Green Algae (per ml)	Blue-Green Algae (% of total)	Dissolved Oxygen (mg/L)	pH
PrHC	Deep	10–15	1.5-2.5	70-90	1.2-1.4	1.0-1.1	20,000			6.5-9.0
	Shallow	10-15	1.5-2.5	70-90	1.2-1.4	1.0-1.1				
	Igneous	20-30	0.5-1.0	100-125	1.5-1.7	1.2-1.4				
	Sedimentary	20-30	1.5-2.0	100-125	1.2-1.4	1.2-1.4				
A&WHbt (cold water)	All	5-15	1.5-2.0	50-90	1.0-1.4	0.7-1.1		<50		6.5-9.0
A&WHbt (warm water)	All	25-40	0.8-1.0	115-140	1.6-1.8	1.3-1.6				
Dom	All	10-20	0.5-1.5	70-100	1.2-1.5	1.0-1.2	20,000			5.0-9.0

§ 205 DESIGNATED USE CLASSIFICATION SYSTEM FOR NAVAJO NATION SURFACE WATERS

A. Designated Uses

The following are the designated uses for the surface waters of the Navajo Nation:

Dom **Domestic Water Supply**: Water body supports use of the water as a potable water supply.

FC **Fish Consumption**: Water body supports the use of the water by humans for harvesting aquatic organisms for consumption. Harvestable aquatic organisms include, but are not limited to, fish, shell-fish, turtles, crayfish, and frogs.

PrHC **Primary Human Contact**: Water body supports the use of the water that causes the human body to come into direct contact with the water, typically to

the point of submergence in the water body, or probable ingestion of the water, or contact by the water with membrane material of the body. Examples include ceremonial uses, swimming and water-skiing.

ScHC **Secondary Human Contact:** Water body supports the use of water which may cause the water to come into direct contact with the skin of the body, but normally not to the point of submergence, ingestion of the water, or contact of the water with membrane material of the body. Such contact would occur incidentally and infrequently. Examples include ceremonial and other cultural uses, boating and fishing.

AgWS **Agricultural Water Supply**: Water body supports the use of the water for the irrigation of crops which could be used for human consumption.

A&WHbt **Aquatic and Wildlife Habitat:** Water body supports the use of the water by animals, plants or other organisms, including salmonids and non-salmonids, and non-domestic animals (including migratory birds) for habitation, growth or propagation. Water body supports or is capable of supporting either cold water fishes, including trout species or warm water fishes including bass species, catfish species, and bluegill species. Water body supports the aquatic communities upon which cold and warm water fishes depend. Cold waters are waters that typically have temperatures below 20 ^{o}C. Warm waters are waters that typically have temperatures exceeding 20 ^{o}C. Water body supports prey base for non-domestic animals (including migratory birds).

LW **Livestock Watering**: Water body supports the use of the water by livestock for consumption (ingestion).

B. Designated Use Modifications

Modifications to Designated Uses, including removal of a use or establishing a use subcategory, may be made if the requirements of 40 CFR Section 131.10 are met.

C. Designated Use Table

Table 205.1 lists the uses for the currently designated surface waters of the Navajo Nation. Each surface water body is geographically listed according to the Hydrologic Unit Code system developed by the United States Geological Survey (USGS) and published in the USGS's "Water Supply Paper Number 2294". The name of the water body is followed by columns listing the Subregion (or Basin) and Cataloging Unit. A subregion includes the area drained by a river system, a reach of a river and its tributaries in that reach. A cataloging unit

is a geographic area representing part or all of a surface drainage basin, a combination of drainage basins, or a distinct hydrologic feature.

D. Applicability of Designated Uses

Uses that are designated for all Waters of the Navajo Nation are Fish Consumption (FC), Secondary Human Contact (ScHC), Aquatic and Wildlife Habitat (A&WHbt), and Livestock Watering (LW).

If a surface water has more than one designated use listed in Table 205.1, the most stringent water quality standard applies.

Water quality standards established for the attainment and maintenance of upstream surface water designated uses shall be sufficient to protect the attainment and maintenance of downstream surface water designated uses.

§ 206 NUMERIC SURFACE WATER QUALITY STANDARDS

When a Water of the Navajo Nation has more than a single designated use, the applicable numeric standards shall be the most stringent of those established for that body of water.

A. The numeric surface water quality standards for all Designated Uses may be found in Table 206.1.

B. ***E. coli* Bacteria**: The following water quality standards for *Escherichia coli (E. coli)* are expressed in Colony Forming Units per 100 milliliters of water (CFU/100 ml), or as a Most Probable Number (MPN):

E. coli	**Dom**	**PrHC**	**ScHC**
Geometric mean (minimum of four samples in 30 days)	126	126	126
Single sample maximum	235	235	575

C. **pH:** The following water quality standards for pH are expressed in standard units:

pH	**Dom**	**PrHC, ScHC, & A&WHbt**	**AgWS**	**LW**
Maximum	9.0	9.0	9.0	9.0
Minimum	5.0	6.5	4.5	6.5

E. **Salinity:** To preserve the basin-wide approach to salinity control developed by the Colorado River Basin states, the NNSWQS adopts the plan of implementation contained in the "2005

Triennal Review, Water Quality Standards for Salinity, Colorado River System," Colorado River Basin Salinity Control Forum (October 2005).

F. **Suspended Solids**: The following water quality standards for suspended solids concentration, are expressed as a median value determined from a minimum of four samples collected at least 7 days apart. A suspended solids sample collected during or within 48 hours of a local precipitation event shall not be used to determine the median value.

A&WHbt (warm water)	**A&WHbt (cold water)**
80 mg/L	25 mg/L

F. **Temperature:** The maximum allowable increases in ambient water temperature, expressed in degrees Celcius, due to a thermal discharge are as follows:

A&WHbt (warm water)	**A&WHbt (cold water)**
3.0	1.0

This does not apply to a stormwater discharge.

G. Dissolved Oxygen: The following are the water quality standards for dissolved oxygen:

1.

Dissolved Oxygen	**A&WHbt (warm water)**	**A&WHbt (cold water)**
Single sample minimum (from a depth no greater than one meter.)	6.0 mg/L	7.0 mg/L
Single sample minimum (from a depth greater than one meter.)	1.0 mg/L	1.0 mg/L

2. A surface water complies with the water quality standard for dissolved oxygen if the percent saturation of dissolved oxygen is equal to or greater than 90 percent from a depth no greater than one meter.

G. **Turbidity:** Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the normal growth, function, or reproduction of aquatic life is impaired or that will cause substantial visible contrast with the natural apperance of the water. Turbidity shall not exceed 10 Nephelometric Turbidity Units (NTU) over background

turbidity when the background turbidity is 50 NTU or less, or increase more than 20 percent

when the background turbidity is more than 50 NTU. Background turbidity shall be measured at a point immediately upstream of the turbidity-causing activity.

§ 207 SAMPLE COLLECTION AND ANALYSIS

All sample collection methods used to obtain surface water and effluent samples shall be conducted according to the "Quality Assurance Project Plan, Assessment of Streams and Lakes of the Navajo Nation" and other applicable sample collection guidance documents approved by the Navajo Nation EPA Water Quality Program.

All analytical methods conducted to evaluate compliance with water quality standards and to support any revisions to those standards, including all field and laboratory analyses to determine chemical, physical or biological conditions of water on the Navajo Nation, shall be conducted in accordance with approved procedures published in 40 CFR §136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants" unless the Navajo Nation selects, by regulation, alternative test methods, including methods under review by EPA for inclusion in 40 CFR §136. Analytical test procedures referenced in and approved in 40 CFR §136 include but are not limited to those published by the American Public Health Association (*Standard Methods for the Examination of Water and Wastewater, 17th edition or latest edition*); by the American Society of Testing Materials; by the U.S. Environmental Protection Agency (*Methods for Chemical Analysis of Water and Wastes* and others); and by the U.S. Geological Survey (Techniques of Water Resource Investigations of the U.S. Geological Survey publication series).

§ 208 VARIANCES

A. The Director may grant a variance from a water quality standard for a point source discharge provided the discharger demonstrates that treatment more advanced than that required to comply with technology-based effluent limitations is necessary to comply with the water quality standard and:

1. It is not technically feasible to achieve compliance within the next three years; or

2. The cost of the treatment would result in substantial and widespread economic and social impact.

B. A variance may be granted only on a pollutant-specific basis. A point source discharge is required to comply with all other applicable water quality standards for which a variance is not granted.

C. A variance applies only to a specific point source discharge. The granting of a variance does not modify a water quality standard. Other point source dischargers to the surface water

shall comply with applicable water quality standards, including any water quality standard for
which a variance has been granted for a specific point source discharge.

D. A variance is for a fixed term not to exceed three years. Variances are not renewable but may be reissued upon adequate justification.

E. The Director shall reevaluate a variance upon the issuance, reissuance, or modification of the National Pollutant Discharge Elimination System permit for the point source discharge.

F. A person who seeks a variance from a water quality standard shall submit a letter to the Director requesting a variance. A request for a variance shall include the following information:

1. Identification of the specific pollutant and water quality standard for which a variance is sought;

2. Identification of the receiving surface water;

3. For an existing point source discharge, a detailed description of the existing discharge control technologies that are used to achieve compliance with applicable water quality standards. For a new point source discharge, a detailed description of the proposed discharge control technologies that will be used to achieve compliance with applicable water quality standards;

4. Documentation that the existing or proposed discharge control technologies will comply with applicable technology-based effluent limitations and that more advanced treatment technology is necessary to achieve compliance with the water quality standard for which a variance is sought;

5. A detailed discussion of the reasons why compliance with the water quality standard cannot be achieved;

6. A detailed discussion of the discharge control technologies that are available for achieving compliance with the water quality standard for which a variance is sought;

7. Documentation of one or both of the following:

   a. That it is not technically feasible to install and operate any of the available discharge control technologies to achieve compliance with the water quality standard for which a variance is sought; or

b. That installation and operation of each of the available discharge technologies to achieve compliance with the water quality standard would result in
substantial and widespread economic and social impact;

8. Documentation that the point source discharger has reduced, to the maximum extent practicable, the discharge of the pollutant for which a variance is sought through implementation of pretreatment, source reduction, or waste minimization program;

9. A detailed description of proposed interim discharge limitations that represent the highest level of treatment achievable by the point source discharge during the term of the variance. Interim discharge limitations shall not be less stringent than technology-based effluent limitations.

G. In making a decision on whether to grant or deny the request for a variance, the Director shall consider the following factors: bioaccumulation, bioconcentration, predicted exposure on biota and the likelihood that resident biota will be adversely affected, the known or predicted safe exposure levels for the pollutant of concern, and the likelihood of adverse human health effects.

H. The Director shall issue public notice and shall provide an opportunity for a public hearing on whether the request for a variance should be granted or denied.

I. The Director shall not grant a variance for a point source discharge to a Unique Water.

J. A variance is subject to review and approval by the Regional Administrator.

§ 209 WASTEWATER MIXING ZONES

A. A wastewater mixing zone is a defined and limited part of a surface water body with defined boundaries adjacent to a point source of pollution, in which initial dilution of wastewater occurs, and in which certain numeric water quality standards may apply. All mixing zones are subject to the following requirements:

1. Mixing zones shall be limited to perennial streams, lakes and reservoirs;

2. All mixing zones shall have defined boundaries, beyond which applicable water quality standards shall be met;

3. In no instance shall narrative water quality standards described in §202 of this document be violated;

4. In no instance shall the concentration of any toxic pollutant exceed the aquatic habitat
acute numeric standard for the pollutant. The aquatic habitat acute numeric standard for all toxic pollutants shall be met at the point of discharge;

5. In perennial streams, a continuous zone of passage around a mixing zone shall be maintained in which all applicable water quality standards are met, and which provides for migration of aquatic life without exposure to pollutant concentrations that exceed chronic toxicity for aquatic habitat numeric standards. The zone of passage shall be at least 50 % of the cross-sectional area of the stream;

6. In no instance shall mixing zones constitute more than 10% of the surface area of a lake or reservoir; boundaries of adjacent mixing zones in a lake or reservoir shall be no closer that the largest horizontal dimension of either mixing zone; and

7. A mixing zone is prohibited for the following persistent, bioaccumulative pollutants:

a) Chlordane,
b) DDT and its metabolites (DDD and DDE),
c) Dieldrin,
d) Dioxin,
e) Endrin,
f) Endrin aldelhyde,
g) Heptachlor,
h) Heptachlor epoxide,
i) Lindane,
j) Mercury,
k) PCBs, and
l) Toxaphene.

B. The Navajo Nation shall consider the requirements in subsections 1 through 6 in determining whether to grant or deny a mixing zone.

C. The water quality criteria in these regulations shall apply within a mixing zone unless specific alternative criteria have been approved by the Navajo Nation Environmental Protection Agency and concurred upon by the U.S. Environmental Protection Agency. Mixing zones shall not be granted in lieu of reasonable control measures to reduce point source pollutant discharges but will be granted to complement such control measures. A limited mixing zone, serving as a zone of initial dilution in the immediate area of a point source of pollution, may be allowed if the conditions set out in this part are met.

§ 210 BIOLOGICAL STANDARDS (RESERVED)

Table 205.1 Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
Tatahatso Wash, mouth to headwaters	Lower Colorado	Lower Colorado-Marble Canyon			ScHC		FC	A&WHbt	LW
Shinumo Wash, mouth to headwaters	Lower Colorado	Lower Colorado-Marble Canyon			ScHC		FC	A&WHbt	LW
Tiger Wash, mouth to headwaters	Lower Colorado	Lower Colorado-Marble Canyon			ScHC		FC	A&WHbt	LW
Tanner Wash, mouth to headwaters	Lower Colorado	Lower Colorado-Marble Canyon			ScHC		FC	A&WHbt	LW
Colorado River, mouth of Little Colorado River to mouth of Paria River	Lower Colorado	Lower Colorado-Marble Canyon	Dom	PrHC	ScHC		FC	A&WHbt	LW
Colorado River mouth of Paria River to Glen Canyon Dam	Upper Colorado	Lower Lake Powell	Dom	PrHC	ScHC		FC	A&WHbt	LW
Antelope Creek, Lake Powell shoreline at elevation 3720 feet to headwaters	Upper Colorado	Lower Lake Powell		PrHC	ScHC		FC	A&WHbt	LW
Kaibito Creek, Lake Powell shoreline at elevation 3720 feet to headwaters	Upper Colorado	Lower Lake Powell		PrHC	ScHC		FC	A&WHbt	LW
Navajo Creek Lake Powell shoreline at elevation 3720 feet to headwaters	Upper Colorado	Lower Lake Powell		PrHC	ScHC		FC	A&WHbt	LW
Aztec Creek, Lake Powell shoreline at elevation 3720 feet to headwaters	Upper Colorado	Lower Lake Powell		PrHC	ScHC		FC	A&WHbt	LW
Little Colorado River, mouth to origin of perennial flow (between mouth of Lee Canyon and USGS Gaging Station)	Little Colorado	Lower Little Colorado	Dom	PrHC	ScHC		FC	A&WHbt	LW

Table 205.1 (continued) Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
Little Colorado River, origin of perennial flow to Navajo Nation boundary	Little Colorado	Lower Little Colorado	Dom	PrHC	ScHC		FC	A&WHbt	LW
Lee Canyon, mouth to headwaters	Little Colorado	Lower Little Colorado			ScHC		FC	A&WHbt	LW
Moenkopi Wash, mouth to headwaters	Little Colorado	Moenkopi Wash			ScHC	AgWS	FC	A&WHbt	LW
Hamblin Wash, mouth to headwaters	Little Colorado	Moenkopi Wash			ScHC		FC	A&WHbt	LW
Begashibito Wash, mouth to headwaters	Little Colorado	Moenkopi Wash			ScHC		FC	A&WHbt	LW
Shonto Wash, mouth to headwaters	Little Colorado	Moenkopi Wash			ScHC		FC	A&WHbt	LW
Cow Springs Lake	Little Colorado	Moenkopi Wash		PrHC	ScHC		FC	A&WHbt	LW
White Mesa Lake	Little Colorado	Moenkopi Wash		PrHC	ScHC		FC	A&WHbt	LW
Tappan Wash, mouth to headwaters	Little Colorado	Lower Little Colorado			ScHC		FC	A&WHbt	LW
Cedar Wash, mouth to headwaters	Little Colorado	Lower Little Colorado			ScHC		FC	A&WHbt	LW
Deadman Wash, mouth to headwaters	Little Colorado	Lower Little Colorado			ScHC		FC	A&WHbt	LW
Canyon Diablo, mouth to Navajo Nation boundary	Little Colorado	Canyon Diablo			ScHC		FC	A&WHbt	LW
San Francisco Wash, mouth to Navajo Nation boundary	Little Colorado	Lower Little Colorado			ScHC		FC	A&WHbt	LW
Padre Canyon, mouth to Navajo Nation boundary	Little Colorado	Lower Little Colorado			ScHC		FC	A&WHbt	LW

Table 205.1 (continued) Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
Youngs Canyon, mouth to Navajo Nation boundary	Little Colorado	Lower Little Colorado			ScHC		FC	A&WHbt	LW
Yellow Jacket Canyon, mouth to Navajo Nation boundary	Little Colorado	Lower Little Colorado			ScHC		FC	A&WHbt	LW
Dinnebito Wash, within Navajo Nation boundary	Little Colorado	Dinnebito Wash			ScHC		FC	A&WHbt	LW
East Fork Dinnebito Wash	Little Colorado	Dinnebito Wash			ScHC		FC	A&WHbt	LW
Corn Creek Wash, within Navajo Nation boundary	Little Colorado	Corn-Oraibi			ScHC		FC	A&WHbt	LW
Oraibi Wash, within Navajo Nation boundary	Little Colorado	Corn-Oraibi			ScHC		FC	A&WHbt	LW
Polacca Wash, within Navajo Nation boundary	Little Colorado	Polacca Wash			ScHC		FC	A&WHbt	LW
Jeddito Wash, within Navajo Nation boundary	Little Colorado	Jeddito Wash			ScHC		FC	A&WHbt	LW
Cottonwood Wash, within Navajo Nation boundary	Little Colorado	Cottonwood Wash			ScHC		FC	A&WHbt	LW
Kinlichee Creek	Little Colorado	Cottonwood Wash		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Ganado Lake	Little Colorado	Cottonwood Wash		PrHC	ScHC		FC	A&WHbt	LW
Pueblo Colorado Wash	Little Colorado	Cottonwood Wash		PrHC	ScHC		FC	A&WHbt	LW
Leroux Wash, within Navajo Nation boundary	Little Colorado	Leroux Wash			ScHC		FC	A&WHbt	LW
Antelope Lake	Little Colorado	Leroux Wash		PrHC	ScHC		FC	A&WHbt	LW
Puerco River, within Navajo Nation boundary	Little Colorado	Upper Puerco & Lower Puerco	Dom		ScHC		FC	A&WHbt	LW
Black Creek, mouth to headwaters	Little Colorado	Upper Puerco		PrHC	ScHC		FC	A&WHbt	LW

Table 205.1 (continued) Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
Tohdildonih Wash, mouth to Asaayi Lake	Little Colorado	Upper Puerco			ScHC	AgWS	FC	A&WHbt	LW
Asaayi Lake	Little Colorado	Upper Puerco		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Asaayi (Bowl) Creek, Asaayi Lake to headwaters	Little Colorado	Upper Puerco		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Asaayi (Bowl) Creek - East Fork	Little Colorado	Upper Puerco		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Bonito Creek	Little Colorado	Upper Puerco		PrHC	ScHC		FC	A&WHbt	LW
Red Lake	Little Colorado	Upper Puerco		PrHC	ScHC		FC	A&WHbt	LW
Trout Lake	Little Colorado	Upper Puerco		PrHC	ScHC		FC	A&WHbt	LW
Rio Pescado, within Navajo Nation boundary	Little Colorado	Zuni River		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Zuni River tributaries within Navajo Nation boundary	Little Colorado	Zuni River			ScHC		FC	A&WHbt	LW
Arroyo Chico and tributaries within Navajo Nation boundary	Rio Grande	Arroyo Chico			ScHC		FC	A&WHbt	LW
Torreon Wash within Navajo Nation boundary	Rio Grande	Arroyo Chico			ScHC		FC	A&WHbt	LW
Unnamed ephemeral tributaries and playas within Navajo Nation boundary	Rio Grande	North Plains			ScHC		FC	A&WHbt	LW
Rio Puerco and tributaries within Navajo Nation boundary	Rio Grande	Rio Puerco			ScHC		FC	A&WHbt	LW
Rio Salado and tributaries within Navajo Nation boundary	Rio Grande	Rio Salado			ScHC		FC	A&WHbt	LW
Alamo Creek within Navajo Nation boundary	Rio Grande	Rio Salado		PrHC	ScHC		FC	A&WHbt	LW
Rio San Jose tributaries within Navajo Nation boundary	Rio Grande	Rio San Jose			ScHC		FC	A&WHbt	LW

Table 205.1 (continued) Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
Bluewater Creek within Navajo Nation boundary	Rio Grande	Rio San Jose		PrHC	ScHC		FC	A&WHbt	LW
San Juan River and perennial tributaries (except as listed below)	San Juan	*Numerous*	Dom	PrHC	ScHC	AgWS	FC	A&WHbt	LW
Nonperennial tributaries to the San Juan River (except as listed below)	San Juan	*Numerous*			ScHC		FC	A&WHbt	LW
Desert Creek	San Juan	Lower San Juan Four Corners			ScHC		FC	A&WHbt	LW
Gothic Creek	San Juan	Lower San Juan Four Corners			ScHC		FC	A&WHbt	LW
McCraken Canyon within Navajo Nation boundary	San Juan	Lower San Juan Four Corners			ScHC		FC	A&WHbt	LW
Teec Nos Pos Wash (perrenial)	San Juan	Lower San Juan Four Corners		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Teec Nos Pos Wash (non perrenial)	San Juan	Lower San Juan Four Corners			ScHC		FC	A&WHbt	LW
Toh Dahstini Wash	San Juan	Lower San Juan Four Corners			ScHC	AgWS	FC	A&WHbt	LW
Gypsum Creek, mouth to headwaters	San Juan	Lower San Juan River			ScHC		FC	A&WHbt	LW
Nokai Canyon, shore of Lake Powell at elevation 3720 feet to headwaters	San Juan	Lower San Juan River			ScHC		FC	A&WHbt	LW
Oljeto Wash, mouth to headwaters	San Juan	Lower San Juan River			ScHC		FC	A&WHbt	LW
Baker Arroyo	San Juan	Middle San Juan River			ScHC	AgWS	FC	A&WHbt	LW
Cove Wash	San Juan	Middle San Juan River			ScHC		FC	A&WHbt	LW
Eagle Nest Arroyo	San Juan	Middle San Juan River			ScHC		FC	A&WHbt	LW
Pine Wash	San Juan	Middle San Juan River			ScHC		FC	A&WHbt	LW

Table 205.1 (continued) Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
Ojo Amarillo	San Juan	Middle San Juan River		PrHC	ScHC		FC	A&WHbt	LW
Salt Creek Wash	San Juan	Middle San Juan River			ScHC		FC	A&WHbt	LW
Standing Redrock Creek ~~Wash~~	San Juan	Middle San Juan River			ScHC		FC	A&WHbt	LW
Red Wash	San Juan	Middle San Juan River			ScHC		FC	A&WHbt	LW
Gallegos Canyon	San Juan	Upper San Juan River		PrHC	ScHC		FC	A&WHbt	LW
Blanco Canyon	San Juan	Blanco Canyon			ScHC		FC	A&WHbt	LW
Largo Canyon	San Juan	Blanco Canyon			ScHC		FC	A&WHbt	LW
Cutter Dam Reservoir	San Juan	Blanco Canyon		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Chaco River/Chaco Wash, mouth to mouth of Dead Man's Wash	San Juan	Chaco		PrHC	ScHC		FC	A&WHbt	LW
Chaco River/Chaco Wash, mouth of Dead Man's Wash to Navajo Nation boundary	San Juan	Chaco			ScHC		FC	A&WHbt	LW
Dead Man's Wash, mouth to headwaters	San Juan	Chaco			ScHC		FC	A&WHbt	LW

Table 205.1 (continued) Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
Chinde Wash, mouth to headwaters	San Juan	Chaco			ScHC		FC	A&WHbt	LW
Cottonwood Arroyo, mouth to headwaters	San Juan	Chaco			ScHC		FC	A&WHbt	LW
Sanostee Wash (perennial reaches)	San Juan	Chaco		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Sanostee Wash (non perennial reaches)	San Juan	Chaco			ScHC	AgWS	FC	A&WHbt	LW
Tocito Wash, mouth to headwaters	San Juan	Chaco			ScHC		FC	A&WHbt	LW
Brimhall Wash, mouth to Navajo Nation boundary	San Juan	Chaco			ScHC		FC	A&WHbt	LW
Captain Tom Wash (perennial reaches)	San Juan	Chaco		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Captain Tom Wash (non perennial reaches)	San Juan	Chaco			ScHC	AgWS	FC	A&WHbt	LW
Hunter Wash, mouth to Navajo Nation boundary	San Juan	Chaco			ScHC		FC	A&WHbt	LW
Sheep Springs Wash, mouth to headwaters	San Juan	Chaco			ScHC		FC	A&WHbt	LW
Coyote Wash, mouth to headwaters	San Juan	Chaco			ScHC		FC	A&WHbt	LW
Indian Creek, within Navajo Nation boundary	San Juan	Chaco			ScHC		FC	A&WHbt	LW
Red Willow Wash Nation boundary	San Juan	Chaco			ScHC	AgWS	FC	A&WHbt	LW

Table 205.1 (continued) Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
De Na Zin Wash, mouth to Navajo Nation boundary	San Juan	Chaco			ScHC		FC	A&WHbt	LW
Berland Lake	San Juan	Chaco		PrHC	ScHC		FC	A&WHbt	LW
Chuska Lake	San Juan	Chaco		PrHC	ScHC		FC	A&WHbt	LW
Morgan Lake	San Juan	Chaco		PrHC	ScHC		FC	A&WHbt	LW
Whiskey Lake	San Juan	Chaco		PrHC	ScHC		FC	A&WHbt	LW
Chinle Creek/Chinle Wash, mouth to mouth of Canyon de Chelly	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Many Farms Lake	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Walker Creek, perennial reaches, mouth to headwaters	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Walker Creek, nonperennial reaches, mouth to headwaters	San Juan	Chinle			ScHC		FC	A&WHbt	LW
Laguna Creek, perennial reaches, mouth to headwaters	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Laguna Creek, nonperennial reaches, mouth to headwaters	San Juan	Chinle			ScHC		FC	A&WHbt	LW
Tyende Creek, mouth to headwaters	San Juan	Chinle			ScHC		FC	A&WHbt	LW
Lukachukai Wash, perennial reaches, mouth to headwaters	San Juan	Chinle	Dom	PrHC	ScHC	AgWS	FC	A&WHbt	LW
Lukachukai Wash, nonperennial reaches, mouth to headwaters	San Juan	Chinle			ScHC		FC	A&WHbt	LW
Black Mountain Wash, mouth to headwaters	San Juan	Chinle			ScHC		FC	A&WHbt	LW
Nazlini Wash, perennial reaches, mouth to headwaters	San Juan	Chinle			ScHC	AgWS	FC	A&WHbt	LW
Nazlini Wash, nonperennial reaches, mouth to headwaters	San Juan	Chinle			ScHC		FC	A&WHbt	LW

Table 205.1 (continued) Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
Cottonwood Wash, mouth to headwaters	San Juan	Chinle			ScHC		FC	A&WHbt	LW
Balakai wash, mouth to headwaters	San Juan	Chinle			ScHC		FC	A&WHbt	LW
Canyon de Chelly Wash, mouth to mouth of Coyote Wash	San Juan	Chinle		PrHC	ScHC		FC	A&WHbt	LW
Whiskey Creek, mouth of Coyote Wash to headwaters	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Wheatfields Lake	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Coyote Wash, mouth to headwaters	San Juan	Chinle			ScHC		FC	A&WHbt	LW
Canyon del Muerto Wash, mouth of Canyon de Chelly to Tsaile Lake	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Tsaile Lake	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Tsaile Creek, lake to headwaters	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Crystal Creek	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Little Whiskey Creek	San Juan	Chinle		PrHC	ScHC		FC	A&WHbt	LW
Palisade Creek	San Juan	Chinle		PrHC	ScHC		FC	A&WHbt	LW
Tohtso Creek	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Wheatfields Creek	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Aspen Lake	San Juan	Chinle		PrHC	ScHC		FC	A&WHbt	LW
Round Rock Lake	San Juan	Chinle		PrHC	ScHC	AgWS	FC	A&WHbt	LW
McElmo Creek	San Juan	McElmo Creek		PrHC	ScHC	AgWS	FC	A&WHbt	LW
Montezuma Creek	San Juan	Montezuma Creek			ScHC		FC	A&WHbt	LW
Mancos River	San Juan	Mancos River			ScHC		FC	A&WHbt	LW

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Table 206.1. Numeric Surface Water Quality Standards

(All units are in ug/L unless otherwise indicated)

		Designated Uses							
Parameter (Total concentration unless otherwise indicated)	**CAS Number**	**Domestic Water Supply**	**Fish Consumption**	**Primary Human Contact**	**Secondary Human Contact**	**Aquatic & Wildlife Habitat Acute**	**Aquatic & Wildlife Habitat Chronic**	**Agricultural Water Supply**	**Livestock Watering**
1,1,1-Trichloroethane	71556	200	NCNS	200	200	2600	1600	NCNS	NCNS
1,1,2,2-Tetrachloroethane	79345	0.17	4	7	46670	4700	3200	NCNS	NCNS
1,1,2-Trichloroethane	79005	0.59	16	25	3730	18000	12000	NCNS	NCNS
1,1-Dichloroethene	75354	7	7100	230	12600	15000	950	NCNS	NCNS
1,2,4-Trichlorobenzene	120821	70	70	9300	9300	750	130	NCNS	NCNS
1,2-Dichlorobenzene	95501	600	205	84000	84000	790	300	NCNS	NCNS
1,2-Dichloroethane	107062	0.38	35	15	186670	59000	41000	NCNS	NCNS
1,2-Dichloropropane	78875	0.50	15	126000	126000	26000	9200	NCNS	NCNS
1,2-Diphenylhydrazine	122667	0.036	0.2	1.8	1.8	130	11	NCNS	NCNS
1,2-trans-Dichloroethene	156605	100	10000	18670	18670	68000	3900	NCNS	NCNS
1,3-Dichlorobenzene	541731	320	960	NCNS	NCNS	2500	970	NCNS	NCNS
1,3-Dichloropropene	542756	0.34	21	90	420	3000	1100	NCNS	NCNS
1,4-Dichlorobenzene	106467	63	190	65330	65330	560	210	NCNS	NCNS
2-(2,4,5-Trichlorophenoxy) propnonic acid (2,4,5-TP)	93721	50	NCNS	7470	7470	NCNS	NCNS	NCNS	NCNS
2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD)	1746016	0.000000005	0.0000000051	0.00003	0.001	0.01	0.005	NCNS	NCNS
2,4,6-Trichlorophenol	88062	1.4	2.4	130	130	160	25	NCNS	NCNS
2,4-Dichlorophenol	120832	77	290	2800	2800	1000	88	NCNS	NCNS
2,4-Dichlorphenoxyacetic acid (2,4-D)	94757	70	NCNS	9330	9330	NCNS	NCNS	NCNS	NCNS
2,4-Dimethyl phenol	105679	380	850	18670	18670	1000	310	NCNS	NCNS
2,4-Dinitrophenol	51285	14	1070	1870	1870	110	9.2	NCNS	NCNS
2,4-Dinitrotoluene	121142	0.11	3.4	1870	1870	14000	860	NCNS	NCNS
2-Chloroethyl vinyl ether	110758	NCNS	NCNS	NCNS	NCNS	180000	9800	NCNS	NCNS
2-Chloronaphthalene	91587	1000	1600	74670	74670	NCNS	NCNS	NCNS	NCNS
2-Chlorophenol	95578	35	30	4670	4670	2200	150	NCNS	NCNS
2-methyl-4,6-Dinitrophenol	534521	13	280	5600	5600	310	24	NCNS	NCNS

Table 206.1. Numeric Surface Water Quality Standards (continued)

(All units are in ug/L unless otherwise indicated)

		Designated Uses							
Parameter (Total concentration unless otherwise indicated)	**CAS Number**	**Domestic Water Supply**	**Fish Consumption**	**Primary Human Contact**	**Secondary Human Contact**	**Aquatic & Wildlife Habitat Acute**	**Aquatic & Wildlife Habitat Chronic**	**Agricultural Water Supply**	**Livestock Watering**
3,3'-Dichlorobenzidine	91941	0.021	0.028	3.1	3.1	NCNS	NCNS	NCNS	NCNS
3-methyl 4-Chlorophenol	59507	NCNS	NCNS	NCNS	NCNS	15	4.7	NCNS	NCNS
4-Bromophenyl phenyl ether	101553	NCNS	NCNS	NCNS	NCNS	180	14	NCNS	NCNS
4-Nitrophenol	100027	NCNS	NCNS	NCNS	NCNS	4100	3000	NCNS	NCNS
Acenaphthene	83329	670	990	56000	56000	850	550	NCNS	NCNS
Acrolein	107028	4	2	470	470	34	30	NCNS	NCNS
Acrylonitrile	107131	0.051	0.25	3	9300	3800	250	NCNS	NCNS
Aldrin	309002	0.000049	0.00005	0.08	30	3	NCNS	0.003	0.003
alpha-BHC	319846	0.0026	0.0049	0.22	7470	1600	130	NCNS	NCNS
alpha-Endosulfan	959988	40	20	5600	5600	0.22	0.056	NCNS	NCNS
Aluminum (Al) (pH 6.5-9.0 for AqHbt)	7429905	NCNS	NCNS	NCNS	NCNS	750	87	5000 D	NCNS
Ammonia-N	7664417	NCNS	NCNS	NCNS	NCNS	**See Table 206.2**	**See Table 206.3**	NCNS	NCNS
Anthracene	120127	2100	75	280000	280000	NCNS	NCNS	NCNS	NCNS
Antimony (Sb)	7440360	5.6	640	370	370	88 D	30 D	NCNS	NCNS
Arsenic (As)	7440382	10	80	30	280	340 D	150 D	2000	200
Asbestos (fibers/L > 10 um)	1332214	7000000	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS
Barium (Ba)	7440393	1000	NCNS	98000	98000	NCNS	NCNS	NCNS	NCNS
Benzene	71432	5	51	93	93	2700	180	NCNS	NCNS
Benzidine	92875	0.000086	0.00020	0.01	2800	1300	89	NCNS	NCNS
Benzo(a)anthracene	56553	0.0038	0.018	1	NCNS	NCNS	NCNS	NCNS	NCNS
Benzo(a)pyrene	50328	0.0038	0.018	1	1	NCNS	NCNS	NCNS	NCNS
Benzo(b)fluoranthene	205992	0.0038	0.018	1	NCNS	NCNS	NCNS	NCNS	NCNS
Benzo(k)fluoranthene	207089	0.0038	0.018	1	NCNS	NCNS	NCNS	NCNS	NCNS
Beryllium (Be)	7440417	4	85	1870	1870	NCNS	NCNS	NCNS	NCNS
beta-BHC	319857	0.02	0.02	3	560	1600	130	NCNS	NCNS
beta-Endosulfan	33213659	40	20	5600	5600	0.22	0.056	NCNS	NCNS
Bis(2-chloroethyl)ether	111444	0.030	0.53	1.3	1.3	120000	6700	NCNS	NCNS
Bis(2-chloroisopropyl)ether	108601	1400	65000	56000	56000	NCNS	NCNS	NCNS	NCNS

Table 206.1. Numeric Surface Water Quality Standards (continued)

(All units are in ug/L unless otherwise indicated)

		Designated Uses							
Parameter (Total concentration unless otherwise indicated)	**CAS Number**	**Domestic Water Supply**	**Fish Consumption**	**Primary Human Contact**	**Secondary Human Contact**	**Aquatic & Wildlife Habitat Acute**	**Aquatic & Wildlife Habitat Chronic**	**Agricultural Water Supply**	**Livestock Watering**
Bis(2-ethylhexyl)phthalate	117817	1.2	2.2	330	18670	400	360	NCNS	NCNS
Boron	7440428	630	NCNS	126000	126000	NCNS	NCNS	1000	5000 D
Bromoform	75252	4.3	140	180	28000	15000	10000	NCNS	NCNS
Butyl benzyl phthalate	85687	1500	1900	186670	186670	1700	130	NCNS	NCNS
Cadmium (Cd)	7440439	5	8	470	470	**(a) D**	**(a) D**	50	50
Carbon tetrachloride	56235	0.23	1.6	40	650	18000	1100	NCNS	NCNS
Chlordane	57749	0.0008	0.00081	13	470	2.4	0.0043	NCNS	NCNS
Chlorine (total residual)	7782505	4000	NCNS	4000	4000	19	11	NCNS	11
Chlorobenzene	108907	100	1550	18670	18670	3800	260	NCNS	NCNS
Chlorodibromomethane	124481	0.40	13	18670	18670	NCNS	NCNS	NCNS	NCNS
Chloroform	67663	5.7	470	9330	9330	14000	900	NCNS	NCNS
Chromium (Cr III + Cr VI)	7440473	100	NCNS	NCNS	NCNS	NCNS	NCNS	1000	1000
Chromium III (Cr III)	16065831	NCNS	75000	1400000	1400000	**(b) D**	**(b) D**	NCNS	NCNS
Chromium VI (Cr VI)	18540299	20	150	2800	2800	16 D	11 D	NCNS	NCNS
Chrysene	218019	0.0038	0.018	1	NCNS	NCNS	NCNS	NCNS	NCNS
Cobalt (Co)	7440484	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS	50 D	1000 D
Copper (Cu)	7440508	1300	NCNS	9330	9330	**(c) D**	**(c) D**	200 D	500 D
Cyanide (as free Cyanide)	57125	200	140	18670	18670	22	5.2	NCNS	5.2
delta-BHC	319868	0.0123	0.0414	NCNS	NCNS	1600	130	NCNS	NCNS
Dibenzo(a,h)anthracene	53703	0.0038	0.018	1	NCNS	NCNS	NCNS	NCNS	NCNS
Dibutyl phthalate	84742	700	900	93330	93330	470	35	NCNS	NCNS
Dichlorobromomethane	75274	0.55	17	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS
Dieldrin	60571	0.000052	0.000054	0.3	50	0.24	0.056	NCNS	NCNS
Diethyl phthalate	84662	17000	44000	74670	74670	26000	1600	NCNS	NCNS
Dimethyl phthalate	131113	270000	1100000	NCNS	NCNS	17000	1000	NCNS	NCNS

Table 206.1. Numeric Surface Water Quality Standards (continued)

(All units are in ug/L unless otherwise indicated)

		Designated Uses							
Parameter (Total concentration unless otherwise indicated)	**CAS Number**	**Domestic Water Supply**	**Fish Consumption**	**Primary Human Contact**	**Secondary Human Contact**	**Aquatic & Wildlife Habitat Acute**	**Aquatic & Wildlife Habitat Chronic**	**Agricultural Water Supply**	**Livestock Watering**
Endosulfan sulfate	1031078	40	20	5600	5600	0.2	0.06	NCNS	NCNS
Endrin	72208	2	0.06	280	280	0.086	0.002	NCNS	NCNS
Endrin aldehyde	7421934	0.29	0.3	NCNS	NCNS	0.086	0.002	NCNS	NCNS
Ethylbenzene	100414	700	2100	93330	93330	23000	1400	NCNS	NCNS
Fluoranthene	206440	130	30	37330	37330	2000	1600	NCNS	NCNS
Fluorene	86737	280	1070	37330	37330	NCNS	NCNS	NCNS	NCNS
Fluoride (mg/L)		4000	NCNS	56000	56000	NCNS	NCNS	NCNS	NCNS
Gross Alpha (pCi/L)		15	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS	15
Heptachlor	76448	0.000079	0.000079	1	470	0.52	0.0038	NCNS	NCNS
Heptachlor epoxide	1024573	0.000039	0.000039	1	12	0.52	0.0038	NCNS	NCNS
Hexachlorobenzene	118741	0.00028	0.00029	3	750	6.0	4	NCNS	NCNS
Hexachlorobutadiene	87683	0.44	18	18	190	45	8	NCNS	NCNS
Hexachlorocyclohexane (Lindane)	58899	0.2	1.8	280	280	0.95	NCNS	NCNS	NCNS
Hexachlorocyclopentadiene	77474	50	40	5600	5600	3.5	0.3	NCNS	NCNS
Hexachloroethane	67721	1.4	3.3	330	930	490	350	NCNS	NCNS
Indeno(1,2,3-cd)pyrene	193395	0.0038	0.018	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS
Isophorone	78591	35	960	4910	186670	59000	43000	NCNS	NCNS
Lead (Pb)	7439921	15	NCNS	15	15	**(d) D**	**(d) D**	10000	100
Mercury (Hg)	7439976	2	0.15	280	280	2.4	**(i)** 0.001	NCNS	NCNS
Methylmercury		NCNS	NCNS	NCNS	NCNS	NCNS	**(i)** 0.00011	NCNS	NCNS
Methylmercury (mg/kg fish)		NCNS	0.3	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS
Methoxychlor	72435	40	NCNS	4670	4670	NCNS	NCNS	NCNS	NCNS
Methyl bromide	74839	10	300	NCNS	NCNS	5500	360	NCNS	NCNS
Methyl chloride	74873	NCNS	NCNS	NCNS	NCNS	270000	15000	NCNS	NCNS
Methylene chloride	75092	4.6	590	620	56000	97000	5500	NCNS	NCNS
Molybdenum (Mo)	7439987	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS	1000 D	NCNS
Naphthalene	91203	140	1520	18670	18670	1100	210	NCNS	NCNS
Nickel (Ni)	7440020	610	4600	18670	18670	**(e) D**	**(e) D**	NCNS	NCNS
Nitrate-N	14797558	10000	NCNS	1493330	1493330	NCNS	NCNS	NCNS	NCNS
Nitrite-N	14797650	1000	NCNS	93330	93330	NCNS	NCNS	NCNS	NCNS

Table 206.1. Numeric Surface Water Quality Standards (continued)

(All units are in ug/L unless otherwise indicated)

		Designated Uses							
Parameter (Total concentration unless otherwise indicated)	**CAS Number**	**Domestic Water Supply**	**Fish Consumption**	**Primary Human Contact**	**Secondary Human Contact**	**Aquatic & Wildlife Habitat Acute**	**Aquatic & Wildlife Habitat Chronic**	**Agricultural Water Supply**	**Livestock Watering**
Nirite+Nitrate-N (mg/L)		NCNS	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS	132
Nitrobenzene	98953	17	690	470	470	13000	850	NCNS	NCNS
n-Nitrosodimethylamine	62759	0.00069	3	0.1	0.1	NCNS	NCNS	NCNS	NCNS
n-Nitrosodi-n-propylamine	621647	0.005	0.51	1	88670	NCNS	NCNS	NCNS	NCNS
n-Nitrosodiphenylamine	86306	3.3	6	950	950	2900	200	NCNS	NCNS
p,p'-DDD (p,p-Dichlorodiphenyldichloroethane)	72548	0.00031	0.00031	5.8	5.8	1.1	0.001	0.001	0.001
p,p'-DDE (p,p-Dichlorodiphenyldichloroethene)	72559	0.00022	0.00022	4.1	4.1	1.1	0.001	0.001	0.001
p,p'-DDT (p,p-Dichlorodiphenyltrichloroethane)	50293	0.00022	0.00022	4.1	700	1.1	0.001	0.001	0.001
Pentachlorophenol	87865	0.27	3.0	40	28000	**(h)**	**(h)**	NCNS	NCNS
Phenanthrene	85018	NCNS	NCNS	NCNS	NCNS	30	6.3	NCNS	NCNS
Phenol	108952	2100	35	280000	280000	5100	730	NCNS	NCNS
Polychlorinated biphenyls (PCBs)	1336363	0.5	0.000064	2	19	2.0	0.014	0.01	0.01
Pyrene	129000	210	800	28000	28000	NCNS	NCNS	NCNS	NCNS
Radium 226 + 228 (pCi/L)		5	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS	30
Selenium (Se)	7782492	50	670	4670	4670	33	2	20	50
Silver (Ag)	7440224	35	8000	4670	4670	**(f) D**	NCNS	NCNS	NCNS
Strontium 90 (pCi/L)		8	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS
Tetrachloroethene	127184	5	3.3	9330	9330	2600	280	NCNS	NCNS
Thallium (Tl)	7440280	2	1	75	75	700 D	150 D	NCNS	NCNS
Toluene	108883	1000	12000	74670	74670	8700	180	NCNS	NCNS
Toxaphene	8001352	0.00028	0.00028	4	930	0.73	0.0002	NCNS	NCNS
Trichloroethene	79016	2.5	30	360	2800	20000	1300	NCNS	NCNS
Tritium (pCi/L)	10028178	20000	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS	20000

Table 206.1. Numeric Surface Water Quality Standards (continued)

(All units are in ug/L unless otherwise indicated)

		Designated Uses							
Parameter (Total concentration unless otherwise indicated)	**CAS Number**	**Domestic Water Supply**	**Fish Consumption**	**Primary Human Contact**	**Secondary Human Contact**	**Aquatic & Wildlife Habitat Acute**	**Aquatic & Wildlife Habitat Chronic**	**Agricultural Water Supply**	**Livestock Watering**
Uranium (U)	7440611	30	NCNS	2800	2800	NCNS	NCNS	NCNS	NCNS
Vanadium (V)	7440622	NCNS	NCNS	NCNS	NCNS	NCNS	NCNS	100 D	100 D
Vinyl Chloride	75014	0.002	5	6	2800	NCNS	NCNS	NCNS	NCNS
Xylenes (Total)	1330207	10000	NCNS	186670	186670	NCNS	NCNS	NCNS	NCNS
Zinc (Zn)	7440666	2100	5100	280000	280000	**(g) D**	**(g) D**	10000	25000

Table 206.2 Maximum Total Ammonia Concentration
Acute Standard for Aquatic and Wildlife Habitat
(Total Ammonia in mg-N/liter)

pH	Salmonids Present	Salmonids Absent	pH
6.5	32.6	48.8	6.5
6.6	31.3	46.8	6.6
6.7	29.8	44.6	6.7
6.8	28.1	42.0	6.8
6.9	26.2	39.1	6.9
7.0	24.1	36.1	7.0
7.1	22.0	32.8	7.1
7.2	19.7	29.5	7.2
7.3	17.5	26.2	7.3
7.4	15.4	23.0	7.4
7.5	13.3	19.9	7.5
7.6	11.4	17.0	7.6
7.7	9.65	14.4	7.7
7.8	8.11	12.1	7.8
7.9	6.77	10.1	7.9
8.0	5.62	8.40	8.0
8.1	4.64	6.95	8.1
8.2	3.83	5.72	8.2
8.3	3.15	4.71	8.3
8.4	2.59	3.88	8.4
8.5	2.14	3.20	8.5
8.6	1.77	2.65	8.6
8.7	1.47	2.20	8.7
8.8	1.23	1.84	8.8
8.9	1.04	1.56	8.9
9.0	0.885	1.32	9.0

NOTES:
1. pH is a field measurement to be taken at the same time and location as the water samples destined for the laboratory analysis of ammonia.

2. If the field measured pH value falls between the tabular values, round the field measured value according to standard scientific rounding procedures to the nearest tabular value to determine the ammonia standard.

Table 206.3 Maximum Total Ammonia Concentration
Chronic Standard for Aquatic and Wildlife Habitat
(Total Ammonia mg-N/liter)

	Temperature in Degrees Celsius										
pH	0	14	16	18	20	22	24	26	28	30	pH
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46	6.5
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42	6.6
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37	6.7
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32	6.8
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25	6.9
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18	7.0
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09	7.1
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99	7.2
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87	7.3
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74	7.4
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61	7.5
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47	7.6
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32	7.7
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17	7.8
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03	7.9
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897	8.0
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773	8.1
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661	8.2
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562	8.3
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475	8.4
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401	8.5
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339	8.6
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287	8.7
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244	8.8
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208	8.9
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179	9.0

NOTES:

1. pH and temperature are field measurements taken at the same time and location as the water samples destined for the laboratory analysis of ammonia.

2. If the field measured pH value falls between the tabular values, round the field measured value according to standard scientific rounding procedures to the nearest tabular value to determine the ammonia standard.

Footnotes to the Numeric Surface Water Quality Standards

a - Cadmium (dissolved)

$$\text{acute: } \left[e^{(1.0166\,[\ln(\text{hardness})] - 3.924)}\right]\left[1.136672 - [\ln(\text{hardness})](0.041838)\right]$$
$$\text{chronic: } \left[e^{(0.7409\,[\ln(\text{hardness})] - 4.719)}\right]\left[1.101672 - [\ln(\text{hardness})](0.041838)\right]$$

b - Chromium III (dissolved)

$$\text{acute: } \left[e^{(0.8190\,[\ln(\text{hardness})] + 3.7256)}\right] 0.316$$
$$\text{chronic: } \left[e^{(0.8190\,[\ln(\text{hardness})] + 0.6848)}\right] 0.860$$

c - Copper (dissolved)

$$\text{acute: } \left[e^{(0.9422\,[\ln(\text{hardness})] - 1.700)}\right] 0.960$$
$$\text{chronic: } \left[e^{(0.8545\,[\ln(\text{hardness})] - 1.702)}\right] 0.960$$

d - Lead (dissolved)

$$\text{acute: } \left[e^{(1.273\,[\ln(\text{hardness})] - 1.460)}\right]\left[1.46203 - [\ln(\text{hardness})](0.145712)\right]$$
$$\text{chronic: } \left[e^{(1.273\,[\ln(\text{hardness})] - 4.705)}\right]\left[1.46203 - [\ln(\text{hardness})](0.145712)\right]$$

e - Nickel (dissolved)

$$\text{acute: } \left[e^{(0.8460\,[\ln(\text{hardness})] + 2.255)}\right] 0.998$$
$$\text{chronic: } \left[e^{(0.8460\,[\ln(\text{hardness})] + 0.0584)}\right] 0.997$$

f - Silver (dissolved)

$$\text{acute: } \left[e^{(1.72\,[\ln(\text{hardness})] - 6.59)}\right] 0.85 \qquad \text{chronic: NCNS}$$

g - Zinc (dissolved)

$$\text{acute: } \left[e^{(0.8473\,[\ln(\text{hardness})] + 0.884)}\right] 0.978$$
$$\text{chronic: } \left[e^{(0.8473\,[\ln(\text{hardness})] + 0.884)}\right] 0.986$$

h - Pentachlorophenol

acute: $e^{(1.005\ [pH-4.869])}$ chronic: $e^{(1.005\ [pH-5.134])}$

- Hardness, expressed as mg/L calcium carbonate, is inserted into the equation where it says "hardness".

  a. The hardness-dependent formulae for metals shall be valid only for hardness values from 0 to 400 mg/L calcium carbonate. For values above 400 mg/L, the value for 400 mg/L shall apply. Hardness analysis is done from a dissolved water sample.

- The pH is inserted into the equation where it says "pH". pH is determined according to the following criteria:

  a. If the water body has an Aquatic and Wildlife Habitat designated use, then the pH is based on the pH of either the effluent (for a point source discharge) or the water body from a sample taken at the same time that the sample for pentachlorophenol is taken.

i - Information on the mercury and methylmercury chronic numeric standards for the Aquatic and Wildlife Habitat use may be found in the United States Fish and Wildlife Service's July 2006 fish tissue study entitled: "Methylmercury and Other Environmental Contaminants in Water and Fish Collected from Four Recreational Fishing Lakes on the Navajo Nation, 2004".

Abbreviations

NCNS - No Current Numeric Standard **D** - Dissolved

CAS Number - Chemical Abstracts Service (CAS) Registry Numbers are unique numerical identifiers assigned to chemical substances recorded in the CAS Chemical Registry System.

mg - milligram(s) ug - microgram(s) um - micrometer(s)

L - Liter N - Nitrogen pCi - picocurie(s)