CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION

WATER QUALITY STANDARDS, BENEFICIAL USES, AND TREATMENT CRITERIA

Department of Natural Resources

1999
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WATER QUALITY STANDARDS FOR SURFACE WATERS

A. INTRODUCTION

1. The Walla Walla, Cayuse and Umatilla Indians exercise inherent sovereignty which includes governing, regulating and managing our affairs, and protecting and using our natural resources. Knowing that without good quality flowing water that nothing will survive, we exercise our rights to protect the water quality of the Reservation.

   Acknowledging that water is the giver of life, food, and the spirit and upon recommendation of the Tribal Water Committee, the Board of Trustees adopts the water quality standards to provide a mechanism for managing and regulating the quality and uses of waters of the Reservation by establishing water quality goals for specific waterbodies, and providing a legal basis for regulatory controls. The exercise of this governmental function is critical to the Tribes' self-governing principles.

2. On August 5, 1981, the Board of Trustees approved and adopted the Interim Water Code. The purposes of the Interim Water Code include protecting the water resources of the Reservation from over appropriation, pollution, contamination or other acts injurious to the quantity or quality of waters of the Reservation. The Interim Water Code was amended most recently on July 28, 1999, Resolution 99-63.

3. These water quality standards are adopted pursuant to the Tribes' inherent sovereign authority, the Treaty of 1855, and Sections 303 and 518 of the Federal Clean Water Act. The standards will protect the Tribes' public health and welfare, treaty resources, political well-being, and economic viability; enhance the quality of waters of the Reservation; serve the purposes of the Federal Clean Water Act and assist in fulfilling the trust responsibilities of the United States to the Tribes.

4. Purposes of the water quality standards are to maintain or restore the chemical, physical, biological conditions, and cultural integrity of the surface waters of the Reservation for the Tribes, its people, and residents of the Reservation. The Tribes plan to achieve a level of water quality that provides for the protection and propagation of fish and wildlife, for recreation in and on the water, and for all existing and designated beneficial uses of the water. The Tribes will promote a holistic watershed approach to management of the surface waters of the Reservation and will protect cultural and spiritual uses of water and threatened and endangered species;

5. As described in this chapter, these water quality standards support the existing and designated beneficial uses of the surface waters of the Reservation, ensure that these uses will be protected, set the water quality standards to sustain the designated beneficial uses, and protect existing water quality.

6. The designated beneficial water uses and water quality criteria conform with water uses of the surface waters of the Reservation, the policies and regulations in the Interim Tribal Water Code, and considers the natural water quality potential and limitations of the same.

7. These water quality standards will be reviewed at least once every three years where full participation will be publicly requested from tribal members and the general public.

B. AREA OF APPLICATION

The provisions of these water quality standards shall apply to all surface waters within the boundaries of the Reservation, the trust lands restored to reservation status by the 1940 Secretarial Order, and any future territory that may come within Tribal jurisdiction. See Map 1.

C. APPLICABILITY AND ADMINISTRATION

1. The water quality standards shall be used by the EPA Regional Administrator for establishing any water quality based National Pollutant Discharge Elimination System (NPDES) Permit for point sources on the Reservation.

2. In conjunction with the issuance of Section 402 or Section 404 permits, the Tribes may designate mixing zones in the waters of the Reservation on a case-by-case basis. The size of mixing zones and the in-zone water quality in the mixing zones shall be consistent with applicable procedures and guidelines in EPA's **Water Quality Standards Handbook** and the **Technical Support Document for Water Quality based Toxics Control** and subsequent updates of the handbook and technical support documents (see Section M).

3. In conjunction with the issuance of Federal licenses or permits to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the surface waters of the Reservation, the licensing or permitting agency must apply for certification from the Tribes under Section 401 of the Clean Water Act. The Tribes will approve or deny certification of any federally licensed or permitted activity to ensure compliance with applicable water quality standards.

4. The Tribes may further apply these water quality standards to protect the integrity of the surface waters within the boundaries of the Reservation. As such, the Tribes may apply these water quality standards to any activity including, but not limited to the construction or operation of industrial or commercial facilities, which may result in discharge from point and nonpoint sources into the surface waters of the Reservation.

D. DEFINITIONS

These definitions are applicable to all surface waters of the Reservation and are intended to facilitate the use of this chapter.

1. "Acute Toxicity" is a relatively short-term lethal or other adverse effect to an organism caused by pollutants, and usually occurs within 4 days for fish and large invertebrates and shorter times for smaller organisms.

2. "Anthropogenic" when used to describe "sources" or "warming", means that which results from human activity.

3. "Appropriate Reference Site or Region" means a site on the same water body or within the same basin or eco-region that has similar habitat conditions and which is expected to represent the water quality and biological community attainable within the area(s) of concern.

4. "Aquatic Species" means any plant or animal that lives at least part of their life cycle in water.

5. "Background Conditions" means the biological, chemical, and physical conditions of a water body, outside and up-gradient of the area of influence of the point source discharge, nonpoint source, or instream activity under consideration. If several sources to any water body exist, background sampling would be undertaken immediately upstream from each source.

6. "Best Management Practices" means physical, structural, and/or managerial practices that, when used singularly or in combination prevent or reduce pollution.

7. "Biological Assessment" evaluates the biological condition of a water body using surveys of aquatic community structure, function, diversity, presence or absence, or other direct measurements of resident biota in surface waters.

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

9. "Board of Trustees" means the governing body of the Confederated Tribes of the Umatilla Indian Reservation exercising the Tribes' inherent authority and those powers granted by the Treaty of 1855 and the Constitution and By-Laws of the Confederated Tribes of the Umatilla Indian Reservation.

10. "BOD" means 5-day 20°C. biochemical oxygen demand and is a measure of the readily degraded organic constituents in a water sample.

11. "Carcinogen" or "carcinogenic" means any substance or agent that produces or tends to produce cancer in humans. The term carcinogen applies to substances on the EPA lists of A (known human), B (probable human), and C (possible human) carcinogens.

12. "Chapter" means the Water Quality Standards of the Confederated Tribes of the Umatilla Indian Reservation as set forth within the Interim Tribal Water Code.

13. "Chlorophyll a" means a primary pigment in all oxygen evolving photosynthetic organisms and is present in all algae and photosynthetic organisms other than bacteria.

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

15. "Critical Conditions" means the physical, chemical, and biological characteristics of the receiving water and point source discharge, nonpoint source, or instream activity that interact to produce the greatest potential adverse impact on aquatic biota and designated beneficial uses.

16. "Critical Habitat" means those areas, which support rare, threatened or endangered species, or serve as sensitive spawning and rearing areas for aquatic life.

17. "Cultural Water Use" means waters which are used to support and maintain the way of life and traditional activities involving the people of the Reservation. These activities include, but are not limited to, spiritual practices which involve, among other things, primary or (direct) contact with water; uses of a water body to fulfill cultural, traditional, spiritual or religious uses; and preservation of habitat for berries, roots, medicines and other vegetation significant to the values and treaty rights of the Tribes. Water quality standards for this purpose will be numerically identical to water contact recreation standards.

18. "CWA" means the Federal Clean Water Act (33 USC 1251 et seq.), as amended.

19. "Damage to the Ecosystem" means any demonstrated or predicted stress to aquatic or terrestrial organisms or communities of organisms which the Department concludes may interfere with the health or survival success or natural structure and functioning of such populations. The stress may be due to alteration in habitat or changes in water temperature, chemistry, turbidity, or other causes. In determining ecosystem damage, the Department shall consider the cumulative effects of pollutants or incremental changes in habitat which may create stress over the long term.

20. "Department" means the Confederated Tribes of the Umatilla Indian Reservation Department of Natural Resources.

21. "Director" means the Director of the Confederated Tribes of the Umatilla Indian Reservation Department of Natural Resources.

22. "Designated Beneficial Use" means the purpose or benefit to be derived from a water body, as designated by the Tribes, whether or not it is currently being attained.

23. "*E. coli*" means that portion of the coliform bacteria group which is present in the intestinal tracts and feces of warm-blooded animals as detected by the product of

acid or gas from lactose in a suitable culture medium within twenty-four hours at 44.5 plus or minus 0.2 degrees Celsius.

24. "Emergency" means a situation of any kind, normally unforeseeable and unpreventable by ordinary prudence, in which either human life or health is endangered, or there is a clear threat of damage to or destruction of houses, buildings, roads, bridges, sewer works, waterworks, public facilities of any kind, livestock, or growing crops or such nature that only immediate action can prevent such loss of life, threat to public health, or damage to property.

25. "EPA" means the United States Environmental Protection Agency.

26. "Existing Uses" means uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards or presently exist.

27. "Geometric Mean" means either the nth root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.

28. "Hardness" means a measure of the calcium and magnesium salts present in water. For the purpose of this chapter, hardness is measured in milligrams per liter and expressed as calcium carbonate ($CaCO_3$).

29. "High Quality Waters" means those waters, which meet or exceed those levels that are necessary to support the propagation of fish, shellfish and wildlife, and recreation in and on the water, and other existing and designated beneficial uses.

30. "Instream Water Uses" means cultural, fish and aquatic life habitat, salmonid fish rearing, salmonid fish spawning, anadromous fish passage and wildlife habitat uses.

31. "Intergravel Dissolved Oxygen" (IGDO) means the concentration of oxygen measured in the stream gravel pore water. For compliance purposes with criteria, the DO concentration should be measured within a redd or artificial redd, down-gradient of the egg pocket. Measurements should be taken within a limited time period, i.e., prior to emergence of fry, generally during the month of March.

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

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

34. "mg/L" means parts per million. A measure of concentration.

35. "Mixing Zone" means that portion of water body adjacent to an effluent outfall where mixing results in the dilution of the effluent with the receiving water. Water quality numeric criteria may be exceeded in a mixing zone as conditioned and provided for in Section M.

36. "Mutagenic" means having the characteristics of a chemical agent that can induce or increase the frequency of mutation in an organism.

37. "Natural Causes" refers to non-anthropogenic situations or not due to manmade sources.

38. "Natural Condition" means surface water quality that existed before human-caused influence on, discharge to, or addition of material to the water body.

39. "Near Instantaneous and Complete Mix" means no more than a 10 percent difference in bank-to-bank concentrations within a longitudinal distance not greater than 2 stream/river widths.

40. "Nonpoint Source" means diffuse or unconfined sources of pollution where waste can enter into or be conveyed by the movement of water into the surface waters of the Reservation.

41. "NPDES" means National Pollutant Discharge Elimination System, the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA.

42. "Outstanding Tribal Waters" means those waters designated by the Tribes where high quality waters constitute an outstanding Tribal resource based on extraordinary water quality or ecological values, or where special water quality protection is needed to maintain critical habitat areas.

43. "ppm" means a concentration measure designating parts per million.

44. "Permit" means a document issued pursuant to tribal code or federal laws (i.e., NPDES, CWA, Section 401; CWA, Section 404) specifying the waste treatment and control requirements and waste discharge conditions.

45. "Persistent Pollutant" means a pollutant which is slow to or does not decay, degrade, transform, volatilize, hydrolyze, or photolyze.

46. "Person" means any individual or group or combination thereof acting as a unit, however associated.

47. Pesticides include insecticides, herbicides, rodenticides, fungicides, piscicides and all other substances intended to prevent, repel, destroy or mitigate the damage from insects, rodents, bacteria, fungi or weeds capable of infesting or harming vegetation, humans or animals.

48. "pH" means the negative logarithm of the hydrogen ion concentration.

49. "Point Sources" means a stationary location or fixed facility (e.g. a pipe, ditch, concentrated animal feeding operation) from which pollution is discharged into surface waters of the Reservation.

50. "Pollutant" includes dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

51. "Pollution" includes such contamination, or other alteration of the physical, chemical or biological properties, of any waters of the Reservation including change in temperature, taste, color, turbidity, or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the tribe as will or is likely to create a nuisance or impair any beneficial use of such waters

52. "Primary Contact Recreation" means any recreational or other water use in which there is prolonged and intimate contact with the water body, such as swimming and tribal traditional or ceremonial purposes involving considerable risk of ingesting water in quantities sufficient to pose a significant health hazard. This contact may include but is not limited to ingestion or immersion.

53. "Primary Treatment" is the separation of suspended solids from wastewater through screening or sedimentation.

54. "Receiving Waters" means any water course or water body that receives treated or untreated wastewater.

55. "Reservation" means all lands within the diminished boundaries of the Confederated Tribes of the Umatilla Indian Reservation and Trust lands located outside the diminished boundary but within the original treaty boundary.

56. "Reservoir" means an artificial lake where water is collected as a water supply.

57. "Secondary Contact Recreation" means any recreational or cultural use of the water where contact with the water need not occur and the probability of ingesting water is minimal, i.e., fishing or boating.

58. "Secondary Treatment" may be monitored in the following context:

    a) "Sewage Wastes" means the minimum level of treatment mandated by EPA regulations pursuant to Public Law 92-500.

b) "Industrial and other waste sources" apply controls equivalent to best practicable treatment (BPT).

59. "Sewage" means the water-carried human or animal waste from residences, buildings, industrial establishments, or other places, together with such groundwater infiltration and surface waters as may be present.

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

61. "Surface Waters of the Reservation" includes lakes, bays, rivers, ponds, streams (including intermittent and ephemeral streams), wetlands, inland waters, ponds, impounding reservoirs, canals, saltwater, and all other surface water, natural or artificial, and water courses within the exterior boundaries of the Reservation.

62. "Teratogenic" means substances or agents that can interfere with normal embryonic development.

63. "Thermal Discharge" means the introduction of a heated effluent into surface waters.

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

65. "Toxicity" means acute or chronic toxicity.

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

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

68. "Treaty of 1855" means the Treaty of June 9, 1855, 12 Stat. 945, ratified March 8, 1859, proclaimed April 11, 1859, between the Tribes and the U.S. Federal Government.

69. "Tribes" means the Confederated Tribes of the Umatilla Indian Reservation of Oregon (Walla Walla, Cayuse and Umatilla Indians.)

70. "Triennial Review Process" refers to Section 303(c)(1) of the Clean Water Act, which requires the Tribes shall, from time to time, but at least once every three years, hold public hearings to review applicable water quality standards and, as appropriate, to modify and adopt revised or new standards. The Tribes will follow guides provided in Chapter 6 "Procedures for Review and Revision of Water Quality Standards" from EPA's **Water Quality Standards Handbook** to conduct all triennial reviews.

71. "Tribal Water Commission" means the governmental body of the Confederated Tribes of the Umatilla Indian Reservation charged by the Board of Trustees to adopt and implement the Tribal Water Code which contains the provisions of the Water Quality Standards of the Confederated Tribes of the Umatilla Indian Reservation.

72. "Turbidity" means the clarity of water or a measure of the transmission of light through a column of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidimeter.

73. "ug/L means a concentration unit of measure designating micrograms per liter.

74. "Wastes" include sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive, or other substances which will or may cause pollution or tend to cause pollution of any surface waters of the Reservation.

75. "Water Quality" means the chemical, physical, biological, radiological, and cultural characteristics of a waterbody.

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

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

    b) "Created Wetlands" means those wetlands intentionally created from non-wetland site to produce or replace natural wetland habitat.

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

78. "Zone of initial dilution" means the region of initial mixing surrounding or adjacent to the outfall diffuser port, in which dilution is caused by the momentum and buoyancy of the discharge.

E. GENERAL CONSIDERATIONS APPLICABLE TO THE RESERVATION

1. The General Policy of the Tribes is to restore and protect the quality of waters of the Reservation and includes:

   a) Antidegradation Policy for Surface Waters. The purpose of the Antidegradation Policy is to guide decisions that affect water quality such that degradation from point and nonpoint sources of pollution is prevented, and to protect, maintain and enhance surface water quality to protect all existing and designated beneficial uses listed in Table 1.

   b) The Antidegradation Policy consists of:

      (1) Tier 1: Existing instream water uses and the water quality necessary to support designated beneficial uses, shall be maintained and protected.

      (2) Tier 2: Where the actual water quality exceeds levels necessary to support the propagation of fish and wildlife and recreation in and on the water, that quality shall be maintained or protected unless the Tribes find, after full satisfaction of the public participation provisions of the Tribes' planning process, that

         (a) allowing lower water quality is necessary to accommodate important economic or social development where the water is located and outweighs the environmental costs of lowered water quality,

         (b) lowering of water quality for economic or social development purposes does not authorize other users to increase their loading; and

         (c) lowering the water quality will not violate the applicable criteria in Table 3 or site specific criteria established in Section O of this chapter.

         (d) the resulting water quality will fully protect existing and designated beneficial uses,

         (e) all wastes and other substances discharged will be treated and controlled to achieve:

(i) the highest statutory and regulatory requirements for new or existing point sources and

(ii) approved, cost-effective, and reasonable best management practices for nonpoint sources.

(3) Tier 3: Outstanding Tribal Waters. Where high quality waters constitute an outstanding resource of the Reservation such waters shall be maintained and protected. These high quality waters may include wild and scenic areas, wildlife refuges and waters of exceptional recreational, ecological, cultural or religious significance. The Department may require water quality controls, maintenance of natural flow regimes, protection of instream habitats, and land use practices protective of the watershed.

(4) In cases where potential water quality impairments associated with thermal discharge are involved, the Antidegradation Policy and implementing methods shall be consistent with Section 316 of the Clean Water Act, as amended.

2. When a distinction cannot be made between classifications of surface water, wetlands, or groundwater, the applicable standards will depend on the existing and designated beneficial use that may be adversely affected. At the boundary between waters of different classifications, the more stringent water quality criteria shall prevail. If the designated beneficial uses of more than one resource are affected, the most protective criteria shall apply.

F. DESIGNATED BENEFICIAL WATER USES TO BE PROTECTED IN THE UMATILLA BASIN ON THE BASIN ON THE RESERVATION

1. Water quality in the surface waters of the Reservation shall be managed to protect the existing and designated beneficial uses listed in Table 1, and Table 4. Within Table 1, the Tribes have made a general designation of beneficial uses within specified watershed areas. Within Table 4, and appropriate maps, the Tribes have designated beneficial uses specifically for individual streams. This table also includes the most significant fish species associated with each stream and the most critical life history for the species within the water body.

2. The tables listed above may be revised in the future to include additional designated beneficial uses as long as existing uses are protected and after full satisfaction of the Tribes' intergovernmental coordination and public participation process.

3. Any revisions to this document including tables constitute changes to the water quality standards regulations and will be submitted to EPA for review and approval after adoption by the Tribes.

G. WATER QUALITY STANDARDS NOT TO BE EXCEEDED IN THE SURFACE WATERS OF THE RESERVATION

1. Notwithstanding the water quality standards listed below, the highest and best practicable treatment and control of wastes, activities, and flows shall be provided in order to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.

2. Wastes shall not be discharged and activities will not be conducted where either alone or in combination with other wastes or activities they will violate the following standards in the surface waters of the Reservation. The Tribes have designated specific water bodies in Table 4 indicating the designated beneficial use, fish species, life history and temperature regime. In Table 7, the Tribes have established the period of time for native salmonid spawning, egg incubation, fry emergence and rearing periods.

   As additional information is developed, the Tribes may revise Table 4 and Table 7 based on site specific data for streams, water bodies, fishes and their associated life histories. Changes will be made after full public involvement. Any revisions constitute changes to the Tribes' water quality standards and will be submitted to EPA for review and approval following adoption by the Tribes.

3. The goal of the Tribes is that the surface waters of the Reservation will be free from substances attributable to point source discharge, nonpoint source discharge, or instream activities that produce adverse effects to human health and safety, aquatic life, and federally listed threatened and endangered species except as allowed for under Mixing Zones.

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

5. The following criteria apply to surface waters of the Reservation and their tributaries as identified in Table 4.

   a) Bacteria Standard

      (1) Upon adoption of the water quality standards, the Tribes will adopt the *Ambient Water Quality Criteria for Bacteria - 1986* and *Recommended National Water Quality Criteria*.

(2) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described below for freshwaters:

(a) 30 day log mean of 126 *E. coli* organisms per 100 ml, based on a minimum of five (5) samples.

(b) No single sample shall exceed 406 *E. coli* organisms per 100 ml.

(3) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the surface waters of the Reservation unless such sewage has been treated in a manner approved by the Tribes or otherwise allowed by these standards.

(4) Animal Waste: Runoff contaminated with domesticated animal wastes shall be minimized and treated to the maximum extent practicable before it is allowed to enter the surface waters of the Reservation.

(a) All livestock wastes shall be regulated pursuant to Section 14.065 of the Tribes' Environmental Health and Safety Code.

(b) Section 14.070 of the Tribes' Environmental Health and Safety Code will apply to environmental degradation by livestock.

(5) Confined animal feeding operations shall be regulated pursuant to the Tribes' Land Development Code, the Tribes' Environmental Health and Safety Code and the NPDES program to ensure the water quality standards of this chapter are attained and that potential adverse effects on water quality are minimized.

(6) Bacteria pollution or other conditions deleterious to waters used for domestic purposes, cultural or spiritual use, livestock watering, irrigation, bathing or otherwise injurious to public health shall not be allowed.

b) Dissolved Oxygen:

(1) For waters identified by the Tribes in Table 4 as providing salmonid spawning (see Tables 5 & 6 for indigenous and introduced species list), during the periods from spawning until fry

emergence from the gravels, listed in Table 7, the following criteria apply:

(a) The seven-day mean minimum dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is determined to be 8.0 mg/l or greater, then the dissolved oxygen criteria is 9.0 mg/l (Table 2);

(b) Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 11.0 mg/l or 9.0 mg/l criteria, dissolved oxygen levels shall not be less than 95 percent of saturation.

(c) Periods of native salmonid spawning, egg incubation, and fry emergence from the gravel are flow and temperature dependent and tend to vary with elevation. If necessary, site specific dates for these periods may be established by the Tribes after satisfaction of the Tribes' intergovernmental coordination and public participation provisions. Changes to Table 4, and Table 7 constitute changes to the water quality standards regulations and will be submitted to EPA for review and approval following adoption by the Tribes.

(2) For water bodies identified in Table 4, as providing salmonid spawning during the period from spawning until fry emergence from the gravels (Table 7), the spatial median intergravel dissolved oxygen concentration shall not be less than 6.0 mg/L. An intergravel dissolved oxygen level of 8.0 shall be used by the Department to determine where the beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravel may be impaired and require action by the Department.

(3) For water bodies identified in Table 4 as providing cold-water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/L or 90% of saturation as an absolute minimum.

(4) For water bodies identified in Table 4 as providing cool-water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/L as an absolute minimum.

c) Temperature

(1) No measurable surface water temperature increase resulting from anthropogenic activities is allowed unless a management plan has been reviewed and approved by the Tribes. The Tribes may allow

short-term modifications or variances according to Section P and Section Q. Variance standards will be set using the best available data and reviewed every three years as part of the triennial review process. The plan will show how the thermal load is (or will be) minimized and how the activity does not (or will not) interfere with attainment of numeric criteria within the watershed in question (See attached Table 4, and appropriate maps for locations). This standard applies to the following:

(a) In a water body where salmonid fish rearing (Table 4) is a designated beneficial use, and in which surface water temperatures exceed 64.0° F (17.8 °C) (7day moving average of daily maximum value); or

(b) In waters and periods of the year listed in Table 4 and Table 7 that support salmonid spawning, egg incubation and fry emergence from the egg and from the gravels in a basin which exceeds 55.0 ° F (12.8 °C) (7day moving average of daily maximum value); or

(c) In waters listed in Table 4 and Table 7 that support or maintain the viability of bull trout when surface water temperatures exceed 50.0 ° F(10.0 °C)) (7day moving average of daily maximum value); or

(d) In stream segments containing federally listed Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population;

(e) In any surface waters of the Reservation when the dissolved oxygen levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel dissolved oxygen criterion for a given stream or subbasin; or

(2) Exceeding the numeric criteria identified in subparagraph (1) (a) through (c) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record (local weather stations will be used to calculate air temperatures). All thermal sources must continue to meet permit or management plan requirements.

(3) Any person may petition the Tribes for a variance to subparagraph (1) (a through e) of this subsection (in accordance with Section Q) for discharge above the identified criteria if:

(a) The person provides credible scientific information to describe how the designated beneficial uses would not be adversely impacted; and/or

(b) The person is implementing all reasonable management practices or measures; its activity will not significantly affect the beneficial uses; and the environmental cost of treating the parameter to the level necessary to assure full protection would outweigh the risk to the resource.

d) Turbidity (Nephelometric Turbidity Units, NTU)

(1) Shall not be at a level to potentially impair designated beneficial uses or aquatic biota.

(2) More than a ten per cent cumulative increase in natural stream turbidities as measured relative to a control point immediately upstream of any or all turbidity causing activities will not be allowed.

(3) Limited duration activities necessary to address an emergency or to accommodate permitted dredging, construction or other legitimate activities which cause the standard to be exceeded may be authorized if all practicable turbidity control techniques have been applied and one of the following has been granted.

(a) Emergency activities: approval by the Tribes under prescribed conditions to accommodate a response to emergencies or to protect public health and welfare.

(b) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act), and the Tribes' Streamzone Alteration Regulations with limitations and conditions governing the activity set forth in the permit or certificate.

e) pH (hydrogen ion concentration): pH values shall not fall outside the range of 6.5 to 9.0 units.

f) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day

average flood. However, for hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation.

6. Toxic Substances Criteria shall apply to surface waters of the Reservation and their tributaries as identified in Table 4.

   a) Toxic substances shall not be introduced into the surface waters of the Reservation in amounts, concentrations or combinations which may singularly or cumulatively adversely affect existing and designated beneficial water uses, cause acute or chronic toxicity to the most sensitive biota and federally listed threatened and endangered species dependent upon those waters, or adversely affect public health and safety, as determined by the Department, except as allowed for under Mixing Zones.

   b) All surface waters of the Tribe shall at all places be free from any substance which is carcinogenic, mutagenic, or teratogenic to human beings or to significant, locally occurring wildlife or aquatic species.

   c) Levels of toxic substances shall not exceed the criteria listed in Table 3. . Levels for substances not listed may also be established with consideration of other relevant information as appropriate. Human health criteria were revised using EPA's latest methodology, *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human* Health (EPA-822-B-00-004, October 2000) using a fish consumption rate of 389 grams per day.

   d) The criteria in paragraph (c) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect designated beneficial uses, as accepted by the Tribes on a site specific basis in accordance with Section O after the Tribes' intergovernmental coordination and pubic participation process. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values.

   e) Application of pesticides in or adjacent to Reservation surface waters must be in strict compliance with the labeled directions for use of the pesticide and other relevant requirements of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and other Federal or Tribal laws that apply. Pesticide application should target noxious species and must not impact the structure or function of indigenous aquatic or wildlife communities.

f) Monitoring of toxic chemicals present in effluent shall be required of all permitted dischargers who wish to discharge into tribal waters.

g) Within any allowed mixing zone, there shall be no acute toxicity, and at the edge of the mixing zone, there shall be no chronic toxicity.

h) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Tribes deem necessary, to monitor the toxicity of complex effluent, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of paragraph (a) of this subsection. If toxicity occurs, the Tribes shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.

i) Risk-based criteria for carcinogenic substances shall be applied such that the upper-bound excess cancer risk is less than or equal to one in one million.

j) Criteria for metals shall be applied as total dissolved values based on criteria published in the Code of Federal Regulations, 57 FR 60848, December 22, 1992.

7. The following Narrative Criteria apply to surface waters of the Reservation and their tributaries as identified in Table 4.

a) Objectionable discoloration, scum, oily slick or floating solids, or coating of aquatic life with oil films shall not be allowed.

b) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, cultural, recreation, or other uses made of such waters shall not be allowed.

c) The development of fungi, algae or other growths having a deleterious effect on stream bottoms, fish, or other aquatic life, or which are injurious to health, cultural and spiritual uses, recreation or industry shall not be allowed.

d) The creation of tastes, odors, toxics or other organoleptic effects that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shall not be allowed.

e) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life

or injurious to public health, cultural uses, recreation, or industry shall not be allowed.

f) Aesthetic conditions offensive to the human senses of sight, taste, smell or touch shall not be allowed.

g) There may be no concentrations of substances in water that singly or in combination cause toxic effects on aquatic life.

8. Where the naturally occurring water quality parameters of waters of the Reservation are outside the numerical limits of the above assigned water quality standards, the natural background water quality shall be the standard. Where no historical or background data exists, data collection and analysis will be used to determine the standard. Data from an appropriate reference site, which reflects the natural condition, may also be used for this purpose. The Tribes will establish interim standards on a site specific basis according to Section O.

9. Lake Class

a) Water quality of lakes shall meet or exceed the requirements for all or substantially all uses, particularly cultural, fish, wildlife habitat, recreation, stock watering, and domestic water supply uses.

b) Water Quality Criteria:

(1) *E. coli* organism levels shall not exceed a monthly mean value of 126 organisms/100 m/L (based on a minimum of five samples) and no single sample shall have more than 406 *E. coli* organisms per 100 m/L.

(2) Dissolved oxygen – no measurable decrease from natural conditions.

(3) Total dissolved gas shall not exceed 100 percent of saturation at any point of sample collection.

(4) Temperature – no measurable change from natural conditions.

(5) pH – no measurable change from natural conditions.

H. RADIOACTIVE SUBSTANCES

1. Radioisotope concentrations shall not exceed maximum permissible concentrations which result in a significant hazard to public health in drinking water in accordance with the Federal Safe Drinking Water Act, or which may cause acute or chronic toxic conditions to aquatic biota, edible fishes, wild life, irrigated crops, livestock, dairy products or pose an external radiation hazard or which may adversely affect existing and designated beneficial uses.

2. Concentrations of radioactive materials for all waters of the Reservation shall not exceed the following:

   a) Gross Alpha Particle Activity - 15 pCi/L
   b) Gross Beta Particle Activity - 50 pCi/L
   c) Tritium - 20,000 pCi/L
   d) Strontium 90 - 8 pCi/L
   e) Radium 226 & 228 - 5 pCi/L
   f) Radium 226 - 3 pCi/L
   g) Radon - 300 pCi/L

I. BIOLOGICAL CRITERIA

1. Surface waters of the Reservation shall be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities.

2. The goal of the Tribes is that surface waters of the Reservation will be free from substances, whether attributable to point source discharges, nonpoint sources, or instream activities, in concentrations or combinations which impair the structure or limit the function of the resident aquatic community as it naturally occurs.

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

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

J. WILDLIFE CRITERIA

1. All surface waters of the Reservation shall be of sufficient quality to protect and support all life stages of resident and/or migratory wildlife species which live in, on, or near the surface waters of the Reservation.

K. WETLANDS

1. All wetlands within the Reservation which are not constructed wetlands shall be subject to the Antidegradation Policy (Section E), the Toxic Substances Criterion (Section G (5)(1)), Narrative Criteria (Section G (6)) provisions within this chapter.

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

3. Physical and biological characteristics shall be maintained and protected by:

a) Maintaining hydrological conditions, including hydroperiod, hydrodynamics, and natural water temperature variations;

b) Maintaining the natural hydrophytic vegetation; and

c) Maintaining substrate characteristics necessary to support designated beneficial uses.

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

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

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

g) Wetlands intentionally created from non-wetland sites for the sole purpose of wastewater or stormwater treatment (constructed wetlands) are not considered "surface waters of the Reservation" and are not subject to the provisions of this section.

L. NUISANCE PHYTOPLANKTON GROWTH

The following values and implementation program shall be applied to lakes, reservoirs, and streams except for ponds and reservoirs less than 10 acres in surface area and marshes:

1. The following average Chlorophyll a values shall be used to identify water bodies where phytoplankton may impair the recognized beneficial uses:

   a) Natural Lakes which thermally stratify: 0.01 mg/l.

   b) Natural Lakes and reservoirs which do not thermally stratify, reservoirs, and rivers: 0.015 mg/l.

2. Average Chlorophyll a values shall be based on the following methodology: A minimum of three samples collected over any three consecutive months at a minimum of one representative location (e.g., above the deepest point of a lake or reservoir or at the thalweg of a river channel) from samples integrated from the surface to a depth equal to twice the secchi depth or the bottom (the lesser of the two depths); analytical and quality assurance methods shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Wastewater,** and other methods approved by EPA or the Tribes.

3. If the Tribes determine that the values in subsection (1) of this standard are exceeded the Tribes may:

   a) Approve a schedule for completion and authorize studies to describe present water quality; determine the impacts on beneficial use impact; and develop a proposed control strategy for attaining compliance where technically and economically practicable. Proposed strategies may include standards for additional pollutant parameters, pollutant discharge load limitations, and any other appropriate provisions. Where natural conditions are responsible for exceedance of the values in subsection (1) of this standard or beneficial uses are not impaired, the values in subsection (1) of this standard may be modified to an appropriate value for that water body;

   b) Conduct necessary public hearings preliminary to adoption of a control strategy, standards or modified values; and

   c) Implement the strategy upon adoption by the Tribes.

4. In cases where waters exceed the values in subsection (1) and the necessary studies are not completed, the Tribes may approve new activities or new and additional discharge loading from point sources, if it is determined that designated beneficial uses would not be significantly impaired by the new activity or discharge.

M. MIXING ZONES

1. General Conditions

   a) The Tribes may allow a designated portion of a receiving water to serve as a zone of dilution for waste waters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone. Mixing zones will not have a reasonable potential to substantially interfere with the designated beneficial uses of a waterbody and public health. No mixing will be allowed where the presence of a mixing zone may result in any adverse affect to Threatened and Endangered Species.

   b) Mixing zones may be granted for whole effluent or on a pollutant by pollutant basis.

   c) The allowable size and location of a mixing zone shall be established in certifications under Section 401 of the CWA, or orders, as appropriate.

   d) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays and biosurveys as appropriate to be conducted to evaluate water quality or biological status within and outside of the mixing zone boundary.

e) The Department may require revision, revocation or denial of permits authorizing mixing zones upon expiration of the permit, or prior to expiration if information suggests that the nature and impacts of the mixing zone are different than the conditions used to determine mixing zone criteria.

f) Mixing zones shall not be granted for discharges to outstanding tribal waters, wetlands, or ephemeral or intermittent streams.

g) The Department shall consider prohibiting mixing zones where:

(1) Discharges could create or foster conditions in sediments within and outside of the mixing zone that have the reasonable potential to cause damage to the ecosystem.

(2) Discharges could cause an exceedance of the chronic criteria (WET or chemical specific) in the surface microlayer outside of the mixing zone boundary.

(3) Aquatic life could be attracted to the plume and be harmed.

(4) The mixing zone could impact drinking water intakes, recreation sites, cultural areas, and biologically important areas such as fish-spawning areas.

(5) The discharge could adversely impact threatened and endangered species.

(6) There are known or suspected carcinogens, mutagens, teratogens, or bioaccumulative or persistent pollutants.

h) Mixing zones shall not substitute for waste treatment. The applicant shall show, to the satisfaction of the Department, that all reasonable current technology for wastewater treatment, pollution control, and waste reduction have been fully applied before a mixing zone is granted.

i) Except as specified in "Narrative Water Quality Criteria" (Section G (6)) water quality standards may be exceeded within the mixing zone as provided for in a discharge permit or order. Determination of the dilution available and size of mixing zones will consider the following:

(1) critical conditions

(2) mixing characteristics of the receiving water

(3) characteristics of the effluent

(4) impacts to use designations of the receiving water

j) Mixing zones shall be as small as feasible, and in no case shall be larger than specified in subsection 2, Mixing Zone Specifications.

k) Where mixing zones are overlapping or adjacent, the total size of all mixing zones shall not exceed the size allowed for one mixing zone, as described in subsection 2, Mixing Zone Specifications.

l) The Tribes may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any I use in the receiving waters.

m) The water outside the boundary of the mixing zone shall:

(1) Be free of materials in concentrations that will cause chronic (sublethal) toxicity. Chronic toxicity is measured as the concentration that causes long-term sublethal effects, such as significantly impaired growth or reproduction in aquatic organisms, during a testing period based on test species life cycle. Procedures and end points will be specified in wastewater discharge permits.

(2) Meet all other water quality standards during low flow conditions as specified in EPA's National Toxics Rule – 7Q10 for chronic toxicity and the harmonic mean flow for carcinogens. There shall be no acute toxicity within mixing zones.

2. Mixing Zone Specifications

a) Where mixing is near instantaneous and complete and the pollutants are not persistent or bioaccumulative, the permittee may be allowed the following flows for dilution:

(1) Chronic criteria: the 7Q10 flow which is the lowest average 7 consecutive day low flow with an average recurrence frequency of once in 10 years, determined hydrologically.

(2) Acute criteria: at the point of discharge.

(3) Human health criteria - carcinogens: harmonic mean flow which is the long term mean flow value calculated by dividing the number of daily flows analyzed by the sum of the reciprocals of those daily flows.

(4) Health criteria - non-carcinogens: the 30Q5 flow which is the lowest average 30 consecutive day low flow with an average recurrence frequency of once in 5 years determined hydrologically.

b) Where mixing is not near instantaneous and complete, or for the discharge of persistent or bioaccumulative pollutants the following apply:

(1) In rivers and streams, criteria shall be met at the following locations:

(a) Chronic criteria: a point not to exceed 50 percent of the length of any given cross- section of the water body, and a distance of 200 feet_downstream from the point of discharge.

(b) Acute criteria: at the point of discharge.

(c) Human health criteria - carcinogens: at the point of discharge.

(d) Human health criteria - non-carcinogens: the edge of the zone of initial dilution.

(2) In reservoirs with a mean detention time of greater than 15 days, and lakes, criteria shall be met at the following locations:

(a) Chronic criteria: at a point not to exceed 1% percent of the volume of the water body or percent of the surface area or 0.5% percent of the width of the water body, whichever is most stringent.

(b) Acute criteria: at the point of discharge.

(c) Human health criteria – carcinogens: at the point of discharge.

(d) Human health criteria - non-carcinogens: the edge of the zone of initial dilution.

N. ALLOWANCE FOR COMPLIANCE SCHEDULES

1. All permits, orders and directives of the Department issued under Tribal authority, for existing discharges or activities may include a schedule for achieving compliance with water quality criteria contained in this Chapter. Schedules of compliance will be developed to ensure final compliance with all water quality criteria in the shortest practicable time, but not to exceed five years. Decisions

regarding whether to issue schedules of compliance will be made on a case-by-case basis by the permitting agency and must be approved by the Department. Schedules of compliance may not be issued for new discharges or activities. Schedules of compliance may be issued for:

a) Construction of necessary treatment capability;

b) implementation of necessary best management practices;

c) implementation of additional best management practices for sources determined not to meet water quality criteria following implementation of an initial set of best management practices; and,

d) completion of necessary water quality studies.

2. During the period of time where compliance with water quality criteria is deferred, interim limitations and/or other conditions may be formally established, based on the best professional judgement of the permitting agency and the Department.

3. Prior to establishing a schedule of compliance, the permitting agency shall require the permittee to evaluate the possibility of achieving water quality criteria via non-construction changes (e.g. facility operation, pollution prevention).

O. SITE SPECIFIC CRITERIA AND CRITERIA BASED ON NATURAL CONDITIONS

1. The Tribes may revise criteria based on a reservation-wide or water-body specific basis as needed to protect aquatic life, including sensitive life stages, habitat, and human health; to protect designated beneficial uses; and to increase the technical accuracy of the criteria being applied.

2. Whenever the natural conditions of the surface waters of the Reservation are of a lower quality or higher quality than the criteria assigned, the Tribes may determine that the natural conditions shall constitute the water quality criteria.

3. If the natural condition varies with time, the natural condition will be determined as the prevailing highest quality natural condition measured during an annual, seasonal, or shorter period of time prior to human caused influence. The Tribes may, in its discretion, determine a natural condition for one or more seasonal or shorter time periods to reflect variable ambient conditions.

4. Historical data or data from an appropriate reference site, that represent natural condition, may be used to determine the criterion.

5. The Tribes shall formally adopt any revised criteria following public review and comment. Any modifications to the criteria in Table 3 will be adopted in regulation.

6. Revised criteria will be submitted to EPA, after adoption by the Tribes, for review along with any information that will aid EPA to determine the adequacy of the scientific basis of the revised criteria.

P. SHORT-TERM MODIFICATIONS

1. The criteria established in these water quality standards may be modified for a specific water body on a short-term basis in order to respond to emergencies, to accommodate essential activities, or to otherwise protect the public health and welfare, even though such activities may result in a temporary reduction of water quality conditions below criteria established by this regulation. The Director will issue such modifications in writing subject to any terms and conditions prescribed by the Director.

2. Short-term modifications shall not exceed a six-month period and shall be kept as short as feasible. Short-term modifications will not be repeatedly authorized at one site. If necessary, the Department may consider a permanent change to the criteria at the site or to the designated beneficial uses.

3. Degradation of water quality or aquatic habitat will not be allowed if the degradation could interfere with, or becomes injurious to, designated beneficial uses or causes long-term harm to the environment, biota, or cultural resources. No short-term modification may be issued where it could adversely impact threatened or endangered species or their critical habitat.

4. A written request for a short-term modification shall be made to the Department. Such requests shall be made at least thirty days prior to the start of the activity impacting water quality, unless the modification is in response to an emergency requiring immediate attention in which case notification shall be provided within twenty-four hours of the response decision. Baseline monitoring during and after the modification period may be required.

5. Requests for short-term modifications must meet public participation requirements unless the request is responding to emergencies.

6. Aquatic application of all pesticides shall require a granting of a short-term modification prior to application. These modifications shall include, at a minimum, the following conditions:

   a) The pesticide application shall be in accordance with all Federal and Tribal regulations.

   b) The application shall be in accordance with label provisions promulgated by EPA under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended (7 U.S.C. 136, et seq.).

c) The application shall not result in conditions injurious to indigenous aquatic biota, wildlife, humans, cultural resources, or other designated beneficial uses of the water body.

d) Public notice, including identification of the pesticide, applicator, location where the pesticide will be applied, proposed timing and method of application, and any water use restrictions shall be provided by the applicator.

e) The Department shall be notified 72 hours prior to pesticide application.

f) Any additional conditions required by the Department.

7. In the event of any fish kills or other harm to indigenous aquatic dependent resources, the Department or the Umatilla Tribal Police Communications Center shall be notified within two (2) hours.

Q. VARIANCES FROM WATER QUALITY STANDARDS

1. Degradation of water quality or aquatic habitat will not be allowed if the degradation could interfere with or becomes injurious to designated beneficial uses or causes long term harm to the environment, biota, or cultural resources. No variance may be issued where it could adversely impact threatened or endangered species or their critical habitat.

2. The Tribes may grant variances from meeting certain water quality standards provided they are consistent with the following requirements.

   a) When granted by the Tribes, individual variances are to be pollutant and source specific, and will be included as part of this section.

   b) To obtain a variance from a water quality standard, the discharger will demonstrate that meeting the standard is unattainable based on one or more of the following grounds:

      (1) Naturally occurring pollutant concentrations prevent attainment of the standard, or

      (2) Natural, ephemeral, intermittent, or low flow conditions of water levels prevent attainment of the standard, or

      (3) Human caused conditions or sources of pollutants prevent attainment of the standard and cannot be remedied or would cause more environmental damage to correct than to leave in place.

(4) Dams, diversions, or other type of hydrologic modifications preclude attainment of the standard, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in attainment of the standard, or

(5) Physical conditions related to the natural features of the water body, unrelated to water quality such as lack of proper substrate cover, depth, pools, or riffles preclude attainment of the standard, or

(6) Controls more stringent than technology-based effluent limitations would result in substantial and widespread economic and social impact.

c) The discharger must submit to the Tribes documentation that treatment more advanced than required by technology-based effluent limitations were considered and that alternative effluent control strategies were evaluated.

d) A variance shall not exceed a five (5) year period and shall be kept as short as feasible.

(1) Upon expiration of the five-year time period or permit, the discharger must either meet the standard or must re-apply for the variance according to these rules.

(2) In considering a re-application for a variance, the Tribes will require the discharger to demonstrate reasonable progress toward meeting the standard.

e) Any variance will be adopted under Tribal regulation following public review and comment.

f) Any Tribal adopted variance will be submitted to EPA for review and approval.

R. MINIMUM DESIGN CRITERIA FOR TREATMENT AND CONTROL OF WASTES FOR THE UMATILLA RIVER BASIN ON THE RESERVATION

1. Prior to any discharge of wastes from any new or modified facility to waters of the Reservation, the wastes must be treated and controlled in facilities designed with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility if completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables, which are unpredictable or uncontrollable.

This is particularly true for biological treatment facilities. Actual operating limits are intended to be established by permit and recognize that the actual performance level may at times be less than the design criteria.)

a) Sewage Wastes:

(1) Umatilla River and tributaries within the Reservation boundary:

(a) During periods of low stream flow (approximately April 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD (5-day 20°C. biochemical oxygen demand) and 10 mg/l of suspended solids or equivalent control.

(b) During periods of high stream flow (approximately November 1 to March 31): A minimum of secondary treatment or equivalent control unless specifically authorized by the Department, operation of all wastes treatment and control facilities will be at a maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters.

(2) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow) shall not exceed one unless specifically approved by the Tribes.

(3) Sewage wastes shall be disinfected after treatment equivalent to thorough mixing with sufficient chlorine to provide a residual of at least one part per million after 60 minutes of contact time unless specifically authorized by permit. If chlorine is used as the disinfectant, effluent chlorine concentrations in ug/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed eleven.

(4) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Tribes where elimination of inflow and infiltration would be necessary but not presently practicable;

(5) More stringent waste treatment and control requirements may be imposed where special conditions may require.

b) Industrial wastes:

(1) After maximum practicable inplant control and primary treatment, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in

significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances) is required.

(2) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:

(a) The uses, which are or may likely be made of the receiving stream;

(b) the size and nature of flow of the receiving stream;

(c) the quantity and quality of wastes to be treated; and

(d) the presence or absence of other sources of pollution in the same watershed.

(3) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays.

(4) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters.

(5) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any waters of the reservation.

(6) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

S. PUBLIC INVOLVEMENT

At least once every three years, the Department and the Tribal Water Commission shall hold public Triennial Reviews for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards.

The Department and the Tribal Water Commission will issue public notice of all proposed changes and make them available to the public prior to the public hearings in order to provide an opportunity for meaningful public comment. Adopted revisions to the water quality standards will be submitted to the EPA Regional Administrator with supporting analyses of public participation.

T. ANALYTICAL METHODS

The analytical testing methods for determining compliance with the water quality standards contained in this code shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water** published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation and other methods approved by EPA or the Tribes. Additionally, the Tribes will use the methods found in the Code of Federal Regulations 40 Part 136.

Support Documents: The publication(s) referred to or incorporated by reference in this document are available from the Office of the Department of Natural Resources.

TABLE 1
DESIGNATED BENEFICIAL USES
FOR WATER QUALITY STANDARDS
In Surface Waters of the Umatilla Indian Reservation*

Use No	Beneficial Uses	Mid Umatilla River Drainage	Upper Umatilla River Drainage	Wildhorse Creek Drainage	McKay Creek Drainage	Tutuilla Creek Drainage	Lake Hum-Te-Pin Drainage
1	Domestic, Commercial, Community, Municipal/Public Water Supply		X	X			
2	Agricultural or Farm Water Supply	X	X	X	X	X	X
3	Stock Watering	X	X	X	X	X	X
4	Industrial Water Supply	X		X			
5	Cultural	X	X	X	X	X	X
6	Fish & Aquatic Life Habitat**	X	X	X	X	X	X
	(a) Salmonid Fish Rearing	X	X	X	X	X	
	(b) Salmonid Fish Spawning	X	X	X	X	X	
	(c) Resident Fish & Aquatic Life	X	X	X	X	X	X
	(d) Anadromous Fish Pasage	X	X	X	X	X	
7	Wildlife Habitat	X	X	X	X	X	X
8	Recreation	X	X	X	X	X	X
9	Power Generation						
10	Fish Hatcheries (Acclimation)	X	X				
11	Pollution Abatement	X	X	X	X	X	X
12	Mining	X					
13	Fire Protection	X	X				X

* Table does not limit beneficial uses for permitting water use.
**Salmonid Fish Rearing, Salmonid Fish Spawning, Anadromous Fish Passage. Beneficial uses (Table 4 and appropriate watershed maps) associated with these fisheries and cold and cool water depend upon species and life stages of species.

Note: The Tribal Water Code (as amended, July 28, 1999) lists eighteen (18) Beneficial Uses of Water. Table 1 combines domestic, commercial, community, municipal and public water supply into #1; and, agricultural and farm water supply into #2.

TABLE 2
DISSOLVED OXYGEN CRITERIA

Class	Concentration and Period[1]					Use/Level of Protection
	30-D	7-D	7-Mi	Min		
Salmonid Spawning		11.0 [2,3]		9.0 [3]		Principal use of salmonid spawning and incubation of embryos until emergence from the gravels. Low risk of impairment to cold-water aquatic life, other native fish and invertebrates. The IDGO criteria represents an acute threshold for survival based on field studies.
				8.0 [4]	6.0 [5]	
Cold Water	8.0		6.5	6.0		Principally cold-water aquatic life. Salmon, trout, cold-water invertebrates, and other native cold-water species exist throughout all or most of the year. Juvenile anadromous salmonids may rear throughout the year. No measurable risk level for these communities.
Cool Water	6.5			5.5		Mix native cool-water aquatic life, such as sculpins and lampreys. Water bodies includes estuaries. No measurable risk to cool-water species, slight risk to cold-water species present.
No Risk	No change from Background					The only DO criterion that provides no additional risk is no change from background. Water bodies accorded this level of protection include natural and conditional use areas (i.e., Wilderness areas).

[1] 30-D = 30-day minimum as defined.
7-D = 7-day mean minimum as defined.
7-mi = 7-day minimum as defined.
Min = Absolute minimums for surface samples when applying the Averaging period spatial median of IGDO.

[2] When intergravel DO levels are 8.0 mg/l or grater, DO levels may be as low as 9.0 mg/l as an absolute minimum, without triggering a violation.

[3] If conditions of barometric pressure, altitude and temperature preclude achievement of the footnoted criteria, then 95 percent saturation applies.

[4] Intergravel DO action level, spatial median minimum

[5] Intergravel DO criterion, spatial median minimum

Notes: Shaded values represent the absolute minimum criteria, unless the Tribes believe that adequate date exists to apply the multiple criteria and associated periods. Periods of salmonid spawning, egg incubation, and fry emergence are detailed in Figure 1.

Table 3
WATER QUALITY CRITERIA FOR TOXIC POLLUTANTS

Risk (Unitless) = **0.000001**

Fish Consumption (g/day) = **389**

	Priority Pollutant	CAS Number	Freshwater		Human Health For Consumption of:		FR Cite/Source
			CMC (µg/L)	CCC (µg/L)	Water + Organism (µg/L)	Organism Only (µg/L)	
1	Antimony	7440360			4.69E+00 B	2.88E+01 B	65FR66443
2	Arsenic	7440382	340 A,D,K	150 A,D,K	2.09E-03 C,M,S	2.34E-03 C,M,S	65FR31682 57FR60848
3	Beryllium	7440417			Z		65FR31682
4	Cadmium	7440439	4.3 D,E,K	2.2 D,E,K,	Z		EPA822-R-01-001 65FR31682
5a	Chromium (III)	16065831	570 D,E,K	74 D,E,K	Z Total		EPA820/B-96-001 65FR31682
5b	Chromium (VI)	18540299	16 D,K	11 D,K	Z Total		65FR31682
6	Copper	7440508	13 D,E,K,cc	9.0 D,E,K,cc	1,300 U		65FR31682
7	Lead	7439921	65 D,E,bb,gg	2.5 D,E,bb,gg			65FR31682
8	Mercury	7439976	1.4 D,K,hh	0.77 D,K,hh	0.050 B	0.051 B	62FR42160
9	Nickel	7440020	470 D,E,K	52 D,E,K	6.90E+01 B	7.66E+01 B	65FR31682
10	Selenium	7782492	L,R,T	5.0 T	9.05E+01 Z	1.87E+02	62FR42160 65FR31682

							65FR6644 3
11	Silver	7440224	3.4 D,E,G				65FR3168 2
12	Thallium	7440280			2.02E-02	2.11E-02	68FR7551 0
13	Zinc	7440666	120 D,E,K	120 D,E,K	1.04E+03 U	1.15E+03 U	65FR3168 2 65FR6644 3
14	Cyanide	57125	22 K,Q	5.2 K,Q	1.17E+02 jj	1.17E+02 jj	EPA820/B-96-001 57FR6084 8 68FR7551 0
15	Asbestos	1332214			7 million fibers/L l		57FR6084 8
16	2,3,7,8-TCDD (Dioxin)	1746016			2.30E-10 C	2.31E-10 C	65FR6644 3
17	Acrolein	107028			1.28E+01	1.31E+01	65FR6644 3
18	Acrylonitrile	107131			9.48E-03 B,C	1.11E-02 B,C	65FR6644 3
19a	Benzene	71432			3.16E-01 B,C,ll	6.29E-01 B,C,ll	IRIS 01/19/00 & 65FR6644 3
19b	Benzene	71432			1.14E+00 B,C,ll	2.28E+00 B,C,ll	IRIS 01/19/00 & 65FR6644 3
20	Bromoform	75252			2.56E+00 B,C	6.07E+00 B,C	65FR6644 3
21	Carbon Tetrachloride	56235			5.79E-02 B,C	7.38E-02 B,C	65FR6644 3
22	Chlorobenzene	108907			4.66E+01 Z,U,	6.99E+01 U	68FR7551 0
23	Chlorodibromomethane	124481			2.41E-01 B,C	5.71E-01 B,C	65FR6644 3

24	Chloroethane	75003					
25	2-Chloroethylvinyl Ether	110758					
26	Chloroform	67663			3.32E+00 C,P	7.87E+00 C,P	62FR42160
27	Dichlorobromomethane	75274			3.26E-01 B,C	7.74E-01 B,C	65FR66443
28	1,1-Dichloroethane	75343					
29	1,2-Dichloroethane	107062			3.12E-01 B,C	1.65E+00 B,C	65FR66443
30	1,1-Dichloroethylene	75354			1.68E+02	3.21E+02	68FR75510
31	1,2-Dichloropropane	78875			2.91E-01 B,C	6.55E-01 B,C	65FR66443
32	1,3-Dichloropropene	542756			2.56E-01 C	9.47E-01 C	68FR75510
33	Ethylbenzene	100414			8.44E+01	9.60E+01	68FR75510
34	Methyl Bromide	74839			2.83E+01 B	6.72E+01 B	65FR66443
35	Methyl Chloride	74873					65FR31682
36	Methylene Chloride	75092			3.97E+00 B,C	2.67E+01 B,C	65FR66443
37	1,1,2,2-Tetrachloroethane	79345			8.87E-02 B,C	1.80E-01 B,C	65FR66443
38	Tetrachloroethylene	127184			1.27E-01 C	1.48E-01 C	65FR66443
39	Toluene	108883			4.54E+02 Z	6.73E+02	68FR75510
40	1,2-Trans-Dichloroethylene	156605			1.07E+02 Z	4.56E+02	68FR75510
41	1,1,1-Trichloroethane	71556			Z		65FR31682

42	1,1,2-Trichloroethane	79005			3.27E-01 B,C	7.02E-01 B,C	65FR66443
43	Trichloroethylene	79016			9.07E-01 C	1.35E+00 C	65FR66443
44	Vinyl Chloride	75014			2.04E-02 C,kk	1.10E-01 C,kk	68FR75510
45	2-Chlorophenol	95578			6.47E+00 B,U	6.71E+00 B,U	65FR66443
46	2,4-Dichlorophenol	120832			1.18E+01 B,U	1.33E+01 B,U	65FR66443
47	2,4-Dimethylphenol	105679			3.64E+01 B	3.84E+01 B,U	65FR66443
48	2-Methyl-4,6-Dinitrophenol	534521			6.59E+00	1.28E+01	65FR66443
49	2,4-Dinitrophenol	51285			5.42E+01 B	2.40E+02 B	65FR66443
50	2-Nitrophenol	88755					
51	4-Nitrophenol	100027					
52	3-Methyl-4-Chlorophenol	59507			U	U	
53	Pentachlorophenol	87865	19 F,K	15 F,K	9.29E-02 B,C	1.36E-01 B,C,H	65FR31682 65FR66443
54	Phenol	108952			1.65E+04 B,U	7.71E+04 B,U	65FR66443
55	2,4,6-Trichlorophenol	88062			1.05E-01 B,C	1.09E-01 B,C,U	65FR66443
56	Acenaphthene	83329	1700	520	4.37E+01 B,U	4.46E+01 B,U	65FR66443
57	Acenaphthylene	208968					
58	Anthracene	120127			1.54E+03 B	1.80E+03 B	65FR66443
59	Benzidine	92875			8.45E-06	8.94E-06	65FR66443

					B,C	B,C	
60	Benzo(a)Anthracene	56553			7.01E-04 B,C	8.22E-04 B,C	65FR66443
61	Benzo(a)Pyrene	50328			7.01E-04 B,C	8.22E-04 B,C	65FR66443
62	Benzo(b)Fluoranthene	205992			7.01E-04 B,C	8.22E-04 B,C	65FR66443
63	Benzo(ghi)Perylene	191242					
64	Benzo(k)Fluoranthene	207089			7.01E-04 B,C	8.22E-04 B,C	65FR66443
65	Bis(2-Chloroethoxy)Methane	111911					
66	Bis(2-Chloroethyl)Ether	111444			1.36E-02 B,C	2.37E-02 B,C	65FR66443
67	Bis(2-Chloroisopropyl) Ether	108601			9.46E+02 B	2.91E+03 B	65FR66443
68	Bis(2-Ethylhexyl)Phthalate[X]	117817			9.51E-02 B,C	9.89E-02 B,C	65FR66443
69	4-Bromophenyl Phenyl Ether	101553					
70	Butylbenzyl Phthalate[W]	85687			8.59E+01 B	8.69E+01 B	65FR66443
71	2-Chloronaphthalene	91587			6.95E+01 B	7.13E+01 B	65FR66443
72	4-Chlorophenyl Phenyl Ether	7005723					
73	Chrysene	218019			7.01E-04 B,C	8.22E-04 B,C	65FR66443
74	Dibenzo(a,h)Anthracene	53703			7.01E-04 B,C	8.22E-04 B,C	65FR66443
75	1,2-Dichlorobenzene	95501			5.33E+01	5.83E+01	68FR75510

76	1,3-Dichlorobenzene	541731			3.97E+01	4.34E+01	65FR66443
77	1,4-Dichlorobenzene	106467			7.94E+00	8.67E+00	68FR75510
78	3,3'-Dichlorobenzidine	91941			1.26E-03 B,C	1.28E-03 B,C	65FR66443
79	Diethyl Phthalate[W]	84662			1.84E+03 B	1.97E+03 B	65FR66443
80	Dimethyl Phthalate[W]	131113			4.37E+04	5.00E+04	65FR66443
81	Di-n-Butyl Phthalate[W]	84742			1.91E+02 B	2.02E+02 B	65FR66443
82	2,4-Dinitrotoluene	121142			6.47E-02 C	1.52E-01 C	65FR66443
83	2,6-Dinitrotoluene	606202					
84	Di-n-Octyl Phthalate	117840					
85	1,2-Diphenylhydrazine	122667			7.49E-03 B,C	9.03E-03 B,C	65FR66443
86	Fluoranthene	206440			6.23E+00 B	6.26E+00 B	65FR66443
87	Fluorene	86737			2.05E+02 B	2.40E+02 B	65FR66443
88	Hexachlorobenzene	118741			1.29E-05 B,C	1.29E-05 B,C	65FR66443
89	Hexachlorobutadiene	87683			2.91E-01 B,C	8.30E-01 B,C	65FR66443
90	Hexachlorocyclopentadiene	77474			2.28E+01 U	4.98E+01 U	68FR75510
91	Hexachloroethane	67721			1.40E-01 B,C	1.48E-01 B,C	65FR66443
92	Ideno(1,2,3-cd)Pyrene	193395			7.01E-04	8.22E-04	65FR66443

					B,C	B,C	
93	Isophorone	78591			1.99E+01 B,C	4.32E+01 B,C	65FR66443
94	Naphthalene	91203					
95	Nitrobenzene	98953			1.12E+01 B	3.11E+01 B,H,U	65FR66443
96	N-Nitrosodimethylamine	62759			6.83E-04 B,C	1.36E-01 B,C	65FR66443
97	N-Nitrosodi-n-Propylamine	621647			4.10E-03 B,C	2.27E-02 B,C	65FR66443
98	N-Nitrosodiphenylamine	86306			2.60E-01 B,C	2.70E-01 B,C	65FR66443
99	Phenanthrene	85018					
100	Pyrene	129000			1.54E+02 B	1.80E+02 B	65FR66443
101	1,2,4-Trichlorobenzene	120821			3.02E+00	3.16E+00	68FR75510
102	Aldrin	309002	3.0 G		2.26E-06 B,C	2.27E-06 B,C	65FR31682 65FR66443
103	alpha-BHC	319846			2.11E-04 B,C	2.20E-04 B,C	65FR66443
104	beta-BHC	319857			7.40E-04 B,C	7.69E-04 B,C	65FR66443
105	gamma-BHC (Lindane)	58899	0.95 K		7.99E-02	8.31E-02	65FR31682 68FR75510
106	delta-BHC	319868					
107	Chlordane	57749	2.4 G	0.0043 G,aa	3.65E-05 B,C	3.65E-05 B,C	65FR31682 65FR66443
108	4,4'-DDT	50293	1.1 G,ii	0.001 G,aai	9.87E-06	9.87E-06	65FR31682

					B,C	B,C	65FR66443
109	4,4'-DDE	72559			9.87E-06 B,C	9.87E-06 B,C	65FR66443
110	4,4'-DDD	72548			1.40E-05 B,C	1.40E-05 B,C	65FR66443
111	Dieldrin	60571	0.24 K	0.056 K,O	2.41E-06 B,C	2.41E-06 B,C	65FR31682 65FR66443
112	alpha-Endosulfan	959988	0.22 G,Y	0.056 G,Y	3.92E+00 B	4.00E+00 B	65FR31682 65FR66443
113	beta-Endosulfan	33213659	0.22 G,Y	0.056 G,Y	3.92E+00 B	4.00E+00 B	65FR31682 65FR66443
114	Endosulfan Sulfate	1031078			3.92E+00 B	4.00E+00 B	65FR66443
115	Endrin	72208	0.086 K	0.036 K,O	2.72E-03	2.72E-03	65FR31682 68FR75510
116	Endrin Aldehyde	7421934			1.36E-02 B	1.36E-02 B,H	65FR66443
117	Heptachlor	76448	0.52 G	0.0038 G,aa	3.57E-06 B,C	3.57E-06 B,C	65FR31682 65FR66443
118	Heptachlor Epoxide	1024573	0.52 G,V	0.0038 G,V,aa	1.76E-06 B,C	1.77E-06 B,C	65FR31682 65FR66443
119	Polychlorinated Biphenyls PCBs:			0.014 N,aa	2.88E-06 B,C,N	2.88E-06 B,C,N	65FR31682 65FR66443
120	Toxaphene	8001352	0.73	0.0002 aa	1.25E-05 B,C	1.25E-05 B,C	65FR31682 65FR66443

A	This recommended water quality criterion was derived from data for arsenic (III), but is applied here to total arsenic, which might imply that arsenic (III) and arsenic (V) are equally toxic to aquatic life and that their toxicities are additive. In the arsenic criteria document (EPA 440/5-84-033, January 1985), Species Mean Acute Values are given for both arsenic (III) and arsenic (V) for five species and the ratios of the SMAVs for each species range from 0.6 to 1.7. Chronic values are available for both arsenic (III) and arsenic (V) for one species; for the fathead minnow, the chronic value for arsenic (V) is 0.29 times the chronic value for arsenic (III). No data are known to be available concerning whether the toxicities of the forms of arsenic to aquatic organisms are additive.
B	This criterion has been revised to reflect The Environmental Protection Agency's q1* or RfD, as contained in the Integrated Risk Information System (IRIS) as of May 17, 2002. The fish tissue bioconcentration factor (BCF) from the 1980 Ambient Water Quality Criteria document was retained in each case.
C	This criterion is based on carcinogenicity of 10-6 risk. Alternate risk levels may be obtained by moving the decimal point (e.g., for a risk level of 10-5, move the decimal point in the recommended criterion one place to the right).
D	1) Freshwater and saltwater criteria for metals are expressed in terms of the dissolved metal in the water column. The recommended water quality criteria value was calculated by using the previous 304(a) aquatic life criteria expressed in terms of total recoverable metal, and multiplying it by a conversion factor (CF). The term "Conversion Factor" (CF) represents the recommended conversion factor for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column. (Conversion Factors for saltwater CCCs are not currently available. Conversion factors derived for saltwater CMCs have been used for both saltwater CMCs and CCCs.) 2) See "Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria," October 1, 1993, by Martha G. Prothro, Acting Assistant Administrator for Water, available from the Water Resource Center, USEPA, 401 M St., SW, mail code RC4100, Washington, DC 20460; and 40CFR'31.36(b)(1). Conversion Factors applied in the table can be found in Appendix A to the Preamble-Conversion Factors for Dissolved Metals.
E	The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. The value given here corresponds to a hardness of 100 mg/L. Criteria values for other hardness may be calculated from the following: CMC (dissolved) = exp{mA [ln(hardness)]+ bA} (CF), or CCC (dissolved) = exp{mC [ln (hardness)]+ bC} (CF) and the parameters specified in Appendix B- Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent.
F	Freshwater aquatic life values for pentachlorophenol are expressed as a function of pH, and are calculated as follows: CMC = exp(1.005(pH)-4.869); CCC = exp(1.005(pH)-5.134). Values displayed in table correspond to a pH of 7.8.

G	This Criterion is based on 304(a) aquatic life criterion issued in 1980, and was issued in one of the following documents: Aldrin/Dieldrin (EPA 440/5-80-019), Chlordane (EPA 440/5-80-027), DDT (EPA 440/5-80-038), Endosulfan (EPA 440/5-80-046), Endrin (EPA 440/5-80-047), Heptachlor (EPA 440/5-80-052), Hexachlorocyclohexane (EPA 440/5-80-054), Silver (EPA 440/5-80-071). The Minimum Data Requirements and derivation procedures were different in the 1980 Guidelines than in the 1985 Guidelines. For example, a "CMC" derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. If assessment is to be done using an averaging period, the values given should be divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.
H	No criterion for protection of human health from consumption of aquatic organisms excluding water was presented in the 1980 criteria document or in the 1986 Quality Criteria for Water. Nevertheless, sufficient information was presented in the 1980 document to allow the calculation of a criterion, even though the results of such a calculation were not shown in the document.
I	This criterion for asbestos is the Maximum Contaminant Level (MCL) developed under the Safe Drinking Water Act (SDWA).
K	This recommended criterion is based on a 304(a) aquatic life criterion that was issued in the 1995 Updates: Water Quality Criteria Documents for the Protection of Aquatic Life in Ambient Water, (EPA-820-B-96-001, September 1996). This value was derived using the GLI Guidelines (60FR15393-15399, March 23, 1995; 40CFR132 Appendix A); the difference between the 1985 Guidelines and the GLI Guidelines are explained on page iv of the 1995 Updates. None of the decisions concerning the derivation of this criterion were affected by any considerations that are specific to the Great Lakes.
L	The CMC = 1/[(f1/CMC1) + (f2/CMC2)] where f1 and f2 are the fractions of total selenium that are treated as selenite and selenate, respectively, and CMC1 and CMC2 are 185.9 Fg/l and 12.82 Fg/l, respectively.
M	EPA is currently reassessing the criteria for arsenic.
N	This criterion applies to total pcbs, (e.g., the sum of all congener or all isomer or homolog or Aroclor analyses).
O	The derivation of the CCC for this pollutant (Endrin) did not consider exposure through the diet, which is probably important for aquatic life occupying upper trophic levels.
P	Although a new RfD is available in IRIS, the surface water criteria will not be revised until the National Primary Drinking Water Regulations: Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR) is completed, since public comment on the relative source contribution (RSC) for chloroform is anticipated.
Q	This recommended water quality criterion is expressed as Fg free cyanide (as CN)/L.
R	This value for selenium was announced (61FR58444-58449, November 14, 1996) as a proposed GLI 303(c) aquatic life criterion. EPA is currently working on this criterion and so this value might change substantially in the near future.
S	This recommended water quality criterion for arsenic refers to the inorganic form only.
T	This recommended water quality criterion for selenium is expressed in terms of total recoverable metal in the water column. It is scientifically acceptable to use the conversion factor (0.996- CMC or 0.922- CCC) that was used in the GLI to convert this to a value that is expressed in terms of dissolved metal.

U	The organoleptic effect criterion is more stringent than the value for priority toxic pollutants.
V	This value was derived from data for heptachlor and the criteria document provides insufficient data to estimate the relative toxicities of heptachlor and heptachlor epoxide.
W	Although EPA has not published a completed criteria document for butylbenzyl phthalate it is EPA's understanding that sufficient data exist to allow calculation of aquatic criteria. It is anticipated that industry intends to publish in the peer reviewed literature draft aquatic life criteria generated in accordance with EPA Guidelines. EPA will review such criteria for possible issuance as national WQC.
X	There is a full set of aquatic life toxicity data that show that DEHP is not toxic to aquatic organisms at or below its solubility limit.
Y	This value was derived from data for endosulfan and is most appropriately applied to the sum of alpha-endosulfan and beta-endosulfan.
Z	A more stringent MCL has been issued by EPA. Refer to drinking water regulations (40 CFR 141) or Safe Drinking Water Hotline (1-800-426-4791) for values.
aa	This criterion is based on a 304(a) aquatic life criterion issued in 1980 or 1986, and was issued in one of the following documents: Aldrin/Dieldrin (EPA 440/5-80-019), Chlordane (EPA 440/5-80-027), DDT (EPA 440/5-80-038), Endrin (EPA 440/5-80-047), Heptachlor (EPA 440/5-80-052), Polychlorinated biphenyls (EPA 440/5-80-068), Toxaphene (EPA 440/5-86-006). This CCC is currently based on the Final Residue Value (FRV) procedure. Since the publication of the Great Lakes Aquatic Life Criteria Guidelines in 1995 (60FR15393-15399, March 23, 1995), the Agency no longer uses the Final Residue Value procedure for deriving CCCs for new or revised 304(a) aquatic life criteria. Therefore, the Agency anticipates that future revisions of this CCC will not be based on the FRV procedure.
bb	This water quality criterion is based on a 304(a) aquatic life criterion that was derived using the 1985 Guidelines (Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses, PB85-227049, January 1985) and was issued in one of the following criteria documents: Arsenic (EPA 440/5-84-033), Cadmium (EPA-822-R-01-001), Chromium (EPA 440/5-84-029), Copper (EPA 440/5-84-031), Cyanide (EPA 440/5- 84-028), Lead (EPA 440/5-84-027), Nickel (EPA 440/5-86-004), Pentachlorophenol (EPA 440/5-86-009), Toxaphene, (EPA 440/5-86-006), Zinc (EPA 440/5-87-003).
cc	When the concentration of dissolved organic carbon is elevated, copper is substantially less toxic and use of Water-Effect Ratios might be appropriate.
dd	The selenium criteria document (EPA 440/5-87-006, September 1987) provides that if selenium is as toxic to saltwater fishes in the field as it is to freshwater fishes in the field, the status of the fish community should be monitored whenever the concentration of selenium exceeds 5.0 Fg/L in saltwater because the saltwater CCC does not take into account uptake via the food chain.

ee	This recommended water quality criterion was derived on page 43 of the mercury criteria document (EPA 440/5-84-026, January 1985). The saltwater CCC of 0.025 ug/L given on page 23 of the criteria document is based on the Final Residue Value procedure in the 1985 Guidelines. Since the publication of the Great Lakes Aquatic Life Criteria Guidelines in 1995 (60FR15393-15399, March 23, 1995), the Agency no longer uses the Final Residue Value procedure for deriving CCCs for new or revised 304(a) aquatic life criteria.
ff	This recommended water quality criterion was derived in Ambient Water Quality Criteria Saltwater Copper Addendum (Draft, April 14, 1995) and was promulgated in the Interim final National Toxics Rule (60FR22228-222237, May 4, 1995).
gg	EPA is actively working on this criterion and so this recommended water quality criterion may change substantially in the near future.
hh	This recommended water quality criterion was derived from data for inorganic mercury (II), but is applied here to total mercury. If a substantial portion of the mercury in the water column is methylmercury, this criterion will probably be under protective. In addition, even though inorganic mercury is converted to methylmercury and methylmercury bioaccumulates to a great extent, this criterion does not account for uptake via the food chain because sufficient data were not available when the criterion was derived.
jj	This recommended water quality criterion is expressed as total cyanide, even though the IRIS RFD we used to derive the criterion is based on free cyanide. The multiple forms of cyanide that are present in ambient water have significant differences in toxicity due to their differing abilities to liberate the CN-moiety. Some complex cyanides require even more extreme conditions than refluxing with sulfuric acid to liberate the CN-moiety. Thus, these complex cyanides are expected to have little or no 'bioavailability' to humans. If a substantial fraction of the cyanide present in a water body is present in a complexed form (e.g., $Fe_4[Fe(CN)_6]_3$), this criterion may be over conservative.
kk	This recommended water quality criterion was derived using the cancer slope factor of 1.4 (LMS exposure from birth).
ll	Benzene calculations represent the range of the criteria for water and organisms (0.61-2.2 μg/L) and organisms only (14-51 μg/L).

TABLE 4
*Water Quality Streams, Designated Beneficial Use Codes, Fish Species, Life History & Temperature

Stream Name	_ Map	✱ Beneficial Use Codes	★ Fish Species	Life History	Temperature
Mainstem-Upper Res to Meacham C.	4	2, 3, 5-8, 10, 11, 13	SS, RT, SC, BT, Mt. Whitefish	Spawn/Incub/Emerg/Rear	Cold
Mainstem Meacham C. to Lower Res. Bound	4	2-8, 10, 11, 13	SS, RT, SC, FC, Coho, BT, MT. Whitefish	Spawn/Incub/Emerg/Rear	Cold
Meacham C. Mouth to Line C.	4	3, 5, 6-8	SS, RT, SC, BT, Mt. Whitefish	Spawn/Incub/Emerg/Rear	Cold
Squaw Creek	4	3, 5, 6, 7, 8, 11	SS, RT, SC, BT, Coho	Spawn/Incub/Emerg/Rear	Cold
Buckaroo Creek	4	3, 5, 6, 7, 8, 11	SS, RT, SC, Coho	Spawn/Incub/Emerg/Rear	Cold
Mission Creek	5	5, 6, 7, 8	SS, RT, SC, Coho	Spawn/Incub/Emerg/Rear	Cold
Cottonwood Creek	5	6, 7, 8	SS, RT, SC, Coho	Spawn/Incub/Emerg/Rear	Cold
Coonskin Creek	5	6, 7, 8	SS, RT, SC, Coho	Spawn/Incub/Emerg/Rear	Cold
Moonshine Creek	5	6, 7, 8	SS, RT, SC, Coho	Spawn/Incub/Emerg/Rear	Cold
Mainstem Wildhorse C.	3	2, 3, 5, 6, 7, 8, 11	RT, SS		
Eagle Creek	3	5, 6	RT, SS		
Spring Hollow Creek	3	5, 6	RT, SS		
Mainstem McKay C.	7	2, 3, 5, 6, 7, 8, 11	RT, SS, SC, Coho	Spawn/Incub/Emerg/Rear	Cold
South Fork McKay C.	7	2, 6	RT	Spawn/Incub/Emerg/Rear	Cold
North Fork McKay C.	7	5, 6	RT	Spawn/Incub/Emerg/Rear	Cold
Johnson Creek	8	3, 6, 11	RT		Cold
Little Johnson Creek	8	5, 6	RT		Cold
Tutuilla Creek	6	2, 3, 5, 6, 7, 8, 11	RT, Coho	Spawn/Incub/Emerg/Rear	Cool

Stream Name	_ Map	✱ Beneficial Use Codes	★ Fish Species	Life History	Temperature
North Coyote Creek	6	5, 6, 7, 8	RT	Spawn/Incub/Emerg/Rear	Cool
South Coyote Creek	6	5, 6, 7, 8	RT	Spawn/Incub/Emerg/Rear	Cool
Mainstem Patawa C.	6	5, 6, 7, 8	RT	Spawn/Incub/Emerg/Rear	Cool
Lake Hum-Te-Pin	8	6, 7, 8, 11	Br. T		Cold
Jennings Creek	8	6	Br. T		Cold
Ensign Creek	8	6	Br. T		Cold

_ Map: Refers to Map where this water body is located.
✱ Beneficial Use Codes: See Table 1 for Beneficial Use associated with number.
★ Fish Species: See Table 5 and 6 for additional fish species that may exist in these waterbodies.

Fish Species Definitions - The water body will be managed for the species listed in the table.

SS	-	Summer Steelhead	(Oncorhychus mykiss)
RT	-	Rainbow Trout	(Oncorhynchus mykiss)
SC	-	Spring Chinook	(Oncorhynchus tshawytscha)
FC	-	Fall Chinook	(Oncorhynchus tshawytscha)
Coho	-	Coho Salmon	(Oncorhynchus kistuch)
BT	-	Bull Trout	(Salvelinus confluentus)
Br. T	-	Brook Trout	(Salvelinus fontinalis)
Pac Lamp	-	Pacific Lampery	(Lampretra tridentata)
Mt. Whitefish	-	Mountain Whitefish	(Prosopium williamsoni)

Life History Definitions

Spawn/incub	-	Adult spawning and egg incubation for the identified fish species occur within that water body.
Emerg	-	Emergence period
Rear	-	Juveniles of the identified fish species rear in the water body

See also Table 7 for generally accepted periods of salmonid spawning, egg incubation, fry emergence, and juvenile rearing for water bodies of the Umatilla Indian Reservation

* *Information received from CTUIR Fisheries Department*

TABLE 5
INDIGENOUS FISH SPECIES IN THE UMATILLA RIVER BASIN ON THE UMATILLA INDIAN RESERVATION

COMMON NAME	SCIENTIFIC NAME	HISTORICAL STATUS	CURRENT STATUS
Spring Chinook	Oncorhynchus tshawytscha	Present	Extinct-Reintroduced
Fall Chinook	Oncorhynchus tshawytscha	Present	Extinct-Reintroduced
Coho	Oncorhynchus kisutch	Present	Extinct-Reintroduced
Chum	Oncorhynchus keta	Present	Extinct
Pacific Lamprey	Lampetra tridentata	Present	Extinct-Reintroduced
Summer Steelhead	Oncorhynchus mykiss	Present	Present
Rainbow Trout	Oncorhynchus mykiss	Present	Present
Bull Trout	Salvelinus confluentus	Present	Present
Mountain Whitefish	Prosopium williamsoni	Present	Present
Largescale Sucker	Catostomus macrocheilus	Present	Present
Bridgelip Sucker	Catostomus columbianus	Present	Present
Bigmouth Minnow	Ptychocheilus oregonensis	Present	Present
Chiselmouth	Acrocheilus alutaceus	Present	Present
Redside Shiner	Richardsonius balteatus	Present	Present
Dace Species	Rhinichthys species	Present	Present
Sculpin Species	Cottus species	Present	Present

TABLE 6
INTRODUCED FISH SPECIES IN THE UMATILLA RIVER BASIN ON THE UMATILLA INDIAN RESERVATION

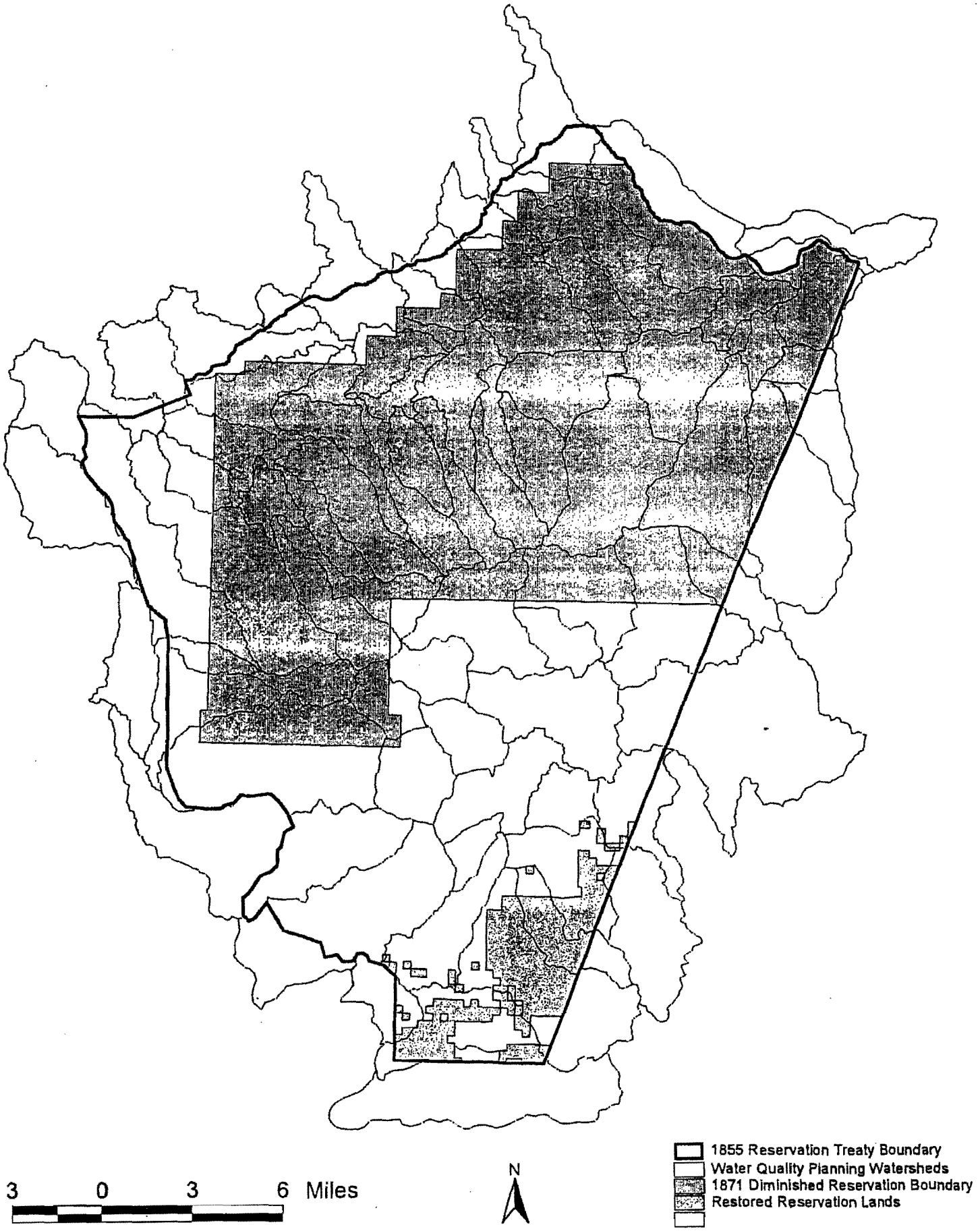
COMMON NAME	SCIENTIFIC NAME	HISTORICAL STATUS	CURRENT STATUS
Brook Trout	Salvelinus fontinalis		Hum-Te-Pin and tributaries
Catfish Species	Ictalurus species		Hum-Te-Pin

TABLE 7
GENERALLY ACCEPTED PERIODS OF SALMONID SPAWNING, EGG INCUBATION, FRY EMERGENCE AND JUVENILE REARING FOR WATER BODIES ON THE UMATILLA INDIAN RESERVATION

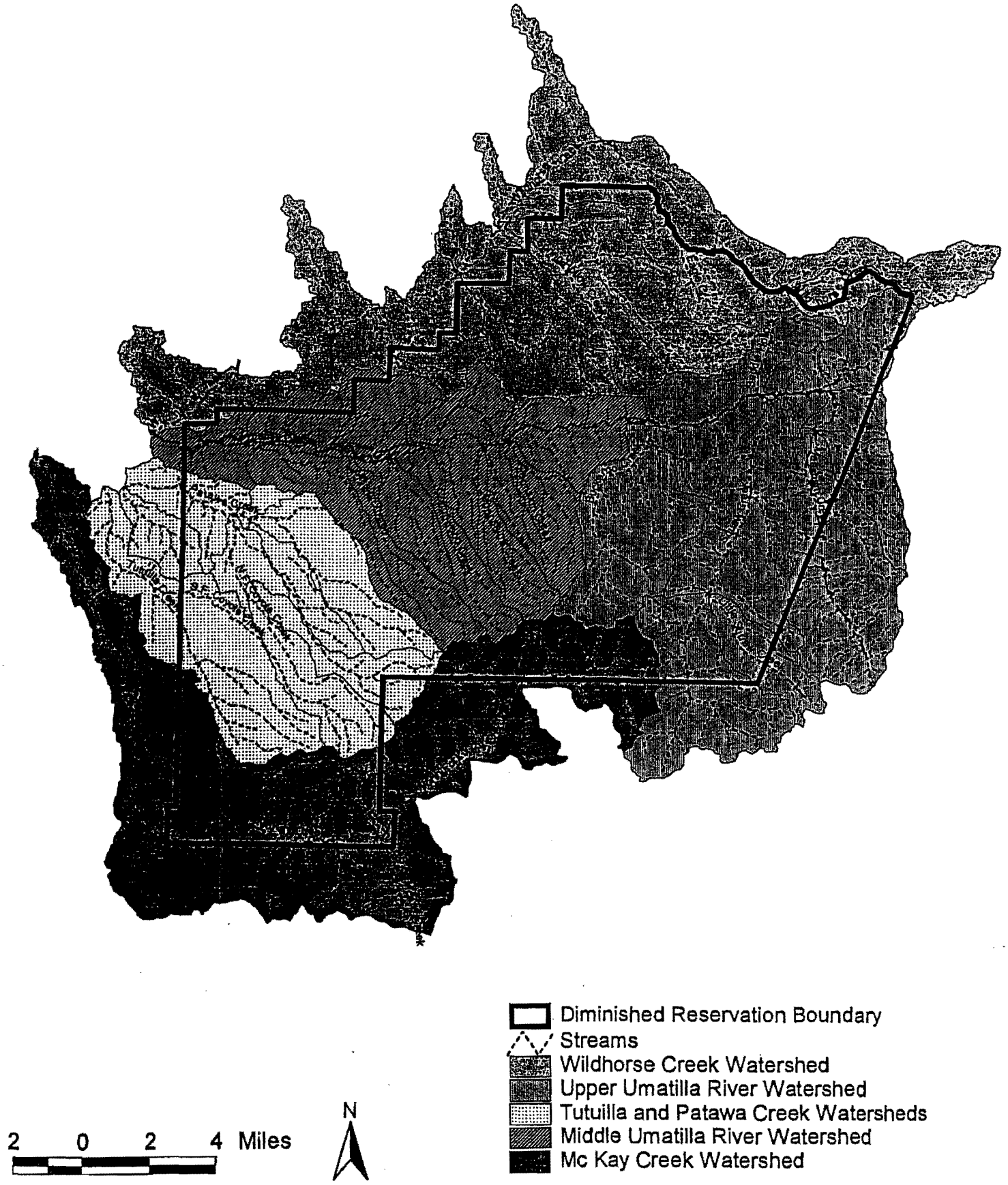
Species	Mainstem-Upper Res. to Meacham Cr.	Mainstem-Meacham Cr. to Lower Res Boundary	Meacham Cr. Mouth to Line Creek	Squaw and Buckaroo Cr.	Mission, Cottonwood, Coonskin, Moonshine	Wildhorse Cr. Drainage	McKay Cr. Drainage	Tutuilla Cr. Drainage	Lake Hum-Te-Pin & Jennings
Summer Steelhead	S=March-May I=March-June E=May-June R=Jan-Dec	S=March-May I=March-June E=May-June R-Jan-Dec	S=March-May I=March-June E=May-June R=Jan-Dec	S=March-May I=March-June E=May-June R=Jan-Dec	S=March-May I=March-June E=May-June R=Jan-Dec	N/A	N/A	N/A	N/A
Rainbow Trout	S=Feb-May I=Feb-June E=May-June R=Jan-Dec	S=Feb-May I=Feb-June E=May-June R=Jan-Dec	S=Feb-May I=Feb-June E=May-June R=Jan-Dec	S=Feb-May I=Feb-June E=May-June R=Jan-Dec	S=Feb-May I=Feb-June E=May-June R=Jan-Dec	S=Feb-May I=Feb-June E=May-June R=Oct-May	S=Feb-May I=Feb-June E=May-June R=Jan-Dec	S=Feb-May I=Feb-June E=May-June R=Oct-May	STOCKED
Spring Chinook	S=Aug-Sept I=Aug-March E=Jan-March R=Jan-Dec	S=Aug-Sept I=Aug-March E=Jan-March R=Jan-Dec	S=Aug-Sept I=Aug-March E=Jan-March R=Jan-Dec	S=N/A I=N/A E=N/A R=Jan-Dec	S=N/A I=N/A E=N/A R=Nov-May	N/A	N/A	N/A	N/A
Fall Chinook	N/A	S=Nov-Dec I=Nov-April E=March-April R=April-July	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Coho	N/A	S=Nov-Dec I=Nov-April E=March-April R=Jan-Dec	N/A	S=Nov-Dec I=Nov-April E=March-April R=Jan-Dec	S=N/A I=N/A E=N/A R=Nov-May	N/A	N/A	N/A	N/A
Bull Trout	S=N/A I=N/A E=N/A R=Jan-Dec	S=N/A I=N/A E=N/A R=Sept-June	S=N/A I=N/A E=N/A R=Sept-June	N/A	N/A	N/A	N/A	N/A	N/A
Brook Trout	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	INTRODUCED
Pacific Lamprey	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mountain Whitefish	S=Nov-Dec I=Nov-March E=Feb-March R=Jan-Dec	S=Nov-Dec I=Nov-March E=Feb-March R=Jan-Dec	S=Nov-Dec I=Nov-March E=Feb-March R=Jan-Dec	N/A	N/A	N/A	N/A	N/A	N/A

NOTES: S=Spawning periodI=Incubation Period E=Emergence Period R=Rearing Period

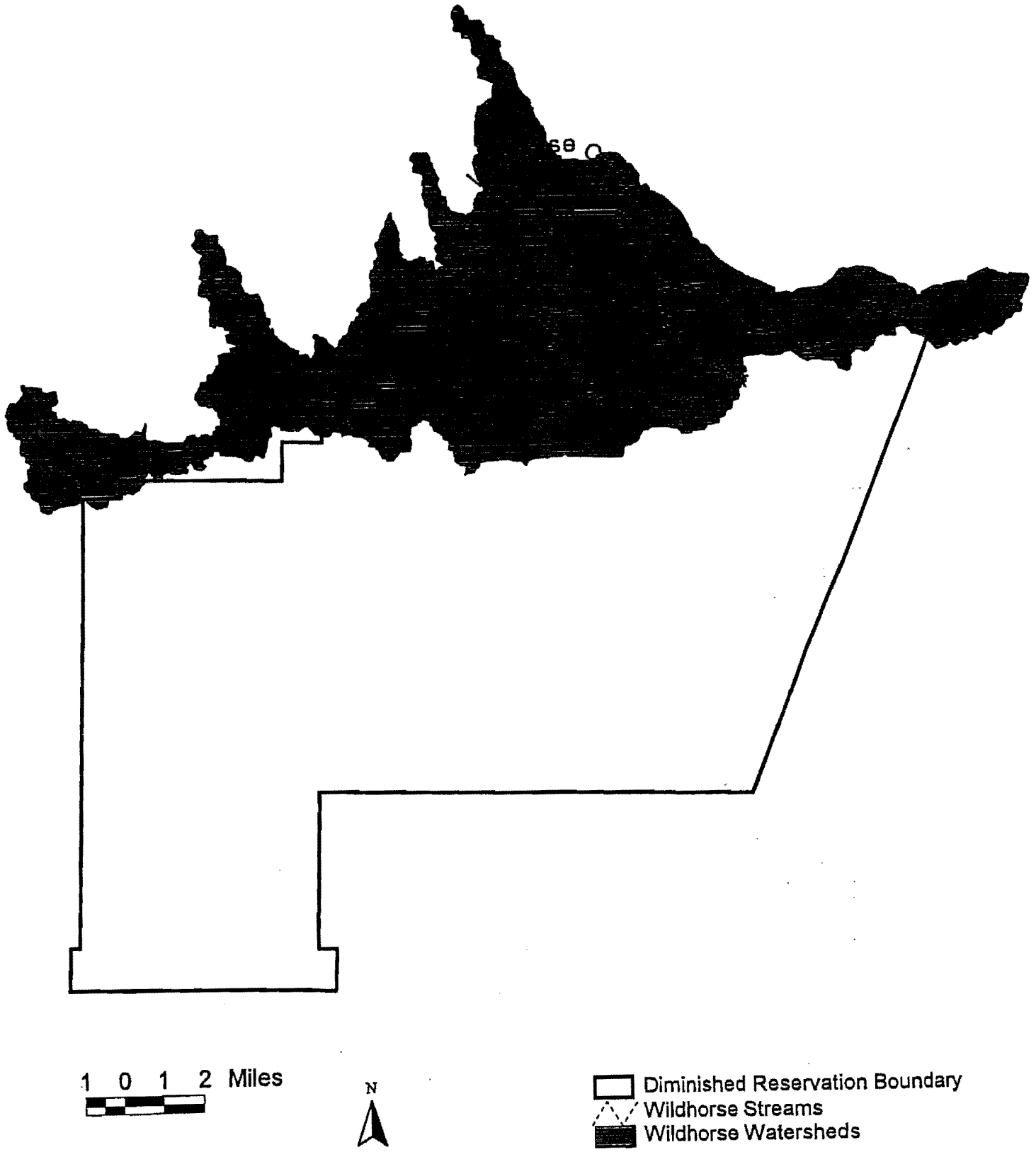
Water Quality Planning Watersheds for the Umatilla Indian Reservation
Map 1



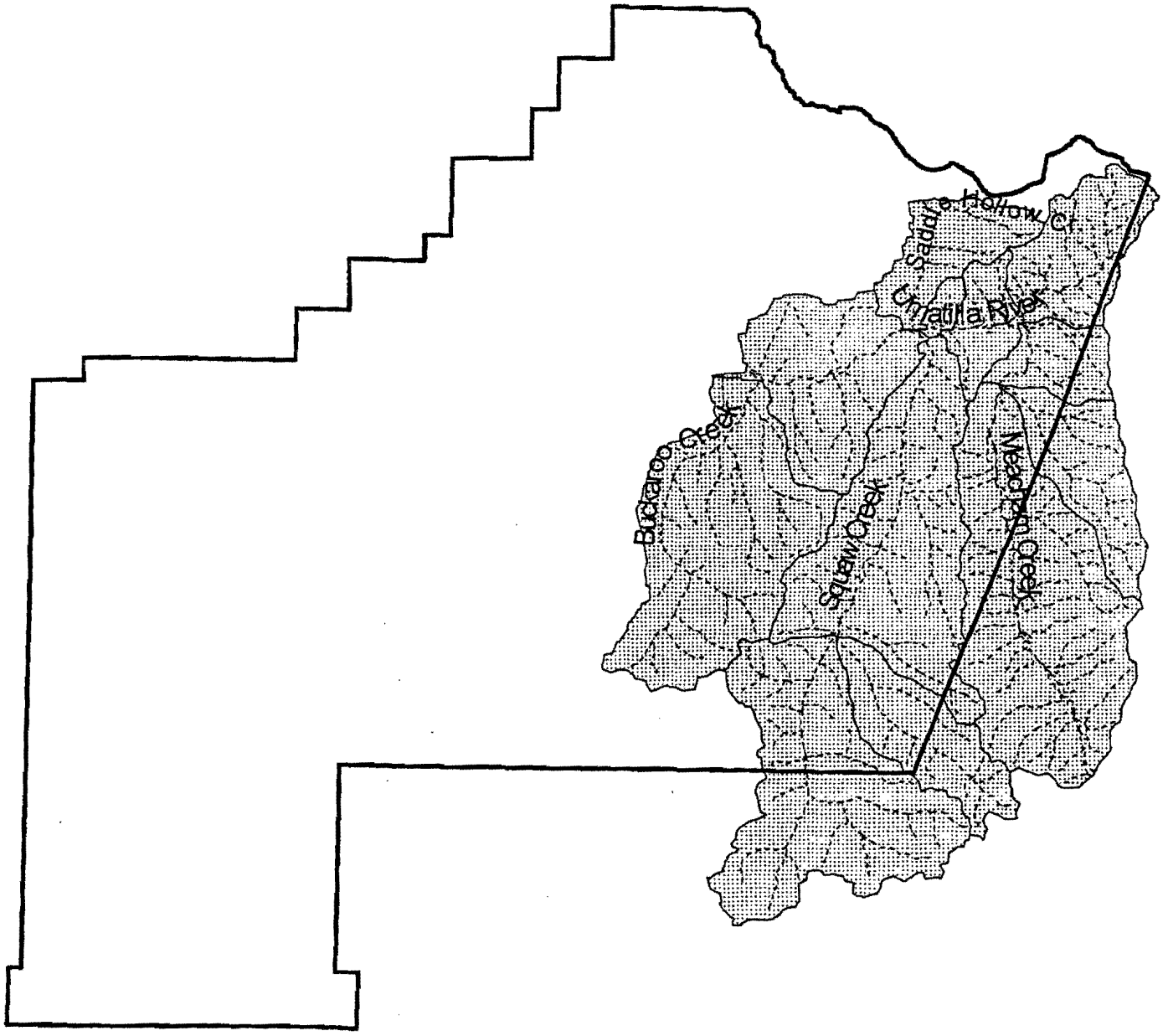
Watersheds on the Northern Portion of the Umatilla Indian Reservation
Map 2



Wildhorse Watershed Area
Map 3



Upper Umatilla Watersheds
Map 4



0 1 2 3 4 Miles

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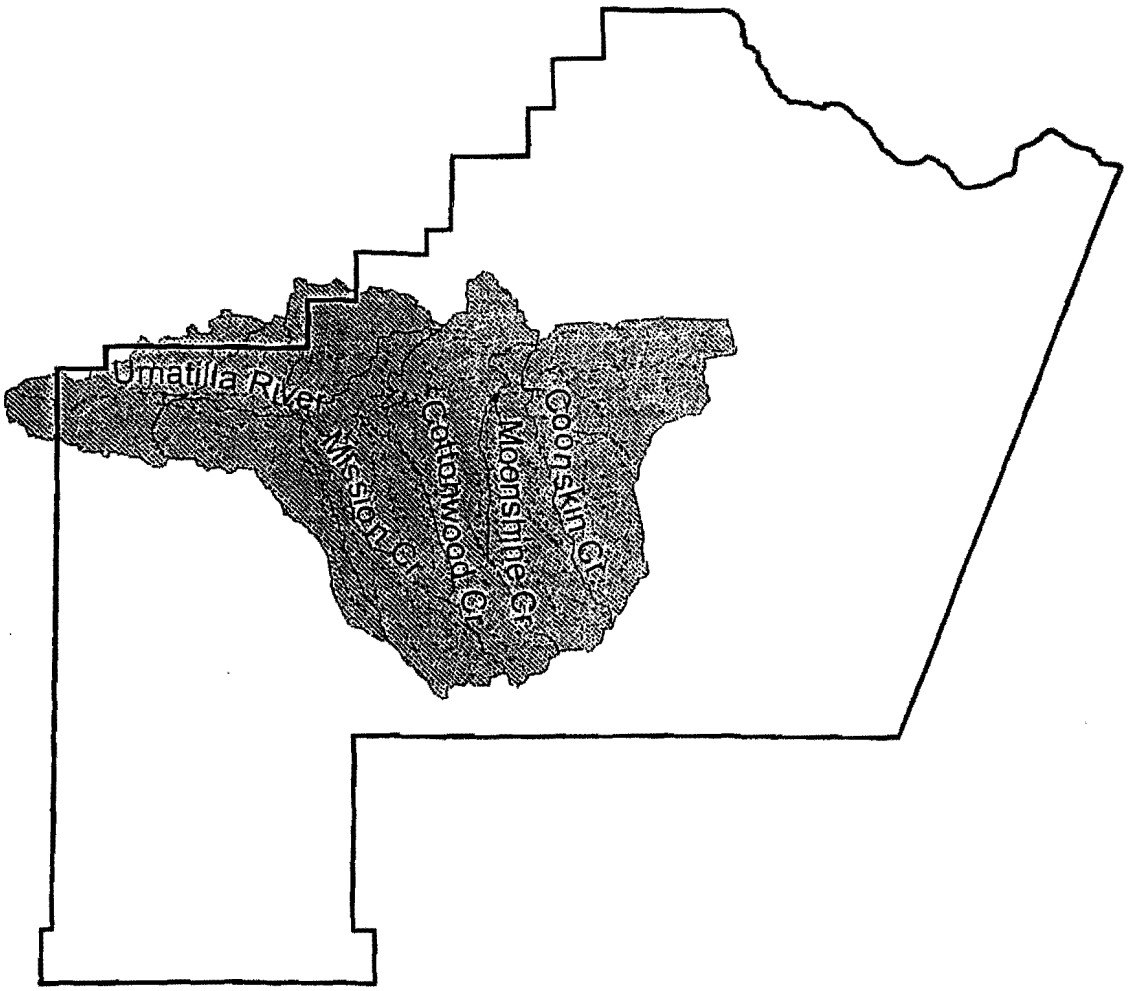
Diminished Reservation Boundary
Upper Umatilla Streams
Upper Umatilla River Watersheds

Mid Umatilla Watersheds
Map 5



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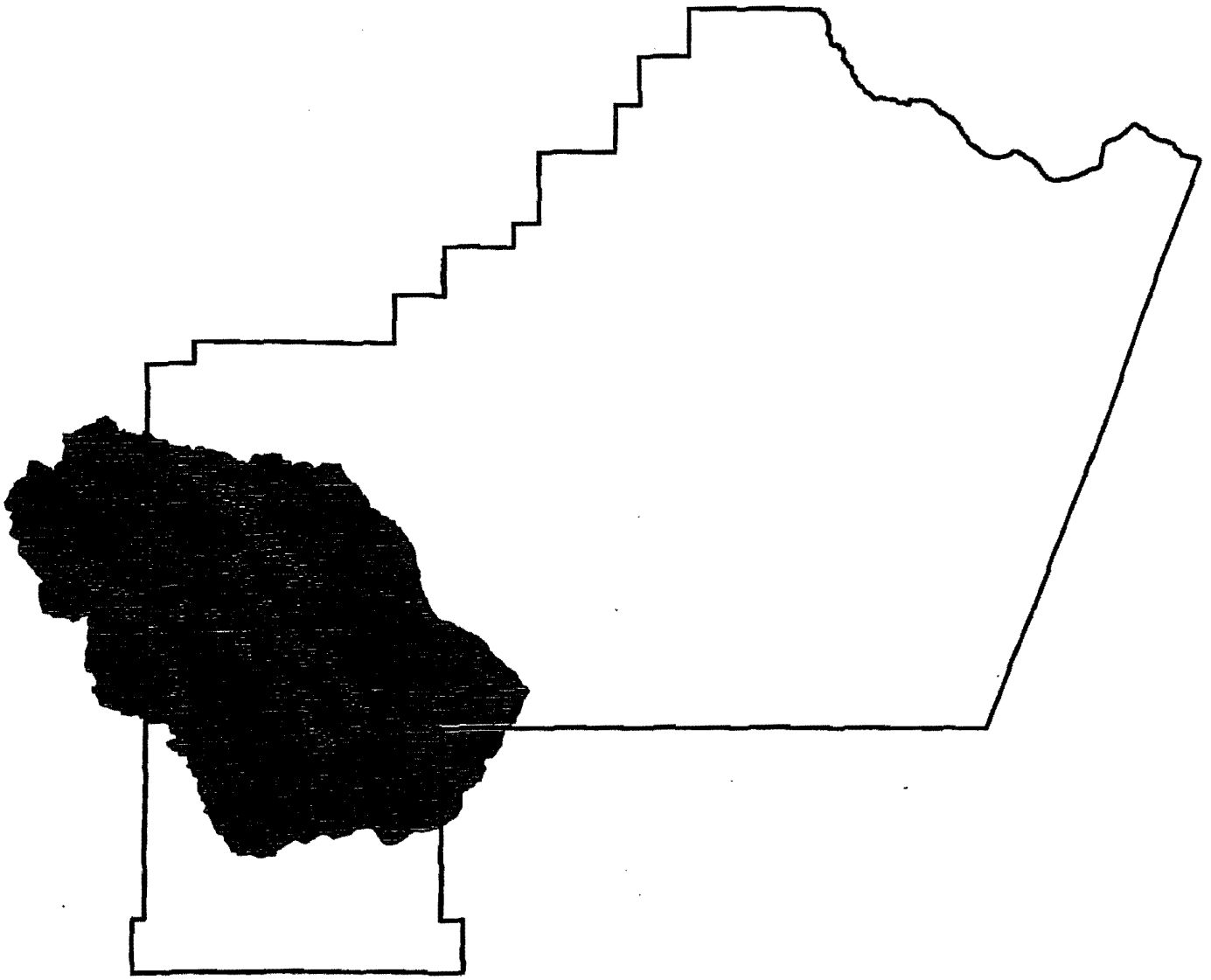
Diminished Reservation boundary
Mid Umatilla Streams
Mid Umatilla Watersheds

Tutuilla and Patawa Watersheds
Map 6



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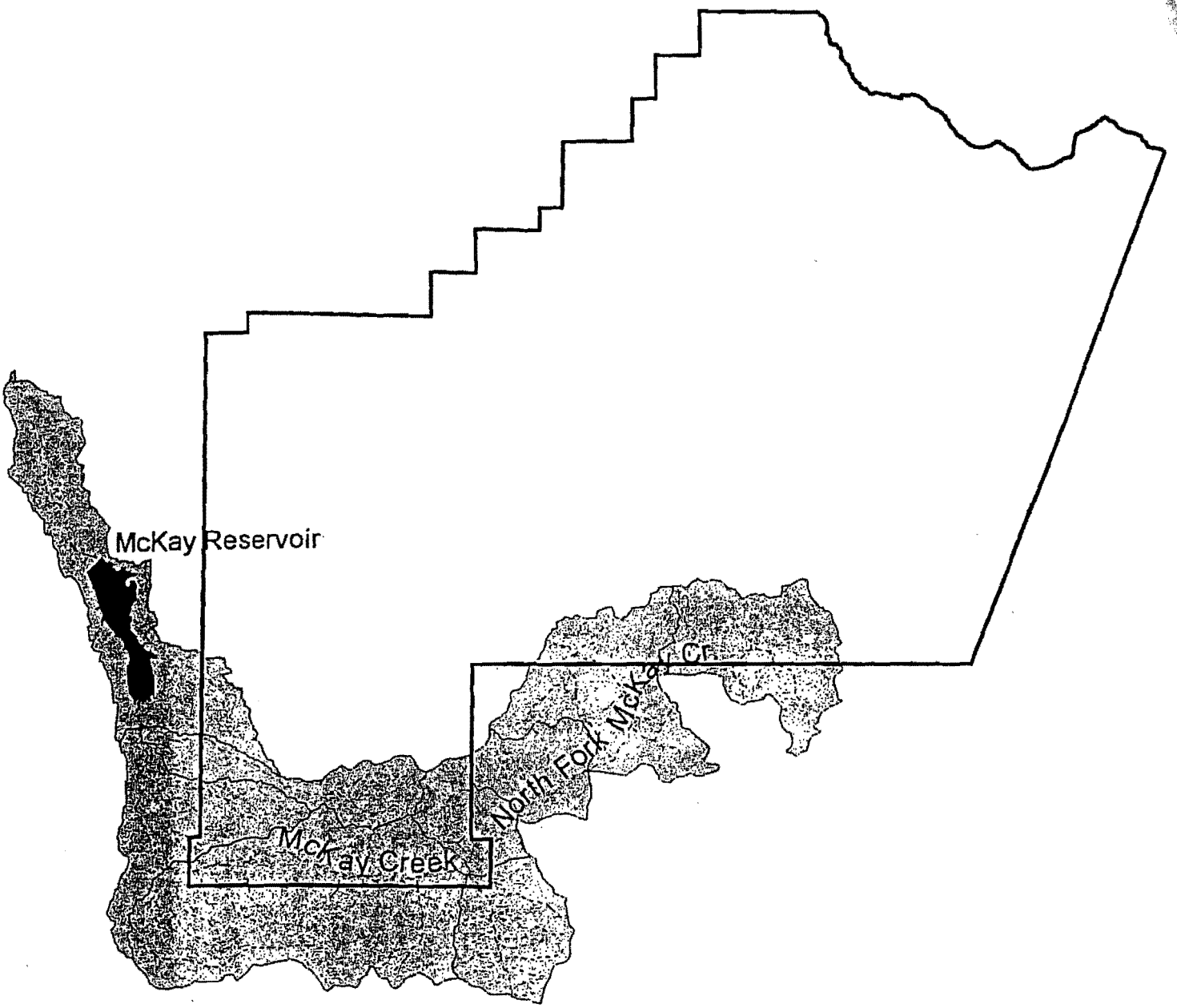
Diminished Reservation Boundary
Tutuilla and Patawa Streams
Tutuilla and Patawa Watershed Areas

McKay Creek Watersheds
Map 7



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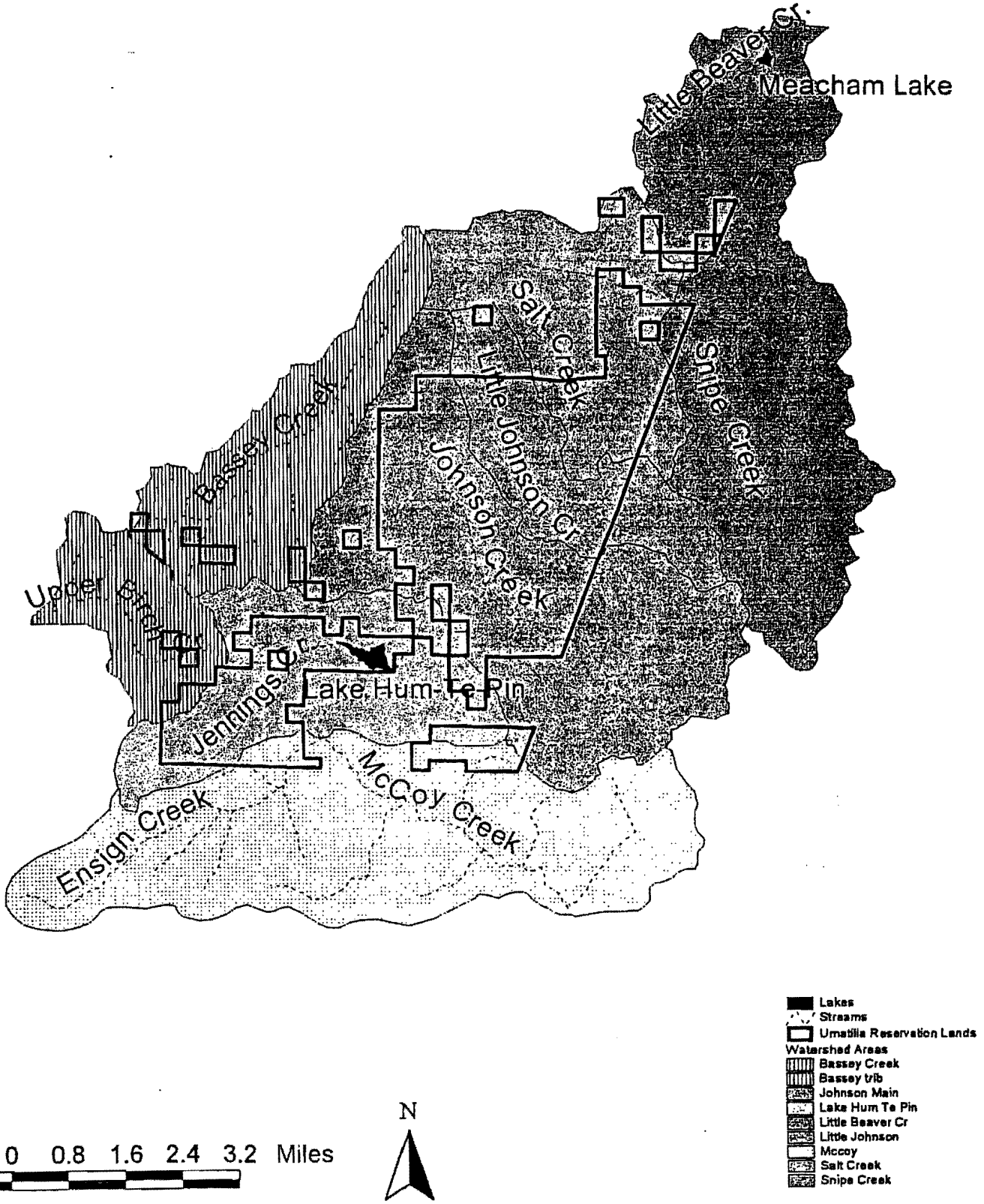
Diminished Reservation Boundary
McKay Reservior
McKay Creek streams
McKay Creek Watersheds

Watersheds on the Southern Portion of the Umatilla Indian Reservation
Map 8