

Presented below are water quality standards that are in effect for Clean Water Act purposes.

EPA is posting these standards as a convenience to users and has made a reasonable effort to assure their accuracy. Additionally, EPA has made a reasonable effort to identify parts of the standards that are not approved, disapproved, or are otherwise not in effect for Clean Water Act purposes.

January 30, 2024

Water Quality Standards for the Fort Peck Indian Reservation, Fort Peck Assiniboine and Sioux Tribes

Effective December 19, 2023

The attached provisions are in effect for Clean Water Act purposes with the following exceptions.

EPA took no action on the following provisions in Appendix B because the Tribes intend to correct these unintentional changes in their next triennial review:

- Revision of aldicarb and aldicarb sulfone water+organism human health criteria from the MCLGs (1 µg/L for each) to the MCLs (3 µg/L and 2 µg/L, respectively)
- Retention of 610 µg/L for the nickel water+organism human health criterion in addition to the adopted 100 µg/L
- Revision of the acute aquatic life criterion for p,p'-Dichlorodiphenyltrichloroethane (4,4'-DDT) from 1.1 to 1 µg/L

Revised 2022

Water Quality Standards

for the

Fort Peck Indian Reservation

Fort Peck Assiniboine and Sioux Tribes

Poplar, Montana

Office of Environmental Protection

P.O. Box 1027

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October 13, 2022

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Appendix A: Stream Beneficial Use for the Fort Peck Indian Reservation.

Appendix B: Fort Peck Numeric Water Quality Standards

Appendix C: Physical and Biological Criteria Table for the Fort Peck Reservation

Appendix D: Agricultural Uses Water Quality Standards

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I. PURPOSE AND AUTHORITY

1) Purpose

A water quality standard defines the water quality goals for a water body, or portion thereof, by designating the use or uses to be made of the water, by setting criteria necessary to protect the uses, and by protecting water quality through antidegradation provisions. The Fort Peck Assiniboine & Sioux Tribes are adopting these standards to protect public health and welfare, enhance the quality of water, and serve the purposes of the Clean Water Act (CWA or Act). It is also the intent of the Tribes that these standards will be sufficient to protect any federally listed threatened or endangered species occurring on the reservation. The purposes of the Clean Water Act are to:

- a) wherever attainable, achieve a level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water, and take into consideration the use and value of public water supplies, and agricultural, industrial, and other purposes, including navigation (sections 101(a)(2) and 303(c) of the Act); and
- b) restore and maintain the chemical, physical, and biological integrity of the Nation's waters (section 101(a)).

These standards will specifically serve the dual functions of:

- c) Assessment. A primary purpose of these water quality standards is to guide and inform efforts to monitor and assess surface water quality within the Reservation. These water quality standards play a central role in the Tribe's water quality protection program and have broad application and use in evaluating potential impacts on water quality from a broad range of causes and sources.
- d) Regulatory Controls. Any regulatory pollution controls established by the Tribe or the Federal Government must be developed to ensure a level of water quality that will satisfy these water quality standards. Regulatory pollution controls established for pollution sources shall be consistent with applicable portions of the Federal Clean Water Act.

2) Authority

These water quality standards are adopted by the Fort Peck Tribal Executive Board under authority established by the Fort Peck Tribes' Constitution, Title II of which provides that "the jurisdiction of the Tribes shall extend to the territory within the original confines of the Fort Peck Reservation as defined in the agreement of December 28 and 31, 1886, confirmed by the Act of May 1, 1888, (25 Stat. Sec. 113, ch. 212)....". This Reservation contains lands owned by both Indian and non-Indians. Title IV of the Constitution provides for a tribal governing body to be known as the Tribal Executive Board. Title VII enumerates the powers of this governing body. The enumerated powers include the power "to make and enforce ordinances covering the Tribes' right to levy taxes and license fees on persons or organizations doing business on the reservation, except that ordinances or regulations affecting non-members trading or residing within the jurisdiction of the tribes shall be subject to the approval of the Secretary of the Interior." (Sec. 3). They also include the powers "to promote public health, education, security, [and] charity" (Sec 4.), "to provide.... for the maintenance of law and order and the administration of justice by establishing by establishing tribal courts and police force.... and to promulgate criminal and civil code or ordinances governing the conduct of the members of the tribes and non-member Indians residing within the jurisdiction of the tribes," (Sec.5), and "to protect and preserve the wildlife and natural resources of the Reservation and to regulate hunting and fishing on the reservation" (Sec. 5(c)). Thus, the Constitution

confirms that tribal law extends to all lands, natural resources, public health and security, and persons doing business on the reservation, as authorized by federal law.

Additionally, Indian tribes have the authority under the Federal Water Pollution Control Act to set water standards for waters within reservation boundaries, based on U.S. Environmental Protection Agency's (EPA's) August 29, 1996 approval of the Tribes' program application.

II TRIENNIAL REVIEW

The Tribes shall from time to time, but at least once every three years, hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards. For example, any water body segment with water quality standards that do not include the goal uses specified in CWA § 101(a)(2) shall be re-examined every three years to determine if any new information has become available. If such new information indicates the CWA goal uses are attainable, the Tribes shall revise the standards accordingly. Public hearings shall be held in accordance with tribal law and US Environmental Protection Agency regulations. The proposed water quality standards revisions and supporting analyses shall be made available to the public prior to the hearing. The Tribe shall submit the revised standards and any supporting analyses to the EPA Regional Administrator for review and approval within 30 days following the final action to adopt revised standards. The tribal submission shall be consistent with EPA requirements found at 40 CFR 131.6.

III. DEFINITIONS

1. Act refers to the Clean Water Act (Public Law 92-500, as amended (33USC 1251, et seq.) (40 CFR 131.3)
2. Acute refers to a stimulus severe enough to rapidly induce an effect; in aquatic toxicity tests, an effect observed in 96 hours or less is typically considered acute. When referring to aquatic toxicology or human health, an acute effect is not always measured in terms of lethality.
3. Acute-chronic ratio is the ratio of the acute toxicity of an effluent or a toxicant to its chronic toxicity. It is used as a factor for estimating chronic toxicity on the basis of acute toxicity data, or for estimating acute toxicity on the basis of chronic toxicity data.
4. Acutely toxic conditions are those acutely toxic to aquatic organisms following their short-term exposure within an affected area.
5. Additivity is the characteristic property of a mixture of toxicants that exhibit a total toxic effect equal to the arithmetic sum of the effects of the individual toxicants.
6. Ambient toxicity is measured by a toxicity test on a sample collected from a water body.
7. Antidegradation Review is the process by which the tribes determine that antidegradation requirements are satisfied for a given regulated activity that may have some effect on surface water quality.

8. Antagonism is the characteristic property of a mixture of toxicants that exhibit a less-than-additive total toxic effect.
9. Aquatic Community is an association of interacting populations of aquatic organisms in a given water body or habitat.
10. Assimilative capacity is the increment of water quality (in terms of concentration), during the appropriate critical condition(s), that is better than the applicable numeric criterion.
11. Averaging period is the period of time over which the receiving water concentration is averaged for comparison with criteria concentrations. This specification limits the duration of concentrations above the criteria.
12. Bioaccumulation is the process by which a compound is taken up by an aquatic organism, both from water and through food.
13. Bioaccumulation factor (BAF) is the ratio of a substance's concentration in tissue versus its concentration in ambient water, in situations where the organism and the food chain are exposed.
14. Bioaccumulative toxic substances are defined as substances with bioconcentration factors (BCFs) of greater than 250
15. Bioconcentration Factor (BCF) is the ratio of a substance's concentration in tissue versus its concentration in water, in situations where the food chain is not exposed or contaminated. For nonmetabolized substances, it represents equilibrium partitioning between water and organisms.
16. Bioassay is a test used to evaluate the relative potency of a chemical or a mixture of chemicals by comparing its effect on a living organism with the effect of a standard preparation on the same type of organism. Bioassays are frequently used in the pharmaceutical industry to evaluate the potency of vitamins and drugs.
17. Bioavailability is a measure of the physiochemical access that a toxicant has to the biological processes
18. of an organism. The less the bioavailability of a toxicant, the less its toxic effect on an organism.
19. Bioconcentration is the process by which a compound is absorbed from water through gills or epithelial tissues and is concentrated in the body.
20. Biological criteria are narrative expressions or numeric values of the biological characteristics of aquatic communities based on appropriate reference conditions. As such, biological criteria serve as an index of aquatic community health. They are also known as biocriteria.
21. Biological integrity is the condition of the aquatic community inhabiting unimpaired water bodies of a specified habitat as measured by community structure and function.
22. Biological monitoring is the use of living organisms in water quality surveillance to indicate compliance with water quality standards or effluent limits and to document water quality trends. Methods of biological monitoring may include, but are not limited to, toxicity testing and biological surveys. It is also known as biomonitoring.

23. Biological survey or biosurvey is collecting, processing, and analyzing a representative portion of the resident aquatic community to determine its structural and/or functional characteristics.
24. Biomagnification is the process by which the concentration of a compound increases in species occupying successive trophic levels.
25. Cancer potency factor (q1*) is an indication of a chemical's human cancer-causing potential derived using animal studies or epidemiological data on human exposure; based on extrapolation of high-dose levels over short periods of time to low-dose levels and a lifetime exposure period through the use of a linear model.
26. Certification means a determination by the Fort Peck Tribes pursuant to CWA §401 that the project or activity for which a federal license or permit is required is not expected to cause a violation of the tribal water quality standards.
27. Chronic defines a stimulus that lingers or continues for a relatively long period of time, often one-tenth of the life span or more. Chronic should be considered a relative term depending on the life span of an organism. The measurement of a chronic effect can be reduced growth, reduced reproduction, etc., in addition to lethality.
28. Community component is a general term that may pertain to the biotic guild (fish, invertebrates, algae), the taxonomic category (order, family, genus, species), the feeding strategy (herbivore, omnivore, predator), or the organizational level (individual, population, assemblage) of a biological entity within the aquatic community.
29. Completely mixed condition is defined as no measurable difference in the concentration of a pollutant that exists across a transect of the water body.
30. Constructed Wetlands are those wetlands intentionally designed, constructed, and operated on upland, non-wetland sites for the primary purpose of wastewater or stormwater treatment or environmental remediation. Constructed wetlands are not "waters of the Tribes."
31. Criteria are elements of water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use.
32. Criteria continuous concentration (CCC) is the EPA national water quality criteria recommendation for the highest instream concentration of a toxicant or an effluent to which organisms can be exposed for an extended period of time without causing a chronic effect (usually expressed as a 4-day average that can be exceeded no more than once in three years, on the average) and unless otherwise stated.
33. Criteria maximum concentration (CMC) is the EPA national water quality criteria recommendation for the highest instream concentration of a toxicant or an effluent to which organisms can be exposed for a brief period of time without causing an acute effect (usually expressed as a 1-hour average that can be exceeded no more than once in three years, on the average) and unless otherwise stated.
34. Critical life stage is the period of time in an organism's lifespan in which it is the most susceptible to adverse effects caused by exposure to a toxicant, usually during early development (egg, embryo, larvae). Chronic toxicity tests are often run on critical life stages to replace longer duration, life cycle tests since the most toxic effect usually occurs during the critical life stage.
35. Design flow is the flow used for steady-state waste load allocation modeling.

36. Designated uses are those uses specified in water quality standards for each water body or segment whether or not they are being attained.
37. Discharge length scale is the square root of the cross-sectional area of any discharge outlet.
38. Diversity is the number and abundance of biological taxa in a specified location.
39. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an observable adverse effect (such as death, immobilization, or serious incapacitation) in a given percentage of the test organisms.
40. Existing uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they are designated in the water quality standards.
41. Federal Indian Reservation, Indian Reservation, or Reservation is defined as all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation.
42. Final acute value (FAV) is an estimate of the concentration of the toxicant corresponding to a cumulative probability of 00.05 in the acute toxicity values for all genera for which acceptable acute tests have been conducted on the toxicant.
43. Frequency is how often criteria can be exceeded without unacceptably affecting the community.
44. Harmonic mean flow is the number of daily flow measurements divided by the sum of the reciprocals of the flows. That is, it is the reciprocal of the mean of reciprocals.
45. High-quality water means a waterbody that meets the Tribes' test of "high quality," as determined according to Section IV.4.a.ii. In general, waters whose existing quality is better than necessary to support fishable/swimmable uses will be considered "high quality".
46. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction (e.g. IC25) in a non-lethal biological measurement of the test organisms, such as reproduction or growth.
47. Lethal concentration is the point estimate of the toxicant concentration that would be lethal to a given percentage of the test organisms during a specified period.
48. Lipophilic is a high affinity for lipids (fats).
49. Load allocations (LA) are the portion of a receiving water TMDL that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources.
50. Lowest-observed-adverse-effect-level (LOAEL) is the lowest concentration of an effluent or toxicant that results in statistically significant adverse health effects as observed in chronic or subchronic human epidemiology studies or animal exposure.
51. Magnitude is how much of a pollutant (or pollutant parameter such as toxicity), expressed as a concentration or toxic unit is allowable.

52. Minimum level (ML) refers to the level at which the entire analytical system gives recognizable mass spectra and acceptable calibrations points when analyzing for pollutants of concern. This level corresponds to the lowest point at which the calibration curve is determined.
53. A mixing zone is an allocated impact zone where numeric water quality criteria can be exceeded as provided by the Tribes' mixing zone and dilution policy.
54. Navigable waters refer to the waters of the United States, including the territorial seas.
55. No-observed-adverse-effect-level (NOAEL) is a tested dose of an effluent or a toxicant below which no adverse biological effects are observed, as identified from chronic or subchronic human epidemiology studies or animal exposure studies.
56. No-observed-effect-concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. Determined using hypothesis testing.
57. Nonthreshold effects are associated with exposure to chemicals that have no safe exposure levels.
58. Office of Environmental Protection (OEP) is the office that will administer the water quality standards for the Fort Peck Tribes.
59. Outstanding National Resource Water (ONRW) is a waterbody that has been identified as possessing outstanding ecological or recreational attributes and has been designated an ONRW in the Tribal Water Quality Standards.
60. Persistent pollutant is not subject to decay, degradation, transformation, volatilization, hydrolysis, or photolysis.
61. Pollution is defined as the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.
62. Priority pollutants are those pollutants listed by the Administrator of EPA under section 307(a) of the Clean Water Act.
63. Reasonable Alternatives shall be identified based on case-specific information. Generally speaking, non-degrading or less degrading pollution-control alternatives shall be considered reasonable where the costs of such alternatives are less than 110% of the costs of the pollution control measures associated with the proposed activity.
64. Reference conditions describe the characteristics of water body segments least impaired by human activities. As such, reference conditions can be used to describe attainable biological or habitat conditions for water body segments with common watershed/catchment characteristics within defined geographical regions.
65. Reference tissue concentration (RTC) is the concentration of a chemical in edible fish or shellfish tissue that will not cause adverse impacts to human health when ingested. RTC is expressed in units of mg/kg.
66. Reference dose (RfD) is an estimate of the daily exposure to the human population that is likely to be without appreciable risk of deleterious effect during a lifetime; derived from NOAEL or LOAEL.

67. Regulated Activity includes activities that require a permit or a water quality certification pursuant to federal law (e.g. CWA §402 NPDES permits, CWA §404 dredge and fill permits, FERC licenses, any activity requiring a CWA §401 certification), and any other activities (which may include nonpoint sources of pollution) where tribal regulations specify that an antidegradation review is required.
68. Section 304(a) criteria are developed by EPA under the authority of section 304(a) of the Act based on the latest scientific information on the relationship that the effect of a constituent concentration has on particular aquatic species and/or human health. This information is issued periodically to the states as guidance for use in developing criteria.
69. State is the State of Montana.
70. Steady-state model is a fate and transport model that uses constant values of input variables to predict constant values of receiving water quality concentrations.
71. Sublethal refers to a stimulus below the level that causes death.
72. Synergism is the characteristic property of a mixture of toxicants that exhibits a greater-than-additive total toxic effect.
73. Trading means establishing upstream controls to compensate for new or increased downstream sources, resulting in maintained or improved water quality at all points, at all times, and for all parameters. Trading may involve point sources, nonpoint sources, or a combination of point and nonpoint sources.
74. Threshold effects result from chemicals that have a safe level (i.e. acute, subacute, or chronic human health effects).
75. Total maximum daily load (TMDL) is the maximum amount of pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL is the sum of the individual wasteload allocations (WLA) for point sources and load allocations (LA) for nonpoint sources and background. An explicit or implicit margin of safety is included.
76. Toxicity test is a procedure to determine the toxicity of a chemical or an effluent using living organisms. A toxicity test measures the degree of effect on exposed test organisms of a specific chemical or effluent.
77. Toxic pollutant refers to those pollutants, or combination of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, or on the basis of information available to the administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions or physical deformations, in such organisms or their offspring.
78. Toxic units (TUs) are a measure of toxicity in an effluent as determined by the acute toxicity units (TUa) or chronic toxicity units (TUc) measured.
79. Toxic unit acute (TUa) is the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end of the acute exposure period.

80. Toxic unit chronic (TUc) is the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period.
81. Use attainability analysis (UAA) is a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in section 131.10(g) (40CFR 131.3).
82. Waste Load Allocation (WLA) is the portion of receiving water's TMDL that is allocated to one of its existing or future point sources of pollution.
83. Water quality assessment is an evaluation of the condition of a water body using biological surveys, chemical-specific analyses of pollutants in water bodies, and toxicity tests.
84. Water quality limited segment refers to any segment where it is known that water quality does not meet applicable water quality standards and/or is not expected to meet applicable water quality standards even after application of technology-based effluent limitations required by sections 301(b)(1)(A) and (B) and 306 of the Act (40CFR 131.3).
85. Water quality portal (WQP) is EPA's computerized water quality database that includes physical, chemical, and biological data measured in water bodies throughout the United States.
86. Water quality standards (WQS) are provisions of Tribal or Federal law which consist of a designated use or uses for the waters of the United States, water quality criteria for such waters based upon such uses, an antidegradation policy, and other general policies affecting application and implementation. Water quality standards are to protect public health or welfare, enhance the quality of the water and serve the purposes of the Act.
87. Waters of the Tribes refer to:
 - a. all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce;
 - b. all interjurisdictional waters (waters that cross the Fort Peck reservation boundary), including interjurisdictional wetlands;
 - c. all other waters such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use or degradation of which would affect or could affect interjurisdictional, interstate, or foreign commerce, including any such waters:
 - i. which are or could be used by interjurisdictional, interstate, or foreign travelers for recreational or other purposes;
 - ii. from which fish or shellfish are or could be taken and sold in interjurisdictional, interstate, or foreign commerce;
 - iii. which are or could be used for industrial purposes by industries in interjurisdictional or interstate commerce.
 - d. all impoundments of water otherwise defined as waters of the Tribes under this definition;
 - e. tributaries of waters in paragraphs (a) through (d) of this definition;
 - f. wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition. Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas; and

- g. waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Act (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria for this definition are not waters of the Tribes.

88. Whole-effluent toxicity is the total toxic effect of an effluent measured directly with a toxicity test.

IV. ANTIDegradation Policy and Review Process

1) Antidegradation Policy

The antidegradation policy applicable to all waters of the Tribes is as follows:

- a. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
- b. Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the Tribes find, after appropriate intergovernmental coordination and public participation, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the Tribes shall assure water quality adequate to protect existing uses fully. Further, the Tribes shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.
- c. Where high-quality waters constitute an outstanding National resource, such as waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.
- d. In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with section 316 of the Act.

2) Antidegradation Review Process

a) Introduction

These antidegradation procedures provide detailed methods and guidance to be followed by the Office of Environmental Protection and the Natural Resources Department in implementing the tribal antidegradation policy found in Section IV. In all cases, applicable technology and water quality-based requirements are to be implemented in combination with the antidegradation requirements described in this document.

Implementation of tribal antidegradation requirements serves to promote the maintenance and protection of existing surface water quality. Under this program, all “waters of the Tribe” are provided one of three different levels of protection. The level of protection that is provided to a specific segment depends upon a number of factors discussed below. At a minimum, all waters are subject to a base level of protection (known as tier 1 or existing use protection); some waters may qualify only for this level of protection.

Antidegradation requirements are triggered whenever a *regulated activity* is proposed that may have some effect on surface water quality. Such activities are reviewed to determine, based on the level of antidegradation protection afforded to the affected waterbody segment, whether the proposed activity should be authorized.

b) Scope

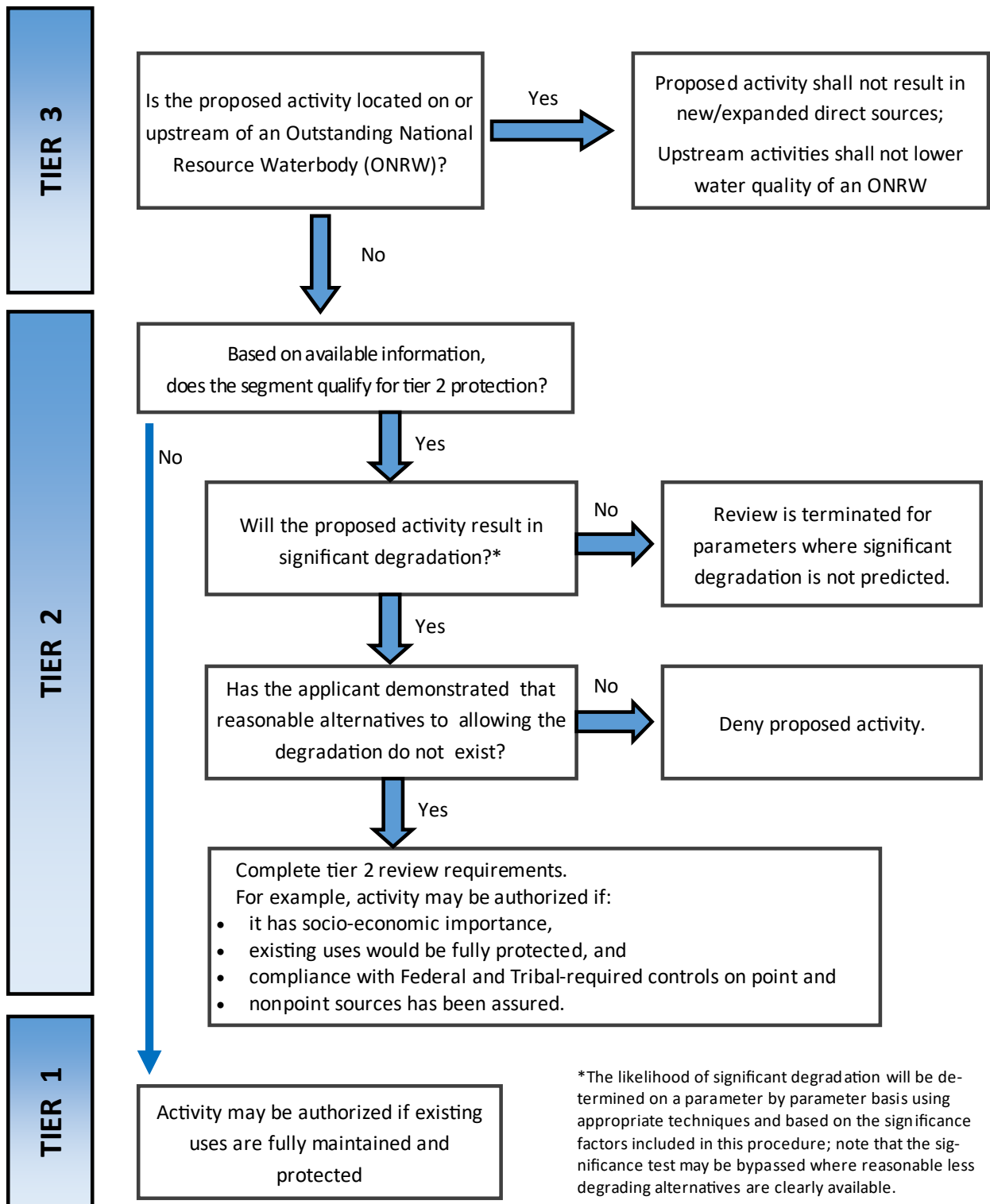
The OEP will conduct some level of antidegradation review for all “regulated activities” (see definition in Section III) that have the potential to affect existing water quality. The specifics of the review will depend upon the water body segment that would be affected, the tier of antidegradation applicable to that waterbody segment, and the extent to which existing water quality would be degraded.

The sequence of steps to be completed by the OEP in conducting an antidegradation review is presented in Figure 1. Only major antidegradation program requirements are represented in Figure 1. In conducting an antidegradation review, the first task that will be addressed by the OEP is to determine which tier of antidegradation applies. This is accomplished, as described in detail below, based on whether an Outstanding National Resource Water (ONRW) designation has been assigned to the segment, or on whether the existing quality of the segment is better than necessary to support “fishable/swimmable” uses.

Once the correct tier of requirements is identified, the OEP determines whether authorizing the proposed activity would be consistent with tribal antidegradation requirements. The major conclusions of the OEP’s review are documented using an antidegradation worksheet, located in Appendix E. Based upon the review findings, a preliminary decision is made by the OEP and subjected to intergovernmental coordination and public participation. Public participation occurs regardless of the outcome of the preliminary decision (i.e., whether the proposed activity would be authorized or denied).

OEP then considers public comments and reaches a final decision regarding whether to authorize the proposed activity pursuant to the tribal antidegradation requirements. The substance and basis of the final decision by the OEP are documented in the administrative record. Following are the procedures to be followed by the OEP in reaching a preliminary decision under each tier of antidegradation.

Figure 1
Antidegradation Implementation Flow Chart



3) TIER 3 PROCEDURES

a). Waters Qualifying for ONRW Protection

i) Qualification Criteria

Segments will be subject to tier 3 protection requirements only where an ONRW designation has been adopted as a revision to the water quality standards for the segment, consistent with Tribal procedures and EPA requirements. In adopting such a designation, all applicable public participation requirements will be addressed. The factors to be considered in determining whether to assign an ONRW designation may include the following: a) location (e.g. on federal lands such as national parks, national wilderness areas, or national wildlife refuges), b) previous special designations (e.g. wild and scenic river), c) existing water quality (e.g., pristine or naturally-occurring), d) ecological value (e.g. presence of threatened or endangered species during one or more life stages, reference sites for ecoregions), e) recreational or aesthetic value (e.g., presence of an outstanding recreational fishery), and f) other factors that indicate outstanding ecological, cultural or recreation value (e.g., rare or valuable wildlife habitat, critical ceremonial value). Where determined appropriate, the ONRW designation may be applied to an entire category of waters (e.g., a wilderness area or areas).

ii) Water Quality Requirements

Outstanding water quality is not a prerequisite for ONRW designation. The only requirement is that the segment has outstanding value as an aquatic resource, which may derive from the presence of exceptional scenic or recreational attributes, or from the presence of unique or sensitive ecosystems that have naturally low water quality as measured by conventional parameters.

iii) Public Nomination

The public may nominate any tribal water for ONRW protection at any time by sending a written request to the following address: OEP, P.O. Box 1027, Poplar, MT 59255. The written request should explain why an ONRW designation is warranted based on one or more of the factors identified above.

b). Direct Sources to ONRWs

i). Prohibition on New or Expanded Sources

Any proposed activity that would result in a permanent new or expanded direct source of pollutants to any segment which has been designated as an ONRW is prohibited. This prohibition applies to new sources, expansion of existing sources in which treatment levels are maintained, and expansion of existing sources in which treatment levels are increased to maintain existing pollutant loading levels. Regardless of effluent quality, any new or expanded direct source is prohibited.

c). Sources Upstream of ONRWs

i). No Change in Water Quality Allowed

Any proposed activity that would result in a permanent new or expanded indirect source of pollutants (i.e., an upstream source) to an ONRW segment is prohibited except where such source would have no effect on the existing quality of the ONRW segment. Effects on ONRW water quality resulting from upstream sources will be determined based on appropriate techniques and best professional judgment. Factors that may be considered in judging whether ONRW quality would be affected include: a) percent change in ambient

concentrations predicted at the appropriate critical condition(s), b) percent change in loadings (i.e., the new or expanded loadings compared to total existing loadings to the segment), c) percent reduction in available assimilative capacity, d) nature, persistence, and potential effects of the parameter, e) potential for cumulative effects, and f) degree of confidence in the various components of any modeling technique utilized (e.g., associated with the predicted effluent variability).

ii) Trading

A proposed activity that will result in a new or expanded upstream source may be allowed where the applicant agrees to implement or finance upstream controls of point or nonpoint sources sufficient to offset the water quality effects of the proposed activity. Where such trading occurs upstream of an ONRW segment, tier 3 requirements will be considered satisfied where the applicant can show that water quality at all points within the study area will be either maintained or improved. The OEP, with assistance from the Environmental Protection Agency, will document the technical rationale for the trade. In some cases, this may be addressed as one element of a Total Maximum Daily Load (TMDL) analysis.

iii) Information Requirements

The applicant may be required to provide information sufficient to evaluate the potential effects of the proposed activity on downstream ONRWs. The information that will be required in a given situation will be identified on a case-by-case basis by the OEP.

d. Temporary and Limited Effects

i) Guidelines

A direct or upstream source that would result in a temporary and limited effect on ONRW water quality may be authorized. The decision regarding whether effects will be temporary and limited will be handled on a case-by-case basis. As a non-binding rule of thumb, activities with durations less than one month and resulting in less than a 5% change in ambient concentration will be deemed to have temporary and limited effects. Decisions on individual proposed activities may be based on the following factors: a) length of time during which water quality will be lowered, b) percent change in ambient concentrations, c) parameters affected, d) likelihood for long term water quality benefits to the segment (e.g. as may result from the dredging of contaminated sediments), e) degree to which achieving applicable water quality standards during the proposed activity may be at risk, and f) potential for any residual long term influences on existing uses.

4) TIER 2 PROCEDURES

a) Waters Qualifying for Tier 2 Protection

i) Qualification Criteria

OEP will determine whether a segment qualifies for Tier 2 protection during the antidegradation review of a proposed activity. Such decisions will be based on all relevant information including any ambient water quality (i.e., physical, chemical, biological) data submitted by the applicant. The criteria that will be used in identifying high-quality tier 2 waters are described in Section IV.4.a. ii. Unlike the ONRW protection program described above, a revision to water quality standards is not necessary in order for the OEP to apply Tier 2 requirements to a segment during the course of an antidegradation review.

ii) Qualification Factors

Decisions regarding whether a waterbody is high quality and subject to tier 2 protection requirements will be based on a best professional judgment of the overall quality and value of the segment. In general, waters with existing quality that is better than necessary to support fishable/swimmable uses will be considered high quality and subject to tier 2 requirements. The factors that may be considered in determining whether a segment satisfies the high-quality test include the following: a) existing aquatic life uses, b) existing recreational, cultural or aesthetic uses, c) existing water quality for all parameters (i.e., subject to the availability of monitoring data or other information for the segment, upstream segments, or for comparable segments), and d) the overall value of the segment from an ecological and public use perspective. Note that attainment of both aquatic life (fishable) and recreational (swimmable) uses is not required in order to qualify as a high-quality segment.

iii) Presumptive Applicability

In general, it is presumed that a majority of tribal waters qualify for tier 2 protection. However, there are some waters on the Reservation where neither of the Clean Water Act fishable/swimmable goal uses are attained. It is the intent of these procedures to apply only existing use (tier 1) protection to such waters. There also may be waters on the Reservation where one or both of the fishable/swimmable uses are attained, but existing water quality is not “better than necessary” to support the goal uses (i.e. assimilative capacity does not exist for a number of parameters). It is the intent of these procedures to apply only existing use (tier 1) protection to such waters provided that there is no assimilative capacity for each of the parameters to be affected by the proposed activity.

iv) Criteria Exceedances

Occasional exceedances of one or more narrative or numeric water quality criteria may constitute nonattainment sufficient to preclude tier 2 protection. In waters where exceedances have occurred and continue to occur for one or more parameters, a judgment will be made based on the factors identified above and in consideration of information submitted by the applicant and by the public. As a general operating rule, tier 2 protection will be applied even where the criteria for some parameters are not always satisfied.

v) Information Requirements

The applicant may be required to provide monitoring data or other information about the affected waterbody to help determine the applicability of tier 2 requirements based on the high-quality test. The information that will be required in a given situation will be identified on a case-by-case basis. Because these procedures presume that tier 2 protection requirements will be applied, such information will typically be required of the applicant only where this presumption is in dispute. Such information may include recent ambient chemical, physical, and biological monitoring data sufficient to characterize, during the appropriate critical condition(s), the existing uses and the spatial and temporal variability of existing quality of the segment for the parameters that would be affected by the proposed activity.

vi) Characterizing Existing Quality

The OEP will use available water quality data collected by the OEP or other comparable and credible data. This water quality data should be no more than 6 years in age for characterizing existing conditions. OEP routinely collects water column data as well as physical and biological data on the primary streams for the triennial review of the Tribes’ Water Quality Standards. The Missouri River has many other agencies besides OEP collecting water quality chemistry, physical and biological data. OEP has developed relationships with those other Federal and State agencies, which will allow access to those data. Characterization of existing

quality will appropriately consider spatial and temporal variability. Assimilative capacity will be identified for the appropriate critical condition which, depending on the situation, may be at high or low flow.

b) Significant Degradation

i) Overview

Once it is determined that tier 2 protection applies to a waterbody, the next step in the review process is to determine whether the degradation that will result from the proposed activity is significant enough to warrant further review (such as evaluation of alternatives). The factors to be addressed in judging the significance of the proposed activity are identified in paragraph (ii) of this section. Where the significance of the degradation associated with a proposed activity is in dispute, the factors identified in paragraph (ii) should also be the focal point of opposing views by the applicant or the public.

ii) Significance Factors

The likelihood that a proposed activity will pose significant degradation will be judged by the OEP for all water quality parameters that would be affected by the proposed activity. Such significance judgments will be made on a parameter-by-parameter basis. The OEP will identify and eliminate from further review only those proposed activities that present insignificant threats to water quality. Proposed activities will be considered significant and subject to tier 2 requirements where significant degradation is projected for one or more water quality parameters. Because determinations of significant degradation are most appropriately made based on case-specific information, these procedures do not provide rigid decision criteria for judging significant changes in water quality. Rather, significant degradation may be demonstrated with respect to any one (or a combination) of the following factors: a) percent change in ambient concentrations predicted at the appropriate critical condition(s), b) the difference, if any, between existing ambient quality and ambient quality that would exist if all point sources were discharging at permitted loading rates, c) percent change in loadings (i.e., the new or expanded loadings compared to total existing loadings to the segment or, for existing facilities only, the proposed permitted loadings compared to the existing permitted loadings), d) percent reduction in available assimilative capacity, e) nature, persistence, and potential effects of the parameter, f) potential for cumulative effects, g) predicted impacts to aquatic biota, h) degree of confidence in any modeling techniques utilized, i) the difference, if any, between permitted and existing effluent quality, and j) the duration of the proposed activity or the expected water quality changes.

1. Required Analyses. Based on one or more of the significance factors identified above, the OEP may make determinations of significant degradation based on appropriate modeling techniques coupled with detailed characterization of the existing background water quality. However, determinations of significance need not be complicated, data-intensive, or resource-intensive. It is not the intent of these procedures to require detailed analyses to address each of the factors identified above. Where appropriate, determinations of significance may be based on simple analyses. For example, proposed activities may be judged as insignificant where: a) available dilution exceeds 100:1, b) the proposed activity would not result in a significant increase of loadings for any parameter, c) there is substantial potential for the proposed activity to result in a net long-term water quality benefit to the segment, or d) the projected water quality changes are temporary and limited. Likewise, a significant increase in loading for any given parameter may be the basis for concluding that significant degradation will occur.

2. Persistent Toxicants. The significance of proposed new or expanded sources of bioaccumulative or other persistent toxic substances will be judged depending upon, for example, existing loadings of the substances to the segment from all sources. The OEP's interpretation of monitoring data or other

information indicating fish tissue or sediment accumulation in the watershed will be considered with respect to judging the significance of new or expanded sources of persistent toxic substances.

iii) General Guidelines

As a non-binding rule of thumb, proposed activities that would lower ambient quality of any parameter by more than 5%, reduce the available assimilative capacity by more than 5%, or increase pollutant loadings to a segment by more than 5% will be presumed to pose significant degradation. The intent of this guideline is to establish a *de minimis* test of significance and to eliminate from further review only those proposed activities that will result in truly minor changes in water quality.

iv) By-passing the Significance Test

Where available information clearly indicates that reasonable non-degrading or less-degrading alternatives to lowering existing water quality exist, the OEP may bypass the significant degradation requirements and direct the applicant to demonstrate the necessity of the degradation pursuant to Section IV.4.c below.

v) Trading

The OEP may also conclude that a proposed activity will not pose significant degradation based upon the specifics of any upstream/downstream trading that has been agreed to by the project applicant. The OEP, with assistance from the EPA, will document the technical rationale for the trade. In some cases, this may be addressed as one element of a Total Maximum Daily Load (TMDL) analysis.

vi) Information Requirements

The applicant may be required to provide monitoring data or other information about the affected waterbody and/or proposed activity to help determine the significance of the proposed degradation for specific parameters. The information that will be required in a given situation will be identified on a case-by-case basis. Because these procedures establish a fairly low threshold of significance, in many cases a large database will not be necessary to determine that a proposed activity will result in significant degradation. The information required may include recent ambient chemical, physical, or biological monitoring data sufficient to characterize, during the appropriate critical condition(s), the spatial and temporal variability of existing background quality of the segment for the parameters that would be affected by the proposed activity, as well as the water quality that would result if the proposed activity were authorized. Federal TMDL procedures for characterizing existing water quality and projecting future water quality will be the basis for identifying needed information and interpreting available data.

vii) Determine Significance of Proposed Activity

Proposed regulated activities determined to be significant by OEP shall be subject to the tier 2 review requirements described below. If OEP determines that an activity will not pose significant degradation for any parameter, no further antidegradation tier 2 requirements shall apply; however, such activities must still meet all technology and/or water quality based control requirements or conditions of the permit or the water quality certification.

c) Evaluation of Alternatives to Lower Water Quality

i) Role of OEP

The primary emphasis of OEP's tier 2 antidegradation reviews will be to determine whether reasonable non-degrading or less-degrading alternatives to allowing the proposed degradation are available. The OEP will first evaluate any alternatives analysis submitted by the applicant for consistency with the minimum requirements described below. If an acceptable analysis of alternatives was completed and submitted to the OEP as part of the initial project proposal, no further evaluation of alternatives will be required of the applicant. If an acceptable alternatives analysis has not been completed, the OEP will work with the project applicant to ensure that an acceptable alternatives analysis is developed.

ii) Role of the Applicant

The applicant of any proposed activity that would significantly lower water quality in a high-quality segment is required to prepare an evaluation of alternatives. The evaluation is required, at a minimum, to provide substantive information pertaining to the costs and environmental impacts associated with the following alternatives: a) pollution prevention measures; b) reduction in the scale of the project, c) water recycle or reuse, d) process changes, e) innovative treatment technology, f) advanced treatment technology, g) seasonal or controlled discharge options to avoid critical water quality periods, h) improved operation and maintenance of existing treatment system, and i) alternative discharge locations.

iii) Preliminary Determination

Once the OEP has determined that feasible alternatives to allowing the degradation have been adequately evaluated, the OEP shall make a preliminary determination regarding whether reasonable non-degrading or less-degrading alternatives are available. This determination will be based primarily on the alternatives analysis developed by the project applicant but may be supplemented with other information or data. As a *non-binding* rule of thumb, non-degrading or less-degrading pollution control alternatives with costs that are less than 110% of the costs of the pollution control measures associated with the proposed activity shall be considered reasonable. If the OEP determines that reasonable alternatives to allowing the degradation do not exist, the OEP shall continue with the tier 2 review and document the substance and basis for that preliminary determination using the antidegradation review worksheet.

iv) If Reasonable Alternatives Exist

If the OEP makes a preliminary determination that one or more reasonable alternatives to allowing the degradation to exist, the OEP will work with the project applicant to revise the project design. If a mutually acceptable resolution cannot be reached, the OEP will document the alternatives analysis findings and public notice a preliminary decision, based on antidegradation tier 2 requirements, to deny the activity.

v) Role of Public

Based upon comments and information received during the public comment period, the OEP may reverse its preliminary determination regarding the availability of reasonable alternatives to allowing the degradation.

d) Determination of Socio-Economic Importance

i) Role of the Applicant

The applicant is required to demonstrate the social and economic importance of the proposed activity. The factors to be addressed in such a demonstration may include, but are not limited to, the following: a) employment (i.e., increasing, maintaining, or avoiding a reduction in employment), b) increased production, c) improved community tax base, d) housing, and e) correction of environmental or public health concern.

ii) Role of OEP

Prior to authorizing any proposed activity that would significantly lower the water quality of tier 2 water, the OEP shall ensure that the proposed activity will provide important social or economic development in the area in which the waters are located. In making a preliminary determination, the OEP will rely primarily on the demonstration made by the applicant. However, the OEP may weigh the applicant's demonstration against counterbalancing socio-economic costs associated with proposed activity, such as projected negative socio-economic effects on the community and projected environmental effects (i.e., those determined in the significance and/or alternatives analysis decision processes).

iii) Additional Information Requirements

If the information available to the OEP is not sufficient to make a preliminary determination regarding the socio-economic costs or benefits associated with the proposed activity, the OEP may require the project applicant to submit specific items of information needed to support a determination of importance. The types of information required of the applicant will be determined on a case-by-case basis, but may include: a) information pertaining to current aquatic life, recreational, or other waterbody uses, b) information necessary to determine the environmental impacts that may result from the proposed activity, c) facts pertaining to the current state of economic development in the area (e.g., population, area employment, area income, major employers, types of businesses), d) government fiscal base, and e) and land use in the areas surrounding the proposed activity.

iv) Mitigation

The applicant may voluntarily submit a proposal to mitigate the adverse environmental effects of the proposed activity (e.g., in-stream habitat improvement, bank stabilization/upgraded riparian vegetation). Such mitigation plans should describe the proposed mitigation measures and the costs of such mitigation. Such a mitigation plan will not release the OEP from its obligation to require any reasonable non-degrading or less-degrading alternative under Part C(vi) of this procedure, nor will such plans have any effect on the effluent limitations to be included in any NPDES permit (except possibly where a previously-completed mitigation project has resulted in an improvement in background water quality that affects the water quality-based limit). Such mitigation plans will be developed and implemented by the applicant as a means to further minimize the environmental effects of the proposed activity and to increase its socio-economic importance. It is anticipated that an effective mitigation plan may, in some cases, allow the Tribe to conclude "importance" and to authorize proposed activities that could otherwise not be authorized pursuant to Tribal antidegradation requirements. Mitigation plans should include criteria for determining the success of the mitigation, legal commitment for follow-up monitoring and additional work if necessary, and where practicable, a commitment to implement the mitigation before the project and water quality degradation are allowed.

v) Preliminary Determination

Once the OEP has reviewed available information pertaining to the socio-economic importance of the proposed activity, the OEP shall make a preliminary determination regarding importance. If the OEP determines that the proposed activity has social or economic importance in the area in which the affected waters are located, the OEP shall continue with the tier 2 review and document the substance and basis for that preliminary determination using the antidegradation review worksheet.

vi) If Importance is Found Lacking

If the OEP make a preliminary determination that the proposed activity does not have social or economic importance in the area in which the affected water is located, the OEP will document that antidegradation review finding and public notice a preliminary decision, based upon antidegradation tier 2 requirements, to deny the proposed activity.

vii) Role of Public

Because the socio-economic importance of a proposed activity is a question best addressed by local interests, the OEP will give particular weight to the comments submitted by local governments, land use planning authorities, and other local interests in determining whether the balancing of benefits and costs that was the basis for the OEP's preliminary decision was appropriate. Based upon comments and information received during the public comment period, the OEP may reverse its preliminary determination regarding the social or economic importance of a proposed activity.

e) Ensure Full Protection of Existing Uses

i) See Section IV.5; Tier 1 Procedures

Prior to authorizing any proposed activity that would significantly degrade a tier 2 water, the OEP shall ensure that existing uses will be fully protected consistent with the tier 1 implementation procedures provided below.

f) Ensure Implementation of Tribal-Required Point and Nonpoint Source Controls

i) Role of OEP

Prior to authorizing a regulated activity that would significantly degrade a tier 2 water, the OEP shall determine that compliance with required controls on all point and nonpoint sources in the zone of influence has been assured. This requirement is intended to ensure that regulated activities that will result in water quality degradation for a particular parameter will not be authorized where there are existing unresolved compliance problems involving the same parameter in the zone of influence of the proposed activity. The "zone of influence" is determined as appropriate for the parameter of concern, the characteristics of the receiving waterbody (e.g., lake versus river, etc.), and other relevant factors. Where available, a TMDL analysis or other watershed-scale plan will be the basis for identifying the appropriate zone of influence. The OEP may conclude that such compliance has not been assured where facilities are in noncompliance with their NPDES permit limits. However, the existence of schedules of compliance for purposes of NPDES permit requirements will be taken into consideration in such cases. Where there are nonpoint sources that are regulated activities, the OEP shall determine that any tribal-required controls or best management practices have been achieved or that a plan that assures such compliance has been developed. In other words, required controls on existing regulated sources in the area need not be finally achieved prior to authorizing a proposed activity provided there is reasonable assurance of future compliance.

ii) Preliminary Determination

Based upon available data or other information, the OEP will make a preliminary determination regarding whether compliance with required controls on point and nonpoint sources in the zone of influence has been assured. If the preliminary determination is that such compliance has been assured, the OEP shall continue with the tier 2 review and document the substance and basis for that preliminary determination using the antidegradation review worksheet.

iii) Controls have not been Assured

If the OEP makes a preliminary determination that compliance with required point and nonpoint source controls has not been assured, the OEP shall document that antidegradation review finding and public notice a preliminary decision based upon tier 2 requirements, to deny the proposed activity.

iv) Role of Public

Based upon comments and information received during the public comment period, the OEP may reverse its preliminary finding regarding the degree to which compliance with required point and nonpoint source controls has been assured.

5) TIER 1 PROCEDURES

a) Water Qualifying for Tier 1 Protection

i) Waters Subject to Tier 1 Requirements

All waters are subject to tier 1 protection. Those which are *only* subject to tier 1 protection are those waters that have not been assigned an ONRW designation, and that do not currently possess the overall water quality or value necessary to meet the high-quality test. In general, tier 1-only waters are those segments where fishable/swimmable goal uses are not attained, or where assimilative capacity does not exist for any of the parameters that would be affected by the proposed activity.

b) Two-Part Requirement

i) Protect Water Quality and Uses

The tribal antidegradation policy requires that existing uses, and the water quality necessary to protect existing uses, shall be maintained and protected. This requirement contains two parts: 1) protection of existing uses, 2) protection of the water quality necessary to maintain and protect existing uses.

c) Ensure Water Quality Necessary to Maintain and Protect Existing Uses

i) Confirm that Designated Uses Address Existing Uses

Prior to authorizing any proposed activity, the OEP shall ensure that water quality sufficient to protect existing uses fully will be achieved. An important decision that must be made by the OEP is whether the waterbody currently supports, or has supported since November 28, 1975, an existing use that has more stringent water quality requirements than the currently designated uses. In making this decision, the OEP will focus on whether a higher designated use (i.e., based on the Tribal use designations) should be assigned to the waterbody to reflect an existing use. Where the OEP determines that the currently designated uses appropriately reflect the existing waterbody uses, the OEP shall document that preliminary determination using the antidegradation review worksheet. In such cases, the water quality control requirements necessary to protect designated uses will be presumed to also fully protect existing uses.

Where the designated uses are found to be appropriate, but there is clear and convincing evidence that the numeric criteria adopted is for the protection of designated uses would not adequately protect existing uses, the Tribes may either apply more stringent numeric criteria that will protect existing uses (where defensible criteria are readily available) or pursue the development of criteria that will protect existing uses. The applicant may be required to assist with any needed studies. The OEP will apply appropriate, defensible criteria as necessary to protect existing uses, and propose any needed revisions to the water quality standards for the affected segments at the earliest rulemaking opportunity.

ii) Where Designated Uses do not Address Existing Uses

The procedure outlined in paragraph (i) above will ensure that designated uses appropriately address existing uses pursuant to tribal and federal requirements. Where this is not the case, a revision to tribal standards may be needed because, pursuant to the tribal and federal water quality standards regulations, designated uses are required to reflect, at a minimum, all attainable (including currently attained, or existing) uses. Where existing uses with more stringent protection requirements than currently designated uses are identified, the OEP will ensure levels of water quality necessary to protect existing uses fully and, at the earliest opportunity, propose that appropriate revisions to the designated uses be adopted into the tribal water quality standards. However, the OEP will not delay tier 1 protection pending the reclassification action.

iii) Require Water Quality Necessary to Protect Existing Uses

Where OEP determines that the waterbody currently supports, or has supported since November 28, 1975, an existing use that has more stringent water quality requirements than the currently designated uses, the OEP shall identify the level of water quality necessary to protect existing uses fully for the parameters in question. The OEP's estimate of the level of water quality required will be based on numeric tribal water quality criteria, narrative tribal criteria, and/or federal criteria guidance. In general, water quality sufficient to maintain and protect existing uses for the parameters in question will be assured using the same procedures that would have been followed had the water quality standards (i.e., uses and criteria) been appropriately assigned to begin with. The preliminary finding regarding existing uses and the level of water quality necessary to protect existing uses will be documented using the antidegradation review worksheet.

iv) Trading

The procedures outlined above describe one way in which a new or expanded discharge can be allowed consistent with Tier 1 requirements. If, for example, existing water quality for a given parameter exceeds the criteria determined appropriate for the protection of existing uses (as determined above), one option to meet Tier 1 requirements would be to require a new or expanded discharge to meet those criteria at the end of pipe or some other effluent requirement that is specified in a TMDL. As an alternative, a proposed activity that will result in a new or expanded source could also be allowed where the applicant agrees to implement or finance upstream controls of point or nonpoint sources sufficient to protect existing uses fully. Under such a trading arrangement, the effluent limits for the new or expanded source may be less stringent than the criteria at end of pipe, provided that the net effect of the trade is that the level of water quality necessary to protect existing uses will be achieved. The OEP, with assistance from the Environmental Protection Agency, will document the technical rationale for the trade. In some cases, this may be addressed as one element of a TMDL analysis.

v) Additional Information Requirements

The applicant may be required to provide monitoring data or other information about the affected waterbody to help determine whether designated uses also reflect existing water body uses. The applicant may also be required to provide information that will assist in determining the level of water quality necessary to protect existing uses fully. The information that will be required in a given situation will be identified on a case-by-case basis. Because these procedures presume that designated uses reflect existing uses, such information will typically be required only where this presumption is in doubt, based on the information available to the OEP. Where this presumption is in doubt, the applicant may be required to provide physical, chemical, or biological monitoring data or other information needed by the OEP to identify and protect existing uses.

d) Ensure Full Protection of Existing Uses

i) Presume that Applicable Criteria Will Protect Existing Uses

The procedure just discussed presumes that implementation of the water quality criteria established to protect designated uses will also incidentally protect existing uses. However, situations may arise where a proposed (regulated) activity will impair or eliminate an existing use in a manner that cannot readily be predicted with the water quality criteria established to protect designated uses. Examples include situations where appropriate and specific water quality criteria are not yet in place. (e.g., impacts to aquatic life habitat that may result from the discharge of “clean” sediment).

ii) Where Applicable Criteria Will Not Protect Existing Uses

Where the OEP concludes that existing uses will be impaired by a regulated activity, the OEP will work with the project applicant to revise the project design such that existing uses will be maintained and protected. If a mutually- acceptable resolution cannot be achieved, the OEP will document the basis for its preliminary determination regarding the loss or impairment of existing uses that will occur using the antidegradation review worksheet, identify appropriate control requirements, up to and including denial of the proposed activity, and public notice its preliminary decision. Where possible, such effects will be predicted based upon quantitative methods. In predicting effects, the OEP will use all information submitted by the applicant, available modeling techniques, and best professional judgment based upon experience with similar types of projects, as appropriate.

iii) Where Loss or Impairment of Existing Uses Is Not Predicted

Where the OEP determines that implementation of the applicable water quality criteria will fully protect the existing uses, that finding will be documented using the antidegradation review worksheet.

6) DOCUMENTATION, PUBLIC REVIEW, AND INTERGOVERNMENTAL COORDINATION PROCEDURES

a) Documentation of Antidegradation Review Findings

i) Antidegradation Worksheet

The OEP will complete an antidegradation review for all proposed regulated activities that may have some effect on surface water quality. The findings of all antidegradation reviews will be documented using an antidegradation worksheet, a copy of which is in Appendix E.

b) Public Review Procedures

i) Public Notice Requirements

Generally, the regulated activities triggering an antidegradation review will be generated by other federal agencies including but not limited to the US Environmental Protection Agency, the US Army Corps of Engineers, the Bureau of Indian Affairs, and the Bureau of Reclamation. As part of the public notice requirements for these agencies, the OEP will provide a copy of the antidegradation worksheet which may be incorporated into the public notice issued by these cooperating agencies. Where an antidegradation review results in the identification of water quality protection requirements that may affect activities other than the proposed activity under review (e.g., the review identifies an existing use that is not currently designated or a numeric criterion that is not stringent enough to protect an existing use), the Tribes will make a reasonable effort to inform potentially affected entities located on and off the reservation so that they have an opportunity to review and comment on the basis for the OEP’s antidegradation review.

ii) Content of Public Notice

If the Tribes take an action without a federal partner, a public notice will be prepared and noticed in the Tribal Newspaper, the Journal, for two weeks with comments taken for two weeks after the public notice is run the newspaper. In preparing the public notice, the OEP will at a minimum: a) outline the substance and basis of the Tribes' antidegradation review conclusions, including the preliminary finding regarding whether to authorize the proposed activity, b) request public input on particular aspects of the antidegradation review that might be improved based on public input (e.g. existing uses of the waterbody by the public, the preliminary determination on socio-economic importance), c) provide notice of the availability of the antidegradation review worksheet, d) provide notice of the availability of any introductory public information regarding the state antidegradation program, and e) include a reference to the Tribes' antidegradation policy.

c) Intergovernmental Coordination Procedures

i) Minimum Process

At a minimum, the OEP will provide copies of the completed antidegradation review worksheet and/or the public notice to appropriate tribal, state, and federal government agencies along with a written request to provide comments by the public comment deadline.

V. NARRATIVE WATER QUALITY CRITERIA

1) Criterion

All surface water on the reservation shall be free from substances attributable to wastewater discharges or other pollutant sources that:

- a) settle to form objectionable deposits,
- b) float as debris, scum, oil, or other matter forming nuisances,
- c) produce objectionable color, odor, taste, or turbidity,
- d) cause injury to, or are toxic to, or produce adverse physiological responses in humans, animals, or plants; or
- e) produce undesirable or nuisance aquatic life.

2) Implementation

The narrative water quality criteria shall be implemented taking into consideration appropriate EPA technical guidance concerning the development of water quality-based controls, such as methods described in the Technical Support Document for Water Quality Based Toxics Control, EPA, 1991. For substances for which numeric water quality criteria have not been adopted, these narrative water quality criteria shall be implemented considering appropriate information, including any criteria guidance issued by EPA under CWA § 304(a) and/or information in EPA's toxicity databases. For substances where numeric criteria have not been adopted for the public water supply use, these narrative water quality criteria

shall be implemented considering any drinking water standards or health advisories issued by EPA under the Safe Drinking Water Act.

Implementation of (1)(d) for purposes of NPDES permits shall result in appropriate acute and chronic chemical-specific and whole effluent toxicity effluent quality limitations consistent with the federal water quality-based permitting requirements found at 40 CFR 122.44(d). Whole effluent toxicity (WET) limitations shall be established where appropriate as required in the latest edition of the EPA region VIII NPDES Whole Effluent Toxics Control Program document.

VI. NARRATIVE BIOLOGICAL CRITERIA

The Fort Peck Tribes have used biological monitoring as an assessment tool on the streams within the exterior boundaries of the Reservation excluding the Missouri River. In addition to identifying water quality problems, biological monitoring data has been used and will continue to be used to prioritize abatement projects for point and non-point source activities on the Reservation.

A reference condition is defined using characteristics of the biological communities observed in sites with minimal human disturbance. The reference condition is compared to the biological condition observed in the stream. This comparison is related to the biological condition category of the stream. The biological condition categories are: full support and non-support. To prioritize mitigations, the non-support category is further divided into categories of moderately impacted and severely impacted.

1) Criterion

Reservation waters shall be free from substances in concentrations or combinations that would adversely alter the structure and function of aquatic communities, as defined by the reference condition.

For the Missouri River, water quality shall be maintained sufficient to fully support all designated uses, including the aquatic life designated use. No adverse changes in aquatic community composition may occur.

2) Implementation

Quantitative biological assessments may be used to evaluate whether the narrative criteria in Section VI.1 are supported. The Fort Peck Tribes have calibrated multimetric indices for assessing benthic macroinvertebrate conditions in streams as a basis for numeric translators of the narrative criterion. Application of the indices for determining biological conditions for streams shall be in accordance with methods documented by the Office of Environmental Protection (see OEP: Determination of Biological Conditions for Rivers and Streams). The methods shall be subjected to technical review and shall produce consistent and objective results. The results of the quantitative biological assessments may be used for purposes of water quality assessment, including, but not limited to, prioritizing abatement projects for activities on the Reservation resulting in point and nonpoint sources of pollution. If biological assessments indicate a biologically impacted water body, an evaluation of potential causes, including nonchemical stressors (e.g., habitat degradation or hydrological modification), will be conducted to determine associations with potential pollutants. Physical parameters shall be sampled using methods approved by the Office of Environmental Protection.

The principal intent of the Tribes in adopting a narrative biological criterion is to provide an assessment method for the identification of impacted waters. Such assessments will be used, for example,

to prioritize abatement projects for activities on the Reservation resulting in nonpoint sources of pollution. The Tribes recognize that a major difference between narrative biological criteria and numeric chemical-specific criteria is the manner in which the two types of criteria can be applied effectively in determining water quality-based effluent limits for point source discharges. Chemical-specific criteria typically are expressed as a concentration of a given parameter, with provisions that describe an averaging period and an allowable frequency of exceedance. Biological criteria describe a desired biological condition and are expressed and interpreted using information about aquatic organisms. Biological criteria, therefore, may not be suited for directly calculating effluent limits for point source discharges. The biological criteria are useful and important because they can indicate biological changes in aquatic ecosystems that may impact a water's health and that are not always indicated through the measurement of numeric chemical-specific criteria. Biological criteria also allow the Tribes to evaluate the adequacy of predictive chemical-specific criteria on a site-specific basis.

Although the Tribes do not envision that it will always be necessary to establish effluent limits for point source discharges based on the biological criterion, the Tribes nevertheless intend to inform appropriate effluent limits for point source discharges as required by Section 301(b)(1)(C) of the Clean Water Act and 40 CFR Section 122.44(d) in determining appropriate effluent limits for point source discharges. For example, where the biological criterion is affected, that information can be used by the permitting authority to reevaluate any NPDES permits for upstream discharges to determine if all appropriate chemical-specific and whole effluent toxicity limits are included in the permits. Permits for any upstream discharges would need to be revised as needed to include appropriate effluent limits on whatever pollutants or pollutant parameters are or may be discharged that cause, have the reasonable potential to cause or contribute to any exceedance of the biological criterion. This may involve examining whether the relevant permits contain limits for all substances present in the discharges.

VII. WATER QUALITY STANDARDS FOR WETLANDS

The Office of Environmental Protection recognizes that the natural water quality of wetlands may differ from that of associated streams. The existing water quality, functions, and values of wetlands will be protected.

- a) Wetlands Not Specifically Listed in Appendix A. Wetlands not specifically listed in Appendix A that are not constructed wetlands are considered "waters of the Tribes" and shall be subject to narrative criteria and applicable antidegradation provisions. Such wetlands are generally assumed to provide habitat capable of supporting aquatic biota (e.g., fish, macroinvertebrates, amphibians, or hydrophytic vegetation) on a regular or periodic basis. It shall be a goal of the Tribes to maintain the water quality of wetlands at naturally occurring levels, within the natural range of variation for the individual wetland. For substances that are not naturally occurring, water quality requirements shall be based on protecting existing uses of the wetland consistent with criteria, criteria assigned to hydrologically connected surface waters, or appropriate criteria guidance issued by the U. S. Environmental Protection Agency. Wetlands shall not be considered as repositories or treatment systems for wastes from human sources.
- b) Wetlands listed in Appendix A. For wetlands specifically listed in Appendix A, the designated uses (e.g., the Wetlands or other designated use) and numeric criteria assigned to such wetlands shall apply. In addition, such wetlands shall be subject to narrative criteria and applicable antidegradation provisions.

VIII. DESIGNATED USES

Section 131.10 of 40 CFR requires that the Tribes consider assigning aquatic life, recreation, and other designated user to all surface waters of the reservation in order to achieve national "fishable and swimmable" goals. Therefore, the Tribes shall use the following designated use classifications for the reservation.

1) Designated Uses

The following designated uses may be applied to reservation surface waters:

- a) Public Water Supply - These surface waters are suitable or intended to become suitable for potable water supplies.
- b) Primary Contact Recreation - These surface waters are suitable or intended to become suitable for recreational activities in or on the water when the ingestion of small quantities of water is likely to occur. Such waters include but are not limited to those used for swimming, cultural uses, and wading.
- c) Secondary Contact Recreation - These surface waters are suitable or intended to become suitable for recreational activities on or about the water which are not included in the primary contact category, including but not limited to fishing and other streamside or lakeside recreation.
- d) Cultural Uses - The ceremonial and religious use of waters include but are not limited to activities such as medicine lodges, sweat lodges, and Sundance ceremonies by members of the Assiniboine-Sioux that requires protection of valuable aquatic and riparian habitat. This use may also cause the human body to come into primary contact (direct) to the point of complete submergence and secondary contact with the water. Direct contact may expose sensitive body organs such as eyes, ears, nose and cause accidental and/or intentional ingestion and inhalation. Secondary contact includes the use of medicinal plants and/or other vegetation associated with the riparian zones and wetland areas along the creeks/streams/and rivers of the Fort Peck Reservation that are used in traditional and spiritual activities.
- e) Class 1 Cool Water Aquatic Life - Provides for the protection and propagation of non-salmonid fishes, marginal growth of salmonid fishes, and growth and propagation of aquatic life normally found in water where the summer temperature does not often exceed 23° Celsius.
- f) Class 2 Cool Water Aquatic Life – These are waters that are not capable of sustaining a wide variety of cool water biota, including sensitive species, due to physical habitat, water flows or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species.
- g) Class 1 Warm Water Aquatic Life – Provides for the protection and propagation of non-salmonid fishes and aquatic life normally found in water where the summer temperature frequently exceeds 23° Celsius.

- h) Class 2 Warm Water Aquatic Life – These are waters that are not capable of sustaining a wide variety of warm water biota, including sensitive species, due to physical habitat, water flows or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species.
- i) Industrial Water Supply. These are waters that are suitable for industrial processes and cooling water.
- j) Agriculture - These surface waters are suitable or intended to become suitable for crops usually grown on the reservation and which are not hazardous as drinking water for livestock.
- k) Navigation - These surface waters are suitable for the commercial shipping of goods.
- l) Wetlands - To maintain and restore natural wetland characteristics and functions, within the natural range of variation of the affected wetland.

2) Qualifiers

The following qualifiers may be appended to a designated use: for example, "Class 1, Warm Water Aquatic Life (Goal)".

- a) Goal - A qualifier that indicates that the waters are presently not fully suitable but are intended to become fully suitable for the designated use.
- b) Intermittent Waterbody - A qualifier that indicates that the water may not be present in the segment due to natural conditions during certain periods of the year. During those periods when water is not present in the stream, the designated use shall continue to be applicable in order to ensure that protective water quality requirements are in place should sources of pollution occur. However, for assessment purposes (e.g., nonpoint source assessment reports pursuant to CWA§319), the absence of flow due to natural conditions shall not be considered as a cause for concluding the designated use is not supported.

3) Segmentation Criteria

- a) For purposes of adopting site-specific designated uses and water quality criteria, the streams and other surface water bodies shall be divided into specific water segments.
- b) Segments may constitute a specific stretch of a river mainstem, a specific tributary or segment thereof, a specific lake or reservoir, or a generally defined grouping of waters within a basin (e.g. a specific mainstem segment and all tributaries flowing into that mainstem segment).
- c) Segments shall generally be delineated according to the points at which the use, physical characteristics, or water quality characteristics of a watercourse are determined to change significantly enough to require a change in use classifications and/or water quality criteria. In many cases, such transition points can be specifically identified from available water quality data. In other cases, however, the delineation of segments shall be based upon best

judgments of where instream changes in uses, physical characteristics, or water quality occur, based upon upstream and downstream data.

4) Process for Assigning Designated Uses

The Tribes are responsible for assigning designated uses to all waters within the reservation boundaries. All reservation surface waters may be assigned one or more of the beneficial use designations listed above in Section VIII.1.

Waters shall be designated for present and future beneficial uses for which the water is suitable. Beneficial uses may also be established as reasonably expected goals.

When assigning designated uses to waters of a given area, the Tribes will consider the goals, objectives, and requirements of the Federal and Tribal statutes and regulations, and the goals and objectives of the local affected community.

- a) Designated uses should be directed towards the realization of the water quality goals as set forth in the Clean Water Act.
- b) Designated uses must be protective of water quality for current and future uses consistent with the Tribes' antidegradation policy.
- c) Upstream designated uses must not jeopardize downstream designated uses or actual uses.
- d) Designated uses should be for the highest water quality attainable. Attainability is to be judged by whether or not the use designation can be attained in twenty years by reasonable control techniques that are determined during public hearings. At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under the Federal Act for point sources and cost-effective and reasonable best management practices for nonpoint source control, in accordance with duly adopted regulations.
- e) Relevant physical, chemical, and biological characteristics are valid water quality concerns that may be taken into account in the use designation process.

5) CHANGING USE DESIGNATIONS

The Office of Environmental Protection may recommend changes in use designations. All such recommendations shall be consistent with federal requirements found at 40 CFR 131.10. Use Attainability Analyses shall be performed considering guidance and methods recommended by the EPA. Where such changes to designated uses are sought by any person, a Use Attainability Analysis may be required to show that current designated uses are not achievable.

6) RESERVATION SURFACE WATER BENEFICIAL USE DESIGNATIONS

Use designations for reservation surface waters are listed in Table A-1 in Appendix A.

IX NUMERICAL CRITERIA

Numeric criteria will include values for physical, chemical, and biological parameters. Chemical water quality criteria are listed in Fort Peck Reservation Water Quality Criteria Table (FPRWQCT), Appendix B. Sources used to compile the FPRWQCT are the EPA Region VIII's Clean Water Action Section 304(a) Criteria Chart dated 07/01/93, and Standards established as drinking water maximum contaminant levels (MCL's). It is anticipated that the FPRWQCT will be added to, modified, and/or updated as additional or new information becomes available. Care should be exercised to ensure that the most recent version (by date) is used as a reference.

Physical and biological criteria are listed in the Physical and Biological Criteria Table for the Fort Peck Indian Reservation, Appendix C. Implementation procedures for numeric translators for the narrative biological criteria for streams are recommended in Section VI.2.

Fort Peck Reservation Water Quality Criteria Table is a complex document. Close attention must be paid to the frequent use of detailed "notes of explanation". They are used in both the table headings and individual line items, many times both. Detailed notes of explanation follow the table portion of Fort Peck Reservation Water Quality Criteria Table and are found in the format of (n) where n is a number.

Fort Peck Reservation Water Quality Criteria Table uses the more restrictive value of either the 304(a) or the drinking water MCL for Human Health Standards, whenever required, in order to fully protect the reservation's waters. For instance, if the human-health Standard for a particular pollutant has been established at 1,200 µg/L (micro-grams per Liter) and the same pollutant has an organoleptic (taste and/or odor) Standard established at 20 µg/L, then Fort Peck Reservation Water Quality Criteria Table would have the Standard set at the more limiting value of 20µg/L. In a similar manner, whenever both Aquatic Life Standards and Human Health Standards exist for the same analyte, the more restrictive of these values will be used as the numeric Surface Water Quality Standard. Human Health Criteria apply to all waters with a public water supply and/or an aquatic life use.

Fort Peck Reservation Water Quality Criteria Table sets Standards for surface waters. In addition, FPRWQCT lists values that will be used in conjunction with the antidegradation implementation procedures being developed in order to determine and evaluate degradation. Standards for 'Harmful' parameters will be used as antidegradation criteria for surface waters. Except where noted, the surface water analysis method is always 'total-recoverable'.

Special attention should be paid to the pollutants/conditions such as ammonia, copper, other metals, hardness, and oxygen as the standards are set over a range of values, or are computed using a complex formula, or depend upon special circumstances.

The Standards for *Escherichia coli*, pH, and temperature are listed in the Physical and Biological Criteria Table C-1 in Appendix C.

X. MIXING ZONE AND DILUTION POLICY

Mixing zones are regions surrounding or downstream of a point source discharge in which the discharge is progressively diluted by the receiving water and numerical water quality criteria may not apply. This policy describes how dilution and mixing of point source discharges within receiving waters will be addressed in developing discharge limitations for point source discharges.

1) Mixing Zones

a) Where justified based on site-specific considerations and where the discharge does not mix at a near-instantaneous and complete rate, mixing zones may be designated. Mixing zones are not authorized for discharges to lakes, reservoirs, and wetlands. Each mixing zone will be developed on a case-by-case basis to protect the most sensitive designated use, consistent with the latest EPA guidance. Individual mixing zones may be limited or denied when the following concerns in the area affected by the discharge have been considered:

- i) bioaccumulation in fish tissues or wildlife;
- ii) biologically important areas such as fish spawning/nursery areas or segments with occurrences of federally listed threatened or endangered species;
- iii) low acute to chronic ratio;
- iv) potential human exposure to pollutants resulting from drinking water or recreational activities;
- v) attraction of aquatic life to effluent plume;
- vi) toxicity/persistence of the substance discharged;
- vii) zone of passage for migrating fish or other species (including access to tributaries), and
- viii) cumulative effects of multiple discharges and mixing zones (e.g., on a watershed scale, mixing zones should not total more than 10% of all river/stream miles).

b) Effluent limits will be assigned consistent with mixing zone size limits determined by field study, an appropriate mixing model, or another defensible method.

c) Chronic mixing zones shall not exceed one-half of the cross-sectional area or a length ten times the stream width at critical low flow, whichever is more limiting. Mixing zones for chemical-specific acute criteria, or zones of initial dilution, may not exceed 10% of the chronic mixing zone volume or flow. Mixing zones for purposes of developing acute whole effluent toxicity effluent limitations are not authorized.

d) Narrative Water Quality Criteria defined in Section V (1) are applicable within mixing zones.

2) Dilution Allowances

a) For discharges to rivers and streams where it is reasonable to conclude that the discharge mixes in a near-instantaneous and complete manner, a dilution allowance equal to or less than the critical low flows identified in Section XI (7) may be provided for purposes of developing acute and chronic chemical-specific and whole effluent toxicity effluent limitations. For minor Publicly Owned Treatment Plants (POTWs) where the discharge does not mix in a near-instantaneous and complete manner, such dilution allowances may also be provided for purposes of developing acute whole effluent toxicity effluent limitations. For intermittent discharges, such as lagoon facilities that discharge during high ambient flow, the stream flow to be used in the mixing zone analysis should be the lowest flow expected to occur during the period of discharge.

b) Near instantaneous and complete mixing may be assumed where the mean daily flow of the discharge exceeds the critical low flow of the receiving water, or where an effluent diffuser has been installed. In all other cases where instantaneous and complete mixing is assumed, a defensible basis will be included in the statement of the basis for the permit. For purposes of field mixing studies, near-instantaneous and complete mixing is defined as no more than 10% difference in bank-to-bank concentrations within a longitudinal distance not greater than 2 stream/river widths.

3) Other Considerations

a) Where dilution flow is not available at critical conditions, the discharge limits will be based on achieving applicable water quality criteria at the end-of-pipe, and neither a mixing zone nor an allowance for dilution will be provided.

b) All mixing zone dilution assumptions are subject to review and revisions as information on the nature and impacts of the discharge becomes available (e.g., chemical or biological monitoring in the mixing zone boundary). Where justified, the discharger may be required to conduct in-stream monitoring to verify that mixing zone restrictions are being achieved. At a minimum, mixing zone and dilution decisions are subject to review and revision along with all other aspects of the discharge permit upon expiration of the permit.

c) For certain pollutants (e.g., ammonia, dissolved oxygen, metals) that may exhibit increased toxicity or other effects on water quality after dilution and complete mixing with receiving waters is achieved, the waste load allocation shall address such toxicity or other effects on water quality as necessary to fully protect beneficial uses (i.e., the point of compliance may be something other than the mixing zone boundary or the point where complete mixing is achieved).

Dilution allowances shall be developed considering guidance issued by EPA, including the *EPA Region VIII Mixing Zone and Dilution Policy*. Critical low flows for use in developing dilution allowances are specified in the Tribes' critical conditions policy.

XI STANDARDS IMPLEMENTATION

1) All discharges from point sources, all instream activities, and all activities that generate nonpoint source pollution are to be conducted so as to achieve these water quality standards. The Tribes' anticipate that both regulatory and voluntary pollution control programs will be needed to address all current and future water quality problems on the Fort Peck Reservation.

2) All federal licenses and permits, such as permits for wastewater discharges issued under the National Pollutant Discharge Elimination System (NPDES), shall be conditioned in such a manner as to authorize only activities that will not cause violations of these water quality standards. For new standards, revised standards that have become more stringent, or new interpretations of existing standards, schedules of compliance may be included in such permits where appropriate Compliance schedules will be developed considering guidance issued by EPA.

The Tribes authorize the use of compliance schedules, on a case-by-case basis, for water quality-based effluent limits in National Pollutant Discharge Elimination System (NPDES) permits, when appropriate, and consistent with 40 CFR 122.47, for new, recommencing, or existing dischargers to require compliance as soon as possible with water quality-based effluent limitations calculated to meet water quality standards. An application for a compliance schedule must be submitted to Fort Peck Tribes OEP.

3) Until such time as the Tribes receive eligibility to implement Section 402 of the Clean Water Act, discharge permits will be issued by the EPA to comply with the Tribes' water quality standards. All discharge permit applications will be reviewed by both the Tribes and the EPA. The Tribes have the authority to deny certification of any discharge into reservation waters as described in paragraph E) of this section if they determine that the proposed discharge would cause violation of the Tribes' water quality standards.

The Tribes will conduct compliance inspections of all permitted facilities on the reservation. Inspection results will be submitted to the EPA for review for compliance. The EPA will also have the responsibility of enforcing NPDES permit violations. However, under the Act, the Tribes may initiate citizen suits pursuant to section 505 against EPA or the permittee to correct permit violations.

4) The Tribes reserve the right to identify, in a water quality certification, specific water quality standards implementation methods to be used in developing water quality-based point and nonpoint source control requirements. All controls shall be developed using technically defensible methods such as those described in EPA guidance documents. These water quality standards will serve as the basis for any § 303(d) total maximum daily loads (TMDLs) developed for tribal waters.

5) All activities which require a federal license or permit on the reservation are subject to certification by the Fort Peck Tribes consistent with § 401 of the Clean Water Act. In implementing this authority, and depending upon specific facts, the Tribes may decide to certify unconditionally, deny certification, or certify with conditions. Conditional certifications shall specify water quality protective conditions, best management practices, or monitoring requirements that must be implemented by the applicant. Where the Tribes determine that the conditions specified in a certification are not being implemented, or that an activity for which a certification was previously issued is causing a violation or contributing to a violation of the tribal water quality standards, the Tribes may suspend or revoke a certification pending corrective actions by the applicant, deny certification upon expiration and reissuance of the permit, or initiate a citizen suit consistent with CWA § 505.

6) These water quality standards apply to all waters affected by nonpoint sources of pollution. At this time, the Tribes intend to rely on voluntary compliance for activities that result in nonpoint sources of pollution but do not require a federal license or permit. All appropriate combinations of individual best management practices should be applied to avoid violation of water quality standards.

7) Critical Conditions Policy

a) For purposes of determining water quality based control requirements for point source discharges, critical conditions shall be determined consistent with the policy and procedure described below, where a steady-state modeling approach is used. Where seasonal controls are appropriate, critical conditions shall be determined based on seasonal characteristics of the receiving water and pollution source. Other exceptions may be granted where a technically sound reason to use an alternative method is developed and approved by the Office of Environmental Protection (e.g. where a dynamic or continuous simulation modeling method is used). Critical conditions shall be representative of conditions upstream from the point where the discharge exists.

- i. Stream Flow¹
 - Aquatic life, chronic 4-day, 3-year flow (biologically based)
 - Aquatic life, acute 1-day, 3-year flow (biologically based)
 - Human health (carcinogens) harmonic mean flow
 - Human health (non-carcinogens)² 4-day, 3-year flow (biologically based) or
 - Human health (non-carcinogens) 1-day, 3-year flow (biologically based)
- ii) Effluent Flows
 - Aquatic life, chronic Mean daily flow
 - Aquatic life, acute Maximum daily flow
 - Human Health (all) Mean daily flow
- iii) Temperatures and pH (for effluent and receiving waters)
 - 80th percentile of all samples that are representative of the site
- iv) Hardness (for effluents and receiving waters).
 - 20th percentile of all samples that are representative of the site.
- v) Ambient Quality.
 - Dissolved Oxygen - the 20th percentile of all samples that are representative of the site *E. coli* - the geometric mean of available data.
 - Others - the 80th percentile of all samples that are representative of the site.

XII ANALYTICAL METHODS

All methods of analysis used in measuring the chemical water quality of surface waters for purposes of determining compliance with these standards shall be in accordance with procedures prescribed in the current Code of Federal Regulations, Title 40, part 136.

Biological samples used to evaluate whether the narrative criteria in Section VI are supported shall be collected in accordance with Standard Operating Procedures and Quality Assurance Project Plans documented by the Office of Environmental Protection (see OEP: Determination of Biological Conditions for Rivers and Streams).

¹ Application of these low flows in determining dilution assumptions is subject to application of the Tribe's mixing zone and dilution policy.

² For human health non-carcinogens, a distinction is made between parameters that typically have an effect after prolonged exposures (e.g. copper) and those that have more of an immediate effect (e.g. nitrate). The chronic aquatic life flow shall be used for the longer-lasting parameters and the acute aquatic life flow for the shorter-acting parameters.

Appendix A

STREAM BENEFICIAL USE FOR THE FORT PECK INDIAN RESERVATION

Table A-1
FORT PECK ASSINIBOINE & SIOUX INDIAN RESERVATION, MONTANA
STREAM BENEFICIAL USE DESIGNATION

STREAM SEGMENT DESCRIPTION	BENEFICIAL USE DESIGNATION	MODIFICATIONS AND QUALIFIERS
Big Porcupine Creek		
1. North Border of Reservation to Middle Fork	Primary Contact Recreation	Intermittent waterbody
	Class 1 Warm Water Aquatic Life	Intermittent waterbody
	Agricultural	
	Cultural	
2. Middle Fork to East Fork	Primary Contact Recreation	Intermittent Waterbody
	Class 1 Warm Water Aquatic Life	Intermittent Waterbody
	Agriculture	
	Cultural	
3. East Fork to Missouri	Primary Contact Recreation	Intermittent Waterbody
	Class 1 Warm Water Aquatic Life	Intermittent Waterbody
	Agriculture	
	Cultural	
Little Porcupine Creek		
1. North Border of Reservation to Tomato Can Creek	Secondary Contact Recreation	Intermittent Waterbody
	Class 1 Warm Water Aquatic Life	Goal
	Agriculture	
	Cultural	

Table A-1 (continued)
FORT PECK ASSINIBOINE & SIOUX INDIAN RESERVATION, MONTANA
STREAM BENEFICIAL USE DESIGNATION

STREAM SEGMENT DESCRIPTION	BENEFICIAL USE DESIGNATION	MODIFICATIONS AND QUALIFIERS
2. Tomato Can Creek to Missouri River	Secondary Contact Recreation	Intermittent Waterbody
	Class 1 Warm Water Aquatic Life	Intermittent Waterbody
	Agriculture	
	Cultural	
Wolf Creek		
1. Headwaters downstream to Boundary of Section 29 & 31, T29N, R46E	Primary Contact Recreation	
	Class 1 Cool Water Aquatic Life	Goal
	Agriculture	
	Cultural	
2. Top of Section 32, T29N, R46E to Missouri River	Primary Contact Recreation	
	Class 1 Cool Water Aquatic Life	Goal/Intermittent Waterbody
	Agriculture	
	Cultural	
Missouri River		
1. Southern border of Reservation to center of River	Public Water Supply	Goal
	Class 1 Cool Water Aquatic Life	
	Primary Contact Recreation	

Table A-1 (continued)
FORT PECK ASSINIBOINE & SIOUX INDIAN RESERVATION, MONTANA
STREAM BENEFICIAL USE DESIGNATION

STREAM SEGMENT DESCRIPTION	BENEFICIAL USE DESIGNATION	MODIFICATIONS AND QUALIFIERS
	Industrial	
	Navigation	
	Agriculture	
	Cultural	
Tule Creek		
1.Headwaters downstream to Missouri River	Secondary Contact Recreation	Intermittent Waterbody
	Class 2 Cool Water Aquatic Life	Intermittent Waterbody
	Agriculture	Intermittent Waterbody
	Cultural	
Poplar River		
1. North Border of Reservation to Highway 13 Crossing	Primary Contact Recreation	
	Class 1 Cool Water Aquatic Life	
	Agriculture	
	Cultural	
2. Highway 13 to Long Creek	Primary Contact Recreation	
	Class 1 Cool Water Aquatic Life	
	Agriculture	
	Cultural	

Table A-1 (continued)
FORT PECK ASSINIBOINE & SIOUX INDIAN RESERVATION, MONTANA
STREAM BENEFICIAL USE DESIGNATION

STREAM SEGMENT DESCRIPTION	BENEFICIAL USE DESIGNATION	MODIFICATIONS AND QUALIFIERS
3. Long Creek to O'Connor Crossing	Primary Contact Recreation	
	Class 1 Cool Water Aquatic Life	
	Agriculture	
	Cultural	
4. O'Connor Crossing to Missouri River	Primary Contact Recreation	
	Class 1 Warm Water Aquatic Life	Class 1 Cool Water Aquatic Life Goal
	Agriculture	
	Cultural	
Smoke Creek		
1. Headwaters downstream to Big Muddy Creek	Primary Contact Recreation	
	Class 1 Warm Water Aquatic Life	
	Agriculture	
	Cultural	
Big Muddy Creek		
1. Reservation border to Wolf Creek	Primary Contact Recreation	
	Class 2 Warm Water Aquatic Life	Goal
	Agriculture	
	Cultural	

Table A-1
FORT PECK ASSINIBOINE & SIOUX INDIAN RESERVATION, MONTANA
STREAM BENEFICIAL USE DESIGNATION

STREAM SEGMENT DESCRIPTION	BENEFICIAL USE DESIGNATION	MODIFICATIONS AND QUALIFIERS
2. Wolf Creek to Smoke Creek Confluence	Primary Contact Recreation	
	Class 2 Warm Water Aquatic Life	Goal
	Agriculture	
	Cultural	
3. Smoke Creek to Missouri River	Primary Contact Recreation	
	Class 2 Warm Water Aquatic Life	Goal
	Agriculture	
	Cultural	

Appendix B

FORT PECK RESERVATION WATER QUALITY CRITERIA TABLE

FORT PECK TRIBES NUMERIC WATER QUALITY STANDARDS



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FPWQCT, FORT PECK WATER QUALITY CRITERIA TABLE, is a compilation of the most recent numeric and narrative water quality criteria available for the protection of Surface Waters. Reference sources used to compile FPWQCT include the Environmental Protection Agency (EPA) websites providing Clean Water Act Section 304(a) Criteria Chart, criteria established as drinking water maximum contaminant levels (MCL's), and current Montana Water Quality criteria. It is anticipated that FPWQCT will be added to, modified, and/or updated as additional or new information becomes available. Care should be exercised to ensure that the most recent version (by date) is used as a reference.

FPWQCT is a complex document. Close attention must be paid to the frequent use of 'detailed notes of explanation'. They are used in the table headings and individual line items, many times, both. A detailed set of notes of explanation follow the table portion of FPWQCT and are found in the format of (n) where n is a number.

FPWQCT uses the more restrictive value of either the 304(a) criteria or the drinking water MCL for Human Health protection, whenever required, in order to be able to fully protect the concept of 'multi-use' of the Tribes' waters. For instance, if the Human-Health criterion for a particular pollutant has been established at 1,200 µg/L (micro-grams per Liter) and the same pollutant has an organoleptic (taste and/or odor) criterion established at 20 µg/L, then FPWQCT would have the criterion set at the more limiting value of 20 µg/L. In a similar manner, whenever both Aquatic Life criteria and Human Health criteria exist for the same analyte, the more restrictive of these values will be used as the numeric Surface Water Quality criterion.

FPWQCT sets numeric criteria for surface waters within the exterior boundaries of the Reservation. In addition, FPWQCT lists values that are to be used in conjunction with the Fort Peck Water Quality Standards *et seq* to determine and evaluate degradation. Standards for 'Harmful' parameters will be used as non-degradation criteria for both surface waters and ground waters. Except where noted (as for aluminum), the surface water criteria for metals refer to dissolved fractions.

Special attention should be paid to the pollutants/conditions such as ammonia, oxygen, copper, and other heavy metals because the criteria are set over a range of values, or are computed using a complex formula, or depend upon special circumstances.

Alkalinity, chloride, hardness, sediment, sulfate, and total dissolved solids have 'Narrative Criteria' and are referenced back to the Fort Peck Water Quality Standards *et seq* for further details and explanation.

The criteria for *E.coli*, color, dissolved gases, odor, pH, and temperature are dependent upon the water-use classifications as specified in Fort Peck Water Quality Standards Section 5.

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Acenaphthene ' ' --- ' Acenaphthalene ' Naphthyleneethylene ' 1,8-Ethylenenaphthalene ' 1,8-Ethylene Naphthalene ' 1,2-Dihydroacenphthylene ' Acenphthylene, 1,2-Dihydro-	83329 or 83-32-9 NIOSH: AB 1255500 SAX: AAE750	Toxic Organoleptic	---	---	242	70 (2) (31)	90 (2) (31)
Acenaphthylene (PAH) (32) ' ' --- ' Cyclopenta(De)Naphthalene	208968 or 208-96-8 NIOSH: AB 1254000 SAX: AAF500	Toxic	---	---	30 Benzo (a) Pyrene (BaP) BCF 1980 awqc EPA/5-80-069	---	---
Acifluorfen ' ' Blazer ' Tackle ' Scepter ' as sodium	62476599 or 62476-59-9	Carcinogen	---	---	---	9.4 HA	10
Acrolein ' ' --- ' Biocide ' Crolean ' Aqualin ' Aqualine ' Propenal ' SHA 00701 ' 2-propenal ' Acraldehyde ' Acrylaldehyde ' Acrylic Aldehyde ' Ethylene Aldehyde	107028 or 107-02-8 NIOSH: AS 1050000 SAX: ADR000	Toxic	3 PP	3 PP	215	3 (38) PP	400 (38) PP
Acrylamide ' ' 2-Propenamide ' Propenamide ' Acrylic Amide ' Ethylenecarboxamide ' RCRA Waste Number U007	79061 or 79-06-1 NIOSH: AS 3325000 SAX: ADS250	Carcinogen	---	---	---	0.7 HA	0.08
Aldicarb ' ' Temik ' Temic ' Ambush ' OMS 771 ' Temik G 10 ' Aldecarb ' Carbamyl ' SHA 098301 ' Carbanolate ' Sulfone Aldoxycarb ' Union Carbide 21149 ' RCRA Waste Number P070 ' Propanal, 2-Methyl-2-(Methylthio)-, O-[(Methylamino)Carbonyl]Oxime	116063 or 116-06-3 NIOSH: UE 2275000 SAX: CBM500	Toxic	---	---	---	3 MCL	1
Aldicarb Sulfone ' ' Aldoxycarb ' Standak ' UC 21865 ' Sulfocarb ' SHA 110801 ' Propionaldehyde, 2-Methyl-2-(Methylsulfonyl)-, O-(Methylcarbomoyl)Oxime ' 2-Methyl-2-(Methylsulfonyl)Propanal O-[(Methylamino)Carbonyl]Oxime	1646884 or 1646-88-4 NIOSH: UE 2080000 SAX: AFK000	Toxic	---	---	---	2 MCL	1

EPA took no action on the unintentional 2017 revision of aldicarb and aldicarb sulfone water+organism human health criteria from the MCLGs to MCLs (3 µg/L and 2 µg/L, respectively). The MCLGs (1 µg/L for each) remain in effect for CWA purposes.

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Aldicarb Sulfoxide ' ' ---	1646873 or 1646-87-3 NIOSH: --- SAX: ---	Toxic	---	---	---	4 MCL	4
Aldrin ' ' --- ' HHDN ' Altox ' Drinox ' Aldrex ' Aldrite ' Seedrin ' Octalene ' SHA 045101 ' RCRA Waste Number P004 ' Hexachlorohexahydro-endo-exo-Dimethanonaphthalene ' 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-Hexahydro-1,4,5,8- Dimethanonaphthalene ' 1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-Hexahydro-endo,exo- ' 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-Hexa-Hydro- 1,4:5,8-Endo,Exo-Dimethanonaphthalene ' 1,2,3,4,10,10- Hexachloro-1,4,4a,5,8,8a-Hexahydro-1,4-endo-exo-5,8- Dimethanonaphthalene	309002 or 309-00-2 NIOSH: IO 2100000 SAX: AFK250	Carcinogen	1.5 (44) PP	---	4,670	7.7x10 ⁻⁷ (2) (29)	7.7x10 ⁻⁷ (2) (29)
Alkalinity, total, as CaCO₃ ' ' ---	471341 or 471-34-1 NIOSH: --- SAX: ---	Narrative (18)	---	20,000	---	---	---
Alpha Emitters ' ' --- ' Gross Alpha ' Adjusted Gross Alpha	Multiple	Carcinogen / Radioactive	---	---	---	15 picoC/liter MCL	15 picoC/liter MCL
Aluminum, pH 6.5 to 9.0 only (9) (6) ' ' Al	7429905 or 7429-90-5 NIOSH: BD 0330000 SAX: AGX000	Toxic	750 (6) NPP	87 (6) NPP	---	---	---
Ammonia plus un-ionized ammonia as N ' ' --- ' Ammonia Anhydrous ' Anhydrous Ammonia ' Spirit of Hartshorn	7664417 or 7664-41-7 NIOSH: BO 0875000 SAX: AMY500	Toxic	(7) (8) NPP	(7) (8) NPP	---	---	---
Anthracene (PAH) ' ' Paranaphthalene ' Green Oil ' Anthracin ' Tetra Olive N2G	120127 or 120-12-7 NIOSH: CA 9350000 SAX: APG500	Toxic	---	---	30	300 (2) PP	400 (17) PP
Antimony (9) ' ' Sb ' Antimony Black ' Antimony Regulus ' C.I. 77050 ' Stibium	7440360 or 7440-36-0 NIOSH: CC 4025000 SAX: AQB750	Toxic	---	---	1	5.6 (29) PP	640 (29) PP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Aroclor 1016 ' ' PCB 1016 ' PCB-1016 ' Arochlor 1016 ' Chlorodiphenyl (16% Cl) ' Polychlorinated Biphenyl (Aroclor 1016)	12674112 or 12674-11-2 NIOSH: --- SAX: ---	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29) (37) PP
Aroclor 1221 ' ' PCB 1221 ' PCB-1221 ' Arochlor 1221 ' Chlorodiphenyl (21% Cl) ' Polychlorinated Biphenyl (Aroclor 1221)	11104282 or 11104-28-2 NIOSH: TQ 1352000 SAX: PJM000	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29) (37) PP
Aroclor 1232 ' ' PCB 1232 ' PCB-1232 ' Arochlor 1232 ' Chlorodiphenyl (32% Cl) ' Polychlorinated Biphenyl (Aroclor 1232)	11141165 or 11141-16-5 NIOSH: TQ 1354000 SAX: PJM250	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29)(37) PP
Aroclor 1242 ' ' PCB 1242 ' PCB-1242 ' Arochlor 1242 ' Chlorodiphenyl (42% Cl) ' Polychlorinated Biphenyl (Aroclor 1242)	53469219 or 53469-21-9 NIOSH: 1356000 SAX: PJM500	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29) (37) PP
Aroclor 1248 ' ' PCB 1248 ' PCB-1248 ' Arochlor 1248 ' Chlorodiphenyl (48% Cl) ' Polychlorinated Biphenyl (Aroclor 1248)	12672296 or 12672-29-6 NIOSH: TQ 1358000 SAX: PJM750	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29) (37) PP
Aroclor 1254 ' ' PCB 1254 ' PCB-1254 ' Arochlor 1254 ' Chlorodiphenyl (54% Cl) ' Polychlorinated Biphenyl (Aroclor 1254) ' NCI C02664	11097691 or 11097-69-1 NIOSH: TQ 1360000 SAX: PJN000	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29) (37) PP
Aroclor 1260 ' ' PCB 1260 ' PCB-1260 ' Clophen A60 ' Arochlor 1260 ' Phenoclor DP6 ' Chlorodiphenyl (60% Cl) ' Polychlorinated Biphenyl (Aroclor 1260)	11096825 or 11096-82-5 NIOSH: TQ 1362000 SAX: PJN250	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29) (37) PP
Aroclor 1262 ' ' PCB 1262 ' PCB-1262 ' Arochlor 1262 ' Chlorodiphenyl (62% Cl) ' Polychlorinated Biphenyl (Aroclor 1262)	37324235 or 37324-23-5 NIOSH: TQ 1364000 SAX: PJN500	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29) (37) PP
Aroclor 1268 ' ' PCB 1268 ' PCB-1268 ' Arochlor 1268 ' Chlorodiphenyl (68% Cl) ' Polychlorinated Biphenyl (Aroclor 1268)	11100144 or 11100-14-4 NIOSH: TQ 1366000 SAX: PJN750	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29) (37) PP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Aroclor 2565 ' ' PCB 2565 ' PCB-2565 ' Aroclor 2565 ' Polychlorinated Biphenyl (Aroclor 2565)	37324246 or 37324-24-6 NIOSH: TQ 1368000 SAX: PJO000	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29) (37) PP
Aroclor 4465 ' ' PCB 4465 ' PCB-4465 ' Aroclor 4465 ' Polychlorinated Biphenyl (Aroclor 4465)	11120299 or 11120-29-9 NIOSH: TQ 1370000 SAX: PJO250	Carcinogen	---	0.014 (37)	31,200	(2) (29) (37) PP	(2) (29) (37) PP
Polychlorinated Biphenyl (Kanechlor 300) ' ' --- ' Kanechlor 300	37353632 or 37353-63-2 NIOSH: TQ 1372000 SAX: PJO500	Carcinogen	---	0.014 (37)	31,200	0.000064 (2) (29) (37) PP	0.000064 (2) (29) (37) PP
Polychlorinated Biphenyl (Kanechlor 400) ' ' --- ' Kanechlor 400 ' KC-400	12737870 or 12737-87-0 NIOSH: TQ 1374000 SAX: PJO750	Carcinogen	---	0.014 (37)	31,200	0.000064 (2) (29) (37) PP	0.000064 (2) (29) (37) PP
Polychlorinated Biphenyl (Kanechlor 500) ' ' --- ' Kanechlor 500 ' KC-500	37317412 or 37317-41-2 NIOSH: TQ 1376000 SAX: PJP000	Carcinogen	---	0.014 (37)	31,200	0.000064 (2) (29) (37) PP	0.000064 (2) (29) (37) PP
Polychlorinated Biphenyls, mixed ' ' PCB's ' Aroclor ' Chlophen ' Chlorextol ' Chlorinated Biphenyl ' Chlorinated Diphenyl ' Chlorinated Diphenylene ' Chloro Biphenyl ' Chloro-1,1-Biphenyl ' Clophen ' Dykanol ' Fenclor ' Inerteen ' Kanechlor ' Montar ' Noflamol ' PCB (DOT) ' Phenochlor ' Polychlorobiphenyl ' Pyralene ' Pyranol ' Santotherm ' Sovol ' Therminol FR-1	1336363 or 1336-36-3 NIOSH: TQ 1350000 SAX: PJJ750	Carcinogen	---	0.014 (37)	31,200	0.000064 (2) (29) (37) PP	0.000064 (2) (29) PP
Arsenic, inorganic (9) ' ' As ' Arsenicals ' Arsenic-75 ' Arsenic Black ' Colloidal Arsenic ' Grey Arsenic ' Metallic Arsenic	7440382 or 7440-38-2 NIOSH: CG 0525000 SAX: ARA750	Carcinogen	340 (11) (42) PP	150 (11) (42) PP	44	0.018 (2) MCL	0.14

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Asbestos, Chrysotile ' ' --- ' 7-45 Asbestos ' Asbestos (ACGIH) ' Asbestos, White Dot ' Avibest C ' Calidria RG 100 ' Calidria RG 144 ' Calidria RG 600 ' Cassir AK ' Chrysotile Asbestos ' Chrysotile (DOT) ' Hooker Number 1 Chrysotile Asbestos ' Metaxite ' NCI C61223A ' Plastibest 20 ' Serpentine ' Serpentine Chrysotile ' Sylodex ' White Asbestos	12001295 or 12001-29-5 NIOSH: CI 6478500 SAX: ARM268	Carcinogen	---	---	---	7,000,000 fibers/liter	---
Asbestos, Actinolite ' ' --- ' Asbestos (ACGIH) ' Actinolite Asbestos	77536664 or 77536-66-4 NIOSH: CI 6476000 SAX: ARM260	Carcinogen	---	---	---	7,000,000 fibers/liter	---
Asbestos, Amosite ' ' --- ' Amosite Asbestos ' Asbestos (ACGIH) ' Mysorite ' NCI C60253A	12172735 or 12172-73-5 NIOSH: CI 6477000 SAX: ARM262	Carcinogen	---	---	---	7,000,000 fibers/liter	---
Asbestos, Anthophyllite ' ' --- ' Anthophyllite ' Asbestos (ACGIH) ' Azbolen Asbestos ' Ferroanthophyllite	77536675 or 77536-67-5 NIOSH: CI 6478000 SAX: ARM264	Carcinogen	---	---	---	7,000,000 fibers/liter	---
Asbestos, Crocidolite ' ' --- ' Amorphous Crocidolite Asbestos ' Asbestos (ACGIH) ' Blue Asbestos (DOT) ' Crocidolite Asbestos ' NCI C09007 ' Crocidolite (DOT) ' Fibrous Crocidolite Asbestos	12001284 or 12001-28-4 NIOSH: CI 6479000 SAX: ARM275	Carcinogen	---	---	---	7,000,000 fibers/liter	---
Asbestos, Tremolite ' ' --- ' Asbestos (ACGIH) ' Fibrous Tremolite ' NCI C08991 ' Tremolite Asbestos	77536686 or 77536-68-6 NIOSH: 6560000 SAX: ARM280	Carcinogen	---	---	---	7,000,000 fibers/liter	---

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Atrazine ' ' --- ' Aatrex ' Aktikon ' Atrazine ' Atred ' Candex ' Crisatrina ' Crisazine ' Cyazin ' Fenamin ' Fenamine ' Zeaphos ' Fenatrol ' Gesaprim ' Hungazin ' Inakor ' Primatol ' Malermais ' Radazin ' Radizine ' Shell Atrazine herbicide ' Strazine ' Triazine A 1294 ' Vectal ' Weedex A ' Wonuk ' Zeazin ' Zeazine ' SHA 080803 ' 1-Chloro-3-Ethylamino-5-Isopropylamino-2,4,6-Triazine ' s-Triazine, 2-Chloro-4-Ethylamino-6-Isopropylamino- ' 2-Chloro-4-Ethylamino-6-Isopropylamino-s-Triazine ' 6-Chloro-N-Ethyl-N'-(1-Methylethyl)-1,3,5-Triazine-2,4-Diamine	1912249 or 1912-24-9 NIOSH: XY 560000 SAX: PMC325	Toxic	---	---	---	3	3
Barium (9) ' ' Ba	7440393 or 7440-39-3 NIOSH: CA 8370000 SAX: BAH250	Toxic	---	---	---	1,000 (43) NPP	---
Bentazon Methyl ' ' --- ' Basagran	50723803 or 50723-80-3 25057890 or 25057-89-0	Toxic	---	---	---	200 HA	200 HA
Benzene ' ' --- ' Phene ' Benzol ' Benzolene ' Pyrobenzol ' Carbon Oil ' SHA 109301 ' Coal Naphtha ' Motor Benzol ' Phenyl hydride ' Cyclohexatriene ' Caswell Number 077 ' RCRA Waste Number U019 ' EPA Pesticide Chemical Code 008801 ' NCI C53276	71432 or 71-43-2 NIOSH: CY 1400000 SAX: BBL250	Carcinogen	---	---	5.2	0.58-2.1 (29)	16-58 (29)
Benzidine ' ' --- ' p,p'-Bianiline ' 4,4'-Bianiline ' 4,4'-Biphenyldiamine ' p,p'-Diaminobiphenyl ' 4,4'-Diaminodiphenyl ' RCRA Waste Number U021 ' 4,4'-Biphenylenediamine ' 4,4'-Diphenylenediamine ' Biphenyl, 4,4'-Diamino- ' 4,4'-Diamino-1,1'-Biphenyl ' (1,1'-Biphenyl)-4,4'-Diamine ' NCI C03361	92875 or 92-87-5 NIOSH: DC 9625000 SAX: BBX000	Carcinogen	---	---	87.5	0.00014 (2) (29)	0.011 (2) (29)
						PP	PP
						PP	PP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Benzo[a]anthracene (PAH) ' ' --- ' Tetraphene ' Benzanthracene ' Benzoanthracene ' Naphthanthracene ' 1,2-Benzanthrene ' Benz(a)Anthracene ' Benzo[a]Anthracene ' Benzo(a)Anthracene ' 1,2-Benzanthracene ' Benzo(b)Phenanthrene ' 1,2- Benzoanthracene ' Benzanthracene, 1,2- ' 1,2-Benz(a)Anthracene ' 2,3- Benzophenanthrene ' RCRA Waste Number U018	56553 or 56-55-3 NIOSH: CV 9275000 SAX: BBC250	Carcinogen	---	---	30	0.0012 (2) (29)	0.0013 (2) (29)
Benzo[b]Fluoranthene (PAH) ' ' --- ' B(b)F ' Benzo(b)Fluoranthene ' Benzo(e)Fluoranthene ' Benzo[e]Fluoranthene ' 2,3-Benzfluoranthene ' 3,4-Benzfluoranthene ' 3,4-Benzofluoranthene ' 2,3-Benzofluoranthene ' 2,3-Benzofluoranthrene ' Benz(e)Acephenanthrylene ' Benz[e]Acephenanthrylene ' 3,4- Benz(e)Acephenanthrylene	205992 or 205-99-2 NIOSH: CU 1400000 SAX: BAW250	Carcinogen	---	---	30	0.0012 (2) (29)	0.0013 (2) (29)
Benzo[k]Fluoranthene (PAH) ' ' --- ' Benzo(k)Fluoranthene ' 8,9-Benzofluoranthene ' Dibenzo(b,jk)Fluorene ' 2,3,1'8'-Binaphthylene ' 11,12-Benzofluoranthene ' 11,12-Benzo(k)Fluoranthene	207089 or 207-08-9 NIOSH: DF 6350000 SAX: BCJ750	Carcinogen	---	---	30	0.012 (2) (29)	0.013 (2) (29)
Benzo(g,h,i)perylene (PAH) ' ' 1,12-Benzoperylene ' 1,12-Benzperylene ' Benzo(ghi)Perylene	191242 or 191-24-2 NIOSH: DI 6200500 SAX: BCR000	Toxic	---	---	30	---	---
Benzo[a]Pyrene (PAH) ' ' --- ' BaP ' 3,4-BP ' Benz(a)Pyrene ' Benzo-a-Pyrene ' 3,4-Benzpyrene ' 6,7-Benzopyrene ' 3,4-Benzopyrene ' 3,4- Benz(a)Pyrene ' Benzo(d,e,f)Chrysene ' Benzo(def)Chrysene	50328 or 50-32-8 NIOSH: DJ 3675000 SAX: BCS750	Carcinogen	---	---	30	0.00012 (2) (29)	0.00013 (2) (29)

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Beryllium (9) ' ' Be ' Beryllium-9 ' Glucinum ' RCRA Waste Number P015	7440417 or 7440-41-7 NIOSH: DS 1750000 SAX: BFO750	Carcinogen	---	---	19	4 MCL	---
Beta-Chloronaphthalene ' ' 2-Chloronaphthalene ' β-Chloronaphthalene ' Naphthalene, 2-Chloro- ' RCRA Waste Number U047	91587 or 91-58-7 NIOSH: QJ 2275000 SAX: CJA000	Toxic	---	---	202	800 (2) PP	1,000 (2) PP
Beta Emitters (10) ' ' --- ' Gross Beta	12587472 or 12587-47-2 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	0.4 mrem/yr MCL	mrem/yr MCL
Bis(2-Chloroethoxy)Methane ' ' --- ' Bis(β-Chloroethyl)Formal	111911 or 111-91-1 NIOSH: PA 3675000 SAX: BID750	Toxic	---	---	0.64	---	---
Bis(2-Chloroisopropyl) Ether ' ' --- ' DCIP ' NCI C50044 ' RCRA Waste Number U027 ' Dichlorodiisopropyl Ether ' 2,2'-Oxybis(1-Chloropropane) ' Bis (2-Chloroisopropyl) ether ' Propane, 2,2'-Oxybis(2-Chloro- ' Propane, 2,2'- Oxybis[1-Chloro- ' 2',2'-Dichlorodiisopropyl Ether ' Dichlorodiisopropyl Ether (DOT) ' Bis(2-Chloro-1- Methylethyl) Ether	108601 or 108-60-1 (changed from 3963829) NIOSH: KN 1750000 SAX: BII250	Toxic	---	---	2.47	200 (2) PP	4,000 (2) PP
Bis(Chloroethyl)Ether ' ' --- ' BCEE ' DCEE ' Clorex ' Chlorex ' Chloroethyl Ether ' Dichloroethyl Ether ' Dichloroethyl Oxide ' RCRA Waste Number U025 ' Bis(Chloroethyl) Ether ' Di(2-Chloroethyl) Ether ' Bis (Chloroethyl) Ether ' Bis(2-Chloroethyl) Ether ' Bis(β-Chloroethyl) Ether ' β,β'-Dichloroethyl Ether ' 2,2'-Dichloroethyl Ether ' Bis (2-Chloroethyl) Ether ' 1,1'-Oxybis(2-Chloro)Ethane ' Ethane, 1,1'-Oxybis[2-Chloro- ' beta,beta'-Dichloroethyl Ether ' 1-Chloro-2-(beta-Chloroethoxy)Ethane	111444 or 111-44-4 NIOSH: KN 0875000 SAX: BIC750	Carcinogen	---	---	6.9	0.030 (2) (29) PP	2.2 (2) (29) PP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Bis(Chloromethyl)Ether ' ' --- ' BCME ' bis-CME ' Chloromethyl Ether ' Oxybis(Chloromethane) ' RCRA Waste Number P016 ' Bis (Chloromethyl) Ether ' sym-Dichlorodimethyl Ether ' 1,1'-Dichlorodimethyl Ether ' ' Dimethyl-1,1'-Dichloroether ' Chloro(Chloromethoxy)Methane	542881 or 542-88-1 NIOSH: 1575000 SAX: BIK000	Carcinogen	---	---	63	0.00015 (2)	0.017 (2)
Bromodichloromethane (HM) ' ' --- ' BDCM ' NCI C55243 ' Dichlorobromomethane ' Methane, bromodichloro- ' Dichloromonobromomethane ' Monobromodichloromethane	75274 or 75-27-4 NIOSH: PA 5310000 SAX: BND500	Carcinogen	---	---	3.75	0.95 (29)	27 (29)
p-Bromodiphenyl Ether ' ' --- ' p-Bromodiphenyl Ether ' 4-Bromophenoxybenzene ' 4- Bromodiphenyl Ether ' 1-Bromo-4-Phenoxybenzene ' p-Bromophenylphenyl Ether ' 4-Bromophenyl Phenyl Ether ' Benzene, 1-Bromo- 4-Phenoxy-	101553 or 101-55-3 NIOSH: --- SAX: ---	Toxic with BCF >300	---	---	1,640	---	---
Bromoform (HM) ' ' Tribromomethane ' NCI C55130 ' Methane, Tribromo- ' Methenyl Tribromide ' RCRA Waste Number U225	75252 or 75-25-2 NIOSH: PB 5600000 SAX: BNL000	Carcinogen	---	---	3.75	7.0 (29)	120 (29)
Bromomethane (HM) ' ' Methyl Bromide ' EDCO ' Celfume ' Dowfume ' Methogas ' SHA 053201 ' Brom-O-Sol ' Brom-O-Gas ' Terr-O-Gas ' Halon 1001 ' Terr-O- Cide ' Bromo-O-Gas ' Bromo Methane ' Methylbromide ' Methyl Bromide ' Methane, Bromo- ' Monobromomethane ' RCRA Waste Number U029	74839 or 74-83-9 NIOSH: PA 4900000 SAX: BNM500	Toxic	---	---	3.75	100 (29)	10,000 (29)

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Butyl Benzyl Phthalate W ' ' --- ' BBP ' Sicol 160 ' Unimoll BB ' Palatinol BB ' Santicizer 160 ' Butylbenzylphthalate ' Butylbenzyl Phthalate ' Benzyl Butyl Phthalate ' n-Benzyl Butyl Phthalate ' Benzyl n-Butyl Phthalate ' Phthalic Acid, Benzyl Butyl Ester ' Butyl Phenylmethyl 1,2-Benzenedicarboxylate ' 1,2-Benzenedicarboxylic Acid, Butyl Phenylmethyl Ester ' NCI C54375	85687 or 85-68-7 NIOSH: TH 9990000 SAX: BEC500	Carcinogen	---	---	414	0.10 (2)	0.10 (2)
Cadmium (9) ' ' Cd ' C.I. 77180 ' Colloidal Cadmium	7440439 or 7440-43-9 NIOSH: EU 9800000 SAX: CAD000	Toxic	0.49 @ 25 mg/L hardness (11) (12) PP	0.25 @ 25 mg/L hardness (11) (12) PP	64	5 (41)	---
Carbofuran ' ' --- ' Yaltox ' Euradan ' Furadan ' Curaterr ' Furacarb ' SHA 090601 ' Niagra 10242 ' 2,2-Dimethyl-7-Coumaranyl N-Methylcarbamate ' 2,2-Dimethyl-2,3-Dihydro-7-Benzofuranyl N-Methylcarbamate ' Carbamic Acid, Methyl-, 2,3-Dihydro-2,2-Dimethyl-7-Benzofuranyl Ester	1563662 or 1563-66-2 NIOSH: FB 9450000 SAX: FPE000	Toxic	---	---	---	40	40
Carbon Tetrachloride ' ' --- ' R 10 ' Univerm ' Freon 10 ' Tetrasol ' Fasciolin ' Flukoids ' Necatorina ' Necatorine ' Halon 104 ' Tetraform ' Carbon Tet ' Benzinoform ' Carbon Chloride ' Perchloromethane ' Tetrachloromethane ' Methane Tetrachloroide ' RCRA Waste Number U211	56235 or 56-23-5 NIOSH: FG 4900000 SAX: CBY000	Carcinogen	---	---	18.75	0.4 (29)	5 (29)
Cesium (10) ' ' Cs	Cesium 134 13967709 or 13967-70-9 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	4 mrem ede/yr	

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Cesium (10) ' ' Cs	Cesium 137 10045973 or 10045-97-3 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	4 mrem ede/yr	
Cesium (10) ' ' Cs	Cesium 137 12587472 or 12587-47-2 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	4 mrem ede/yr	
Cesium (10) ' ' Cs	Cesium 144 --- NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	4 mrem ede/yr	
alpha-Chlordane ' ' --- ' α-Chlordane ' cis-Chlordan ' cis-Chlordane ' α(cis)- Chlordane ' Chlordane, cis-Isomer	5103719 or 5103-71-9 NIOSH: PB 9705000 SAX: CDR675	Carcinogen	2.4	0.0043	14,100	0.00080	0.0008
gamma-Chlordane ' ' --- ' Chlordane, beta-Isomer	5103742 or 5103-74-2 NIOSH: --- SAX: ---	Carcinogen	2.4	0.0043	14,100	0.00080	0.00080
trans-Nonachlor (Chlordane component) ' ' --- ' Chlordane, trans-Isomer	39765805 or 39765-80-5 NIOSH: --- SAX: ---	Carcinogen	2.4	0.0043	14,100	0.00080	0.00080
Chloride ' ' ---	16887006 or 16887-00-6 NIOSH: --- SAX: ---	Narrative (18)	860,000	230,000	---	---	---
Chlorimuron Ethyl ' ' Classic '	90982324 or 90982-32-4	Toxic	----	---	---	700	700
Chlorine, total residual ' ' Cl ' Bertholite ' Chlorine, molecular ' Molecular Chlorine	7782505 or 7782-50-5 NIOSH: FO 2100000 SAX: CDV750	Toxic	19	11	---	(17)	(17)
						NPP	NPP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
p-Chloro-m-Cresol ' ' --- ' PCMC ' Parol ' Aptal ' Baktol ' Baktolan ' Ottafact ' Raschit ' Rasen-Anicon ' Parmetol ' Candasetpic ' Chlorocresol ' Preventol CMK ' RCRA Waste Number U039 ' Parachlorometra Cresol ' 4-Chloro-3-methylphenol ' 2-Chloro-Hydroxytoluene ' Phenol, 4-Chloro-3-methyl- ' Chlorophenol, 4-, methyl, 3-	59507 or 59-50-7 NIOSH: GO 7100000 SAX: CFE250	Harmful Organoleptic	---	---	---	500 (31)	2,000 (31)
2-ChloroethylVinyl Ether ' ' --- ' (2-Chloroethoxy)Ethene ' RCRA Waste Number U042 ' Vinyl β-Chloroethyl Ether ' Vinyl 2-Chloroethyl Ether	110758 or 110-75-8 NIOSH: KN 6300000 SAX: CHI250	Carcinogen	---	---	0.557	---	---
Chloroform (HM) ' ' Trichloromethane ' TCM ' Freon 20 ' Trichloroform ' R-20 Refrigerant ' Methenyl Chloride ' Formyl Trichloride ' Methyl Trichloride ' Methane Trichloride ' Methane, Trichloro- ' Methenyl Trichloride ' RCRA Waste Number U044 ' NCI CO2686	67663 or 67-66-3 NIOSH: FS 9100000 SAX: CHJ500	Carcinogen	---	---	3.75	60 (2) (29)	2,000 (2) (29)
Chloroethane ' ' --- ' Aethylis ' Aethylis Chloridum ' Anodynon ' Chelen ' Chloroethyl ' Chloridum ' Chloroethane ' Chloryl ' Chloryl Anesthetic ' Ethyl Chloride ' Ether Chloratus ' Ether Hydrochloric ' Ether Muriatic ' Hydrochloric Ether ' Kelene ' Monochlorethane ' Muriatic Ether ' Narcotile ' NCI C06224	75003 or 75-00-3 NIOSH: KH 7525000 SAX: EHH000	Toxic	---	---	---	---	---
3-Chlorophenol, 4 Chlorophenol	--106489	Harmful, Organoleptic	---	---	---	0.1 (21)	PP PP
4-Chlorophenyl Phenyl Ether ' ' --- '	7005723 or 7005-72-3 NIOSH: --- SAX: ---	Toxic with BCF >300	---	---	1,200	---	---

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Chlorpyrifos ' ' --- ' Ethion ' Brodan ' Eradex ' Dursban ' Lorsban ' Pyrinex ' NA 2783 ' Piridane ' DowCo 179 ' SHA 059101 ' Ethion, dry ' Chlorothalonil ' Chlorpyrifos-Ethyl ' O,O-Diethyl O-3,5,6-Trichloro-2-Pyridyl Phosphorothioate ' Phosphorothioic Acid, O,O-Diethyl O-(3,5,6-Trichloro-2-Pyridyl) Ester 1	2921882 or 2921-88-2 NIOSH: TF 6300000 SAX: DYE000	Toxic	0.083	0.041	---	---	---
Chromium (9) ' ' Cr ' Chrome	7440473 or 7440-47-3 NIOSH: GB 4200000 SAX: CMI750	Toxic	---	---	---	100 (41) MCL	100 (41) MCL
Chromium, trivalent (9) ' ' Chromium (III)	16065831 or 16065-83-1 NIOSH: --- SAX: ---	Toxic	579 @ 25 mg/L hardness (11) (12) PP	27.7 @ 25 mg/L hardness (11) (12) PP	16	Total	---
Chromium, hexavalent (9) ' ' Chromium (VI)	18540299 or 18540-29-9 NIOSH: --- SAX: ---	Toxic	16 (11)	11 (11)	16	Total	---
Chlorsulfuron ' ' Glean ' ' Telar	64902723 or 64902-72-3	Toxic	---	---	---	350	1750
Chrysene (PAH) ' ' --- ' Benz(a)Phenanthrene ' Benzo(a)Phenanthrene ' 1,2-Benzphenanthrene ' 1,2-Benzophenanthrene ' RCRA Waste Number U050 ' 1,2,5,6-Dibenzonaphthalene	218019 or 218-01-9 NIOSH: GC0700000 SAX: CML810	Carcinogen	---	---	30	0.12 (2) (29) PP	0.13 (2) (29) PP
Color (18) ' ' ---	---N/A	Harmful, Narrative (18)	---	---	---	---NPP narrative	---NPP narrative
Conductance, specific (21) ' ' ---	N/A	Narrative (18)	---	---	---	--- narrative	--- narrative

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Copper (9) ' ' Cu ' Allbri Natural Copper ' ANAC 110 ' Arwood Copper ' Bronze Powder ' CDA 101 ' CDA 102 ' CDA 110 ' CDA 122 ' C.I. 77400 ' C.I. Pigment Metal 2 ' Copper Bronze ' 1721 Gold ' Gold Bronze ' Kafar Copper ' M1 (Copper) ' M2 (Copper) ' OFHC Cu ' Raney Copper	7440508 or 7440-50-8 NIOSH: GL 5325000 SAX: CNI000	Toxic Organoleptic	Biotic Ligand Model (52)	Biotic Ligand Model (52)	36	1,300 (21) 1000 PP	---
Cyanide, total ' ' --- ' Cyanide ' Isocyanide ' Cyanide Ion ' Free Cyanide ' Cyanide Anion ' Carbon Nitride Ion (CN ¹⁻) ' RCRA Waste Number P030 ' Cyanide, weak acid dissociable (WAD) ' Cyanides, includes soluble salts and complexes	57125 or 57-12-5 NIOSH: GS 7175000 SAX: COI500	Toxic	22 PP	5.2 PP	1	4 (46) PP	400 PP
Diazinon	333415 or 333-41-5 NIOSH: TF 3325000 SAX:	Toxic	0.17 NPP =	0.17 PP		1 HA	
Demeton ' ' --- ' Systox ' Bay 10756 ' Bayer 8169 ' Demox ' Diethoxy Thiophosphoric Acid Ester of 2-Ethylmercaptoethanol ' O,O-Diethyl 2-Ethylmercaptoethyl Thiophosphate ' O,O-Diethyl O(and S)-2-(Ethyl-Thio)Ethyl Phosphorothioate Mixture ' E 1059 ' ENT 17,295 ' Mercaptophos ' Systemox ' Systox ' ULV ' Demeton-O + Demeton-S	8065483 or 8065-48-3 NIOSH: TF 3150000 SAX: DAO600	Toxic	--- NPP	0.1 (45) NPP	---	0.3 (45) HA	PP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Dibutyl Phthalate (33) ' ' --- ' DPB ' Celluflex DPB ' Elaol ' Hexaplas M/B ' Palatinol C ' Polycizer DBP ' PX 104 ' Staflex DBP ' Witcizer ' SHA 028001 ' Butylphthalate ' N-Butylphthalate ' Dibutyl Phthalate ' Di-n-Butylphthalate ' Di-n-Butylphthalate ' Dibutyl-o-Phthalate ' Di-n-Butyl Phthalate ' RCRA Waste Number U069 ' Phthalic Acid Dibutyl Ester ' Dibutyl 1,2-Benzene Dicarboxylate ' 1,2-Benzenedicarboxylic Acid Dibutyl Ester ' 1,2-Benzenedicarboxylic Acid, Dibutyl Ester ' Benzene-o-Dicarboxylic Acid Di-n-Butyl Ester	84742 or 84-74-2 NIOSH: TI 0875000 SAX: DEH200	Toxic	---	---	89	20 (2)	30 (2)
Dicamba ' ' Banvel '	1918009 or 1918-00-9	Toxic	---	---	---	200 HA	200
1,3-Dichlorobenzene ' ' --- ' M-Dichlorobenzene ' m-Dichlorobenzene ' meta-Dichlorobenzene ' Dichlorobenzene, 1,3- ' Benzene, 1,3-Dichloro-	541731 or 541-73-1 NIOSH: CZ 4499000 SAX: DEP699	Toxic	---	---	55.6	7 PP	10 PP
1,4-Dichlorobenzene ' ' --- ' PDB ' PDCB ' NCI C54955 ' Evola ' Paradi ' Paradow ' Persia-Perazol ' Paracide ' Parazene ' Paramoth ' Santochlor ' Paranuggets ' di-Chloricidic ' Para Chrystals ' p-Dichlorobenzene ' Caswell Number 632 ' Paradichlorobenzene ' para-Dichlorobenzene ' Benzene, 1,4-Dichloro- ' RCRA Waste Number U070 ' RCRA Waste Number U071 ' RCRA Waste Number U072 ' p-Chlorophenyl Chloride ' EPA Pesticide Chemical Code 061501	106467 or 106-46-7 NIOSH: CZ 4550000 SAX: DEP800	Toxic	---	---	55.6	75 (41) (46)	900 (41)
						MCL	PP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
3,3'-Dichlorobenzidine ' ' --- ' DCB ' C.I. 23060 ' Curithane C126 ' Dichlorobenzidine ' o,o'-Dichlorobenzidine ' Dichlorobenzidine Base ' Benzidine, 3,3'-Dichloro- ' RCRA Waste Number U073 ' 3,3'-Dichloro-4,4'- Diaminodiphenyl ' 3,3'-Dichloro-(1,1'-Biphenyl)-4,4'- Diamine ' 1,1'-Biphenyl-4,4'-Diamine, 3,3'-Dichloro-	91941 or 91-94-1 NIOSH: DD 0524000 SAX: DEQ400	Carcinogen	---	---	312	0.049 (2) (29)	0.15 (2) (29)
Dichlorodifluoromethane (HM) ' ' --- ' F 12 ' R 12 ' FC 12 ' Halon ' CFC-12 ' Arcton 6 ' Electro-CF 12 ' Eskimon 12 ' Frigen 12 ' Gentron 12 ' Isceon 122 ' Kaiser Chemicals 12 ' Ledon 12 ' Ucon 12 ' Freon 12 ' Propellant 12 ' Refrigerant 12 ' Fluorocarbon-12 ' RCRA Waste Number U075 ' Difluorodichloromethane ' Methane, dichlorodifluoro-	75718 or 75-71-8 NIOSH: PA 8200000 SAX: DFA600 STORET No.: 34668	Toxic	---	---	3.75	1,000	1,000
p,p'-Dichlorodiphenyl Dichloroethane ' ' --- ' TDE ' DDD ' Dilene ' NCI C00475 ' Rothane ' Rhothane ' 4,4'-DDD ' p,p'-DDD ' p,p'-TDE ' 4,4'-D-DDD ' RCRA Waste Number U060 ' Tetrachlorodiphenylethane ' Dichlorodiphenyldichloroethane ' Dichlorodiphenyl Dichloroethane ' 2,2-bis(4-Chlorophenyl)-1,1- Dichloroethane ' 1,1-Dichloro-2,2-bis(p-Chlorophenyl) Ethane ' 1,1-bis(4-Chlorophenyl)-2,2-Dichloroethane ' 2,2- bis(p-Chlorophenyl)-1,1-Dichloroethane ' Benzene, 1,1'(2,2- Dichloroethylidene)Bis[4-Chloro-	72548 or 72-54-8 NIOSH: KI 0700000 SAX: BIM500	Carcinogen	---	---	53,600	0.00012 (2) (29)	0.00012 (2) (29)
p,p'-Dichlorodiphenyldichloroethylene ' ' --- ' DDE ' p,p'-DDE ' 4,4'-DDE ' NCI C00555 ' Dichlorodiphenyldichloroethylene ' Dichlorodiphenyldichloroethylene, p,p'- ' 2,2'-bis(4- Chlorophenyl)-1,1-Dichloroethylene ' 1,1'- (Dichloroethenylidene)bis(4-Chlorobenzene) ' 2,2'-bis(p- Chlorophenyl)-1,1-Dichloroethylene ' Benzene, 1,1'- (Dichloroethenylidene)Bis[4-Chloro-	72559 or 72-55-9 NIOSH: KV 9450000 SAX: BIM750	Carcinogen	---	---	53,600	0.000018 (2) (29)	0.000018 (2) (29)

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
p,p'-Dichlorodiphenyltrichloroethane ' ' --- ' DDT ' 4,4'-DDT ' Agritan ' Anoflex ' Arkotine ' Azotox ' Bosan Supra ' Bovidermol ' Chlorophenothan ' Chlorophenothane ' Chlorophenotoxum ' Citox ' Clofenotane ' Dedelo ' ' Chlorophenothane ' Diphenyltrichloroethane ' Dichlorodiphenyltrichloroethane ' 4,4'-Dichlorodiphenyltrichloroethane ' Dichlorodiphenyltrichloroethane, p,p'- ' 1,1,1-Trichloro-2,2,-bis(p-Chlorophenyl) Ethane ' 1,1,1-Trichloro-2,2,-bis(p-Chlorophenyl)Ethane ' 1,1,1-Trichloro-2,2,-Di(4-Chlorophenyl)-Ethane ' 1,1-Bis-(p-Chlorophenyl)-2,2,2-Trichloroethane ' 2,2-Bis-(p-Chlorophenyl)-1,1,1-Trichloroethane ' Benzene, 1,1'-(2,2,2-Trichloroethylidene)Bis(4-Chloro-) ' alpha,alpha-Bis(p-Chlorophenyl)-beta,beta,beta-Trichloroethane	50293 or 50-29-3 NIOSH: KJ 3325000 SAX: DAD200	Carcinogen	‡ (44)(48)	0.001 (44)(48)	53,600	0.000030 (2) (29)	0.000030 (2) (29)
			PP	PP		PP	PP
1,1-Dichloroethane ' ' Vinylidene Chloride ' VDC ' 1,1-DCE ' NCI C04535 ' 1,1-Dichloroethene ' Vinylidene Chloride ' 1,1-Dichloroethylene ' Ethene, 1,1-Dichloro- ' Vinylidene Dichloride ' Ethylidene Dichloride ' Dichloroethylene, 1,1- ' RCRA Waste Number U076 ' Ethylene, 1,1-Dichloro- ' Chlorinated Hydrochloric Ether	75343 or 75-34-3 NIOSH: KI 0175000 SAX: DFF809	Carcinogen	---	---	---	(46)	
						PP	PP
1,1-Dichloroethene ' ' Vinylidene Chloride ' VDC ' 1,1-DCE ' Sconatex ' NCI C54262 ' 1,1-Dichloroethane ' 1,1-Dichloroethene ' Vinylidene Chloride ' 1,1-Dichloroethylene ' Vinylidene Dichloride ' Ethene, 1,1-Dichloro- ' Vinylidene Chloride II ' RCRA Waste Number U078 ' Dichloroethylene, 1,1- ' Ethylene, 1,1-Dichloro-	75354 or 75-35-4 NIOSH: KV 9275000 SAX: DFI000	Carcinogen	---	---	5.6	7 (41) (46)	20,000
						MCL	PP
cis-1,2-Dichloroethylene ' ' --- ' 1,2-Dichloroethylene ' cis-Dichloroethylene ' cis-1,2-Dichloroethene ' 1,2,cis-Dichloroethylene ' ethylene, 1,2-Dichloro-, (z)-	156592 or 156-59-2 NIOSH: KV 9420000 SAX: DFI200	Toxic	---	---	---	70	70
						MCL	

EPA took no action on the unintentional 2017 revision of the acute aquatic life criterion for p,p'-Dichlorodiphenyltrichloroethane (4,4'-DDT) from 1.1 to 1 µg/L. The criterion remains 1.1 µg/L for CWA purposes.

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
trans-1,2-Dichloroethylene ' ' --- ' trans-Dichloroethylene ' RCRA Waste Number U079 ' trans-1,2-Dichloroethane ' trans-1,2-Dichloroethene ' Dichloroethylene, trans- ' trans-Acetylene Dichloride ' 1,2-trans-Dichloroethylene ' Ethene, 1,2-Dichloro-, (E)- ' ' 1,2-Dichloroethylene, trans-	156605 or 156-60-5 NIOSH: KV 9400000 SAX: DFI600	Toxic	---	---	1.58	100 (46)	4,000
2,3-Dichlorophenol	576249 or 576-24-9	Harmful, Organoleptic	--	---	---	0.04 PP	PP
2,4-Dichlorophenol ' ' --- ' DCP ' 2,4-DCP ' NCI C55345 ' Dichlorophenol, 2,4- ' Phenol, 2,4-Dichloro- ' RCRA Waste Number U081	120832 or 120-83-2 NIOSH: SK 8575000 SAX: DFX800	Toxic Organoleptic	---	---	40.7	10 (2)(5)(21)	60 (2)(5)(21)
2,5-Dichlorophenol	583788 or 583-78-8	Harmful Organoleptic	---	---	---	0.5	
2,6-Dichlorophenol	87650 or 87-65-0	Harmful Organoleptic	---	---	---	0.2	
3,4-Dichlorophenol	95772 or 95-77-2	Harmful Organoleptic	---	---	---	0.3	
2,4-Dichlorophenoxyacetic Acid ' ' --- ' 2,4-D ' Salvo ' Phenox ' Farmco ' Amidox ' ' Miracle ' Agrotect ' Weedtrol ' Herbidal ' Ded-Weed ' Lawn-Keep ' ' Fernimine ' Crop Rider ' Aqua-Kleen ' Dichlorophenoxyacetic Acid ' 2,4- Dichlorophenoxy Acetic Acid ' Dichlorophenoxyacetic Acid, 2,4- ' Acetic Acid, (2,4- Dichlorophenoxy)- ' 2,4-Dichlorophenoxyacetic Acid, salts and esters	94757 or 94-75-7 NIOSH: AG 6825000 SAX: DFY600	Toxic	---	---	---	70 (43) (29)	12,000
						MCL	

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Only Organism (µg/L)
1,3-Dichloropropene ' ' Telone II ' Telone ' NCI C03985 ' Vidden D ' Dichloropropene ' α-Chloroallyl Chloride ' γ-Chloroallyl Chloride ' Dichloropropene, 1,3- ' 1,3-Dichloropropylene ' 1,3-Dichloro-2-Propene ' Propene, 1,3-Dichloro- ' Telone II Soil Fumigant ' 3-Chloropropenyl Chloride ' alpha,gamma-Dichloropropylene	542756 or 542-75-6 NIOSH: UC 8310000 SAX: CEF750	Carcinogen	---	---	1.91	0.27 (46)	12
cis-1,3-Dichloropropene ' ' Telone II ' 1,3-Dichloropropene ' 1,3-Dichloropropylene ' (Z)-1,3-Dichloropropene ' cis-1,3-Dichloropropylene ' 1-Propene, 1,3-Dichloro-, (Z)-	10061015 or 10061-01-5 NIOSH: UC 8325000 SAX: DGH200	Carcinogen	---	---	1.91	3.4	HA 10
trans-1,3-Dichloropropene ' ' Telone II ' 1,3-Dichloropropene ' 1,3-Dichloropropylene ' (E)-1,3-Dichloropropene ' trans-1,3-Dichloropropylene ' 1-Propene, 1,3-Dichloro-, (E)-	10061026 or 10061-02-6 NIOSH: UC 8320000 SAX: DGH000	Carcinogen	---	---	1.91	2	---
Dieldrin ' ' --- ' Alvit ' Quintox ' Octalox ' Illoxol ' Dieldrex ' NCI C00124 ' Dieldrite ' SHA 045001 ' RCRA Waste Number P037 ' 1,4:5,8-Dimethanonaphthalene ' Hexachloroepoxyoctahydro-endo,exo-Dimethanonaphthalene ' 3,4,5,6,9,9-Hexachloro-1a,2,2a,3,6,6a,7,7a-Octahydro-2,7:3,6-Dimethanonaphth(2,3-b)Oxirene ' 2,7:3,6-Dimethanonaphth(2,3-b)Oxirene, 3,4,5,6,9,9-Hexachloro-1a,2,2a,3,6,6a,7,7a-Octahydro- ' 1,2,3,4,10,10-Hexachloro-6,7-Epoxy-1,4,4a,5,6,7,8,8a-Octahydro-Endo,Exo-1,4:5,8-Dimethanonaphthalene	60571 or 60-57-1 NIOSH: IO 1750000 SAX: DHB400	Carcinogen	0.24 (17)	0.056 (17)	4,670	0.0000012 (2) (29)	0.0000012 (2) (29)
Diethyl Phthalate (33) ' ' --- ' Anozol ' Neantine ' Solvanol ' NCI C60048 ' Placidole E ' Ethyl Phthalate ' Diethylphthalate ' Diethyl-o-Phthalate ' RCRA Waste Number U088 ' 1,2-Benzenedicarboxylic Acid, Diethyl Ester	84662 or 84-66-2 NIOSH: TI 1050000 SAX: DJX000	Toxic	---	---	73	600 (2)	600 (2)
			PP	PP		PP	PP
						PP	PP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Dimethoate ' ' ---	60515 or 60-51-5	Toxic	---	---	---	7 HA	7
Dimethyl Phthalate (33) ' ' --- ' DMP ' NTM ' ENT 262 ' Mipax ' Avolin ' Fermine ' Solvanom ' Solvarone ' Palatinol M ' Methyl Phthalate ' Dimethylphthalate ' Phthalic Acid, Dimethyl Ester ' Dimethyl Benzene-o-Dicarboxylate ' Dimethyl 1,2- Benzenedicarboxylate ' 1,2-Benzenedicarboxylic Acid, Dimethyl Ester	131113 or 131-11-3 NIOSH: TI 1575000 SAX: DTR200	Toxic	---	---	36	2,000 PP	2,000 PP
2,4-Dimethylphenol ' ' --- ' m-Xylenol ' 2,4-Xylenol ' 4,6-Dimethylphenol ' Caswell Number 907A ' 2,4-Dimethyl Phenol ' Phenol, 2,4-Dimethyl- ' RCRA Waste Number U101 ' 1-Hydroxy-2,4-Dimethylbenzene ' 4-Hydroxy-1,3- Dimethylbenzene ' EPA Pesticide Chemical Code 086804	105679 or 105-67-9 NIOSH: ZE 5600000 SAX: XKJ500	Toxic Organoleptic	---	---	93.8	100 (2) PP	3,000 (2) PP
Dinitrophenols	25550587	Toxic	---	---	---	10 PP	1,000 PP
2,4-Dinitrophenol ' ' --- ' Nitro ' Aldifen ' Kleenup ' 2,4-DNP ' Chemox PE ' Maroxol-50 ' Solfo Black B ' alpha-Dinitrophenol ' Dinitrophenol, 2,4- ' Phenol, 2,4-Dinitro- ' Tertrosulphur Black PB ' RCRA Waste Number P048 ' 1-Hydroxy-2,4-Dinitrobenzene	51285 or 51-28-5 NIOSH: SL 2800000 SAX: DUZ000	Toxic	---	---	1.5	10 (2) PP	300 (2) PP
2,4-Dinitrotoluene ' ' --- ' 2,4-DNT ' NCI C01865 ' 2,4-Dinitrotoluol ' Toluene, 2,4-Dinitro- ' RCRA Waste Number U105 ' Benzene, 1-Methyl-2,4- Dinitro-	121142 or 121-14-2 NIOSH: XT 1575000 SAX: DVH000	Carcinogen	---	---	3.8	0.049 (29) PP	1.7 (29) PP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
2,6-Dinitrotoluene ' ' --- ' 2,6-DNT ' 2-Methyl-1,3-Dinitrobenzene ' RCRA Waste Number U106	606202 or 606-20-2 NIOSH: XT 1925000 SAX: DVH400	Carcinogen	---	---	---	0.5	
						HA	
Dioxin ' ' --- ' TCDD ' TCDBD ' NCI C03714 ' Dioxine ' Tetradoxin ' 2,3,7,8-TCDD ' 2,3,7,8-Tetrachlorodibenzo-p-Dioxin ' 2,3,7,8- Tetrachlorodibenzo-1,4-Dioxin ' Dibenzo[b,e][1,4]Dioxin, 2,3,7,8-Tetrachloro-	1746016 or 1746-01-6 NIOSH: HP 3500000 SAX: TAI000	Carcinogen	---	---	5,000	5x10 ⁻⁸ (28)	5.1x10 ⁻⁹
						PP	
Diphenamid ' ' ---	957517 or 957-51-7	Carcinogen	---	---	---	200 HA	200
1,2-Diphenylhydrazine ' ' --- ' Hydrazobenzene ' NCI C01854 ' N,N'-Bianiline ' Benzene, Hydrazodi- ' RCRA Waste Number U109 ' (sym)-Diphenylhydrazine ' Diphenylhydrazine, 1,2- ' Hydrazine, 1,2-Diphenyl-	122667 or 122-66-7 NIOSH: MW 2625000 SAX: HHG000	Carcinogen	---	---	24.9	0.03 (2) (29)	0.2 (2) (29)
						PP	
Diuron ' ' --- ' Karmex	330541 or 330-54-1	Toxic	---	---	---	10 HA	10
Endosulfan, I ' ' --- ' Thiodan I ' Endosulfan-I ' Alpha-Endosulfan ' alpha-Endosulfan	959988 or 959-98-8 NIOSH: --- SAX: ---	Toxic	0.11 (44) (47) PP	0.056 (44)(47) PP	270	20 (2)	30 (2)
						PP	
Endosulfan, II ' ' --- ' Thiodan II ' Endosulfan-II ' Beta-Endosulfan ' beta-Endosulfan	33213659 or 33213-65-9 NIOSH: --- SAX: ---	Toxic	0.11 (44) (47) PP	0.056 (44) (47) PP	270	20 (2)	40 (2)
						PP	PP
Endosulfan Sulfate ' ' --- ' 6,9-Methano-2,3,4-Benzodioxathiepin, 6,7	1031078 or 1031-07-8 NIOSH: --- SAX: ---	Toxic	---	---	270	20 (2)	40 (2)
						PP	PP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Endothal ' ' --- ' Hydout ' Hydrothal-47 ' Aquathol ' SHA 038901 ' Accelerate ' Tri-Endothal ' Endothal Hydout ' RCRA Waste Number P088 ' 3,6-Endooxohexahydrophthalic Acid ' Phthalic Acid, Hexahydro-3,6-endo-Oxy- ' 7-Oxabicyclo(2,2,1)Heptane-2,3-Dicarboxylic Acid ' 1,2-Cyclohexanedicarboxylic Acid, 3,6-endo-Epoxy-	145733 or 145-73-3 NIOSH: RN 7875000 SAX: EAR000	Toxic	---	---	---	100	100
Endrin Aldehyde ' ' ---	7421934 or 7421-93-4 NIOSH: --- SAX: ---	Toxic with BCF >300	---	---	3,970	1 (2) PP	1 (2) PP
Epichlorohydrin ' ' --- ' ECH ' Epoxy Propane ' α-Epichlorohydrin ' Chloromethyloxirane ' RCRA Waste Number U041 ' γ-Chloropropyleneoxide ' 2-Chloropropylene Oxide ' Glycerol Epichlorohydrin ' 2,3-Epoxypropyl Chloride ' 1-Chlor-2,3-Epoxypropane ' 3-Chlor-1,2-Epoxypropane	106898 or 106-89-8 NIOSH: TX 4900000 SAX: CGN750	Carcinogen	---	---	---	10 HA	30
Ethylbenzene ' ' --- ' EB ' NCI C56393 ' Ethylbenzol ' Phenylethane ' Ethyl Benzene ' Benzene, Ethyl	100414 or 100-41-4 NIOSH: DA 0700000 SAX: EGP500	Toxic	---	---	37.5	68 (46) PP	130
1,2-Dibromoethane ' ' Ethylene Dibromide ' DBE ' EDB ' Nephis ' Kopfume ' Celmide ' E-D-Bee ' Soilfume ' Bromofume ' Dowfume 40 ' SHA 042002 ' Pestmaster ' Soilbrom-40 ' Dibromoethane ' Ethylene Bromide ' Glycol Dibromide ' 1,2-Dibromoethane ' Dibromoethane, 1,2- ' 1,2-Ethylene Dibromide ' RCRA Waste Number U067	106934 or 106-93-4 NIOSH: KH 9275000 SAX: EIY500	Carcinogen	---	---	---	0.004 HA	0.004
Fluometuron ' ' --- ' Flo-Met	2164172 or 2164-17-2	Carcinogen	---	--	---	83 HA	90

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Fluoranthene ' ' --- ' Idryl ' Benzo(jk)Fluorene ' Benzo(j,k)Fluorene ' 1,2- Benzacenaphthene ' RCRA Waste Number U120 ' 1,2- (1,8-Naphthylene)Benzene ' Benzene, 1,2-(1,8- Naphthalenediyl)-	206440 or 206-44-0 NIOSH: LL 4025000 SAX: FDF000	Toxic with BCF >300	---	---	1,150	20 (2)	20 (2)
Fluorene (PAH) ' ' --- ' 9H-Fluorene ' Diphenylenemethane ' o- Biphenylenemethane ' 2,2'-Methylenebiphenyl	86737 or 86-73-7 NIOSH: --- SAX: ---	Toxic	---	---	30	50 (2)	70 (2)
Fluorine ' ' Flouride ' Fluoride ' Fluoride ⁽¹⁻⁾ ' Perfluoride ' Fluoride Ion ' Fluorine, Ion ' Soluable Fluoride ' RCRA Waste Number P056 ' Hydrofluoric Acid, Ion(1-)	7782414 or 7782-41-4 NIOSH: LM 6475000 SAX: FEZ000	Toxic	---	---	---	4,000	4,000
Fluoride ' ' Flourine ' Fluoride ' Fluoride ⁽¹⁻⁾ ' Perfluoride ' Fluoride Ion ' Fluorine, Ion ' Soluable Fluoride ' RCRA Waste Number P056 ' Hydrofluoric Acid, Ion(1-)	16984488 or 16984-48-8 NIOSH: LM 6290000 SAX: FEX875	Toxic	---	---	---	4,000	4,000
Gamma Emitters (10) ' ' ---	Multiple	Carcinogen / Radioactive	---	---	---	0.4 mrem ede/yr	0.4 mrem ede/yr
Gases, dissolved, total-pressure (16) ' ' ---	Multiple	Toxic	100% of saturation-- -		---	NPP narrative	NPP narrative
Glyphosate ' ' --- ' Jury ' Honcho ' Rattler ' Weedoff ' Roundup ' Glifonox ' n-(Phosphonomethyl)-Glycine ' Glycine, n- (Phosphonomethyl)- ' Glyphosate plus inert ingredients ' MON 0573	1071836 or 1071-83-6 NIOSH: MC 1075000 SAX: PHA500	Toxic	---	---	---	700	700
Glyphosate Isopropylamine Salt ' ' --- ' SHA 103601	38641940 or 38641-94-0 NIOSH: --- SAX: ---	Toxic	---	---	---	700	700

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Hardness, total ' ' ---	---	Narrative (18)	---	---	---	NPP (18) narrative	NPP (18) narrative
Heptachlor Epoxide ' ' --- ' HCE ' Velsicol 53-CS-17 ' Epoxyheptachlor ' 1,4,5,6,7,8,8-Heptachloro-2,3-Epoxy-2,3,3a,4,7,7a-Hexahydro- 4,7-Methanoindene ' 2,5-Methano-2H-Indeno[1,2b]Oxirene, 2,3,4,5,6,7,7-Heptachloro-1a,1b,5,5a,6,6a-Hexahydro- (alpha, beta, and gamma isomers)	1024573 or 1024-57-3 NIOSH: PB 9450000 SAX: EBW500	Carcinogen	0.26 (44) PP	0.0038 (30) (44) PP	11,200	0.000032 (2)(29) PP	0.000032 (2)(29) PP
Hexachlorobutadiene ' ' --- ' HCBd ' Dolan-Pur ' Perchlorobutadiene ' RCRA Waste Number U128 ' 1,3-Hexachlorobutadiene ' 1,3-Butadiene, Hexachloro- ' 1,1,2,3,4,4-Hexachloro-1,3-Butadiene ' 1,3-Butadiene, 1,1,2,3,4,4-Hexachloro-	87683 or 87-68-3 NIOSH: EJ 0700000 SAX: PCF000	Carcinogen	---	---	2.78	0.01 (2) (29) PP	0.01 (2) (29) PP
Hexachlorocyclohexane ' ' --- ' BHC ' DBH ' HCH ' HCCH ' HEXA ' Hexylan ' Hexachlor ' Gammexane ' Hexachloran ' Compound 666 ' Benzenehexachloride ' Benzene Hexachloride	608731 or 608-73-1 NIOSH: GV 3150000 SAX: BBP750	Carcinogen	---	---		0.0066 (2) (44) NPP	0.010 (2) (44) NPP
alpha-Hexachlorocyclohexane ' ' --- ' Benzene Hexachloride- α -isomer ' α -BHC ' alpha-BHC ' HCH-alpha ' alpha-HCH ' alpha-Lindane ' α Hexachlorocyclohexane ' alpha-Benzenehexachloride ' Hexachlorocyclohexane-alpha ' alpha- Hexachlorocyclohexane ' Benzene Hexachloride-alpha- isomer ' alpha-1,2,3,4,5,6-Hexachlorocyclohexane ' Cyclohexane, alpha-1,2,3,4,5,6-Hexachloro- ' 1-alpha,2- alpha,3-beta,4-alpha,5-beta,6-beta-Hexachlorocyclohexane ' Cyclohexane, alpha-1,2,3,4,5,6-Hexachloro-, (1-alpha, 2-alpha, 3-beta, 4-alpha, 5-beta, 6-beta)-	319846 or 319-84-6 NIOSH: GV 3500000 SAX: BBQ000	Carcinogen	---	---	130	0.00036 (2) (29) PP	0.00039 (2) (29) PP

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1)(2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
beta-Hexachlorocyclohexane ' ' --- ' β-BHC ' beta-BHC ' HCH-beta ' beta-HCH ' β-Lindane ' beta-Lindane ' beta-Hexachlorobenzene ' β Hexachlorocyclohexane ' Hexachlorocyclohexane-beta ' Hexachlorocyclohexane, beta- ' trans-alpha-Benzenehexachloride ' Benzenehexachloride, trans-alpha- ' beta-1,2,3,4,5,6-Hexachlorocyclohexane ' Cyclohexane, 1,2,3,4,5,6-Hexachloro-, beta- ' 1-alpha,2-beta,3-alpha,4-beta,5-alpha,6-beta-Hexachlorocyclohexane ' Cyclohexane, 1,2,3,4,5,6-Hexachloro-, (1-alpha, 2-beta, 3-alpha, 4-beta, 5-alpha, 6-beta)-	319857 or 319-85-7 NIOSH: GV 4375000 SAX: BBR000	Carcinogen	---	---	130	0.0080 (2) (29)	0.014 (2) (29)
gamma-hexachlorocyclohexane ' ' Lindane ' ΓBHC ' γ-BHC ' Gamene ' Lintox ' Lentox ' Hexcide ' Aparsin ' Agrocide ' Afcide ' BHC-gamma ' gamma-BHC ' HCH-gamma ' gamma-HCH ' Γ Hexachlorocyclohexane ' gamma-Hexachlorobenzene ' gamma-Benzenehexachloride ' gamma-Benzene Hexachloride ' Hexachlorocyclohexane-gamma ' Hexachlorocyclohexane (gamma) ' Benzene Hexachloride-gamma-isomer ' gamma-1,2,3,4,5,6-Hexachlorocyclohexane ' Cyclohexane, 1,2,3,4,5,6-Hexachloro-, gamma-isomer ' 1,2,3,4,5,6-Hexachlorocyclohexane, gamma-isomer ' 1-alpha,2-alpha,3-beta,4-alpha,5-alpha,6-beta-Hexachlorocyclohexane ' Cyclohexane, 1,2,3,4,5,6-Hexachloro-, (1-alpha, 2-alpha, 3-beta, 4-alpha, 5-alpha, 6-beta)	58899 or 58-89-9 NIOSH: GV 4900000 SAX: BBQ500	Toxic	0.95 (17)	---	130	0.2 (46)	4.4
Hexachloroethane ' ' --- ' Avlotane ' Distokal ' Distopan ' Distopin ' Egitol ' Falkitol ' Fasciolin ' NCI C04604 ' Phenohep ' Mottenhexe ' Perchloroethane ' Hexachloroethylene ' Ethane, Hexachloro- ' Carbon Hexachloride ' Ethane Hexachloride ' Ethylene Hexachloride ' RCRA Waste Number U131 ' 1,1,1,2,2,2-Hexachloroethane	67721 or 67-72-1 NIOSH: KI 4025000 SAX: HCl000	Carcinogen	---	---	86.9	0.1 (2) (29)	0.1 (2) (29)

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Hexazinone ' ' ---	51235042 or 51235-04-2	Toxic	---	---	---	300 HA	400
Hydrogen Sulfide ' ' --- ' Stink Damp ' Sulfur Hydride ' Hydrogen Sulphide ' Dihydrogen Sulfide ' Hydrosulfuric Acid ' Sulfurated Hydrogen ' RCRA Waste Number U135 ' Dihydrogen Monosulfide ' Hydrogen Sulfuric Acid	7783064 or 7783-06-4 NIOSH: MX 1225000 SAX: HIC500	Toxic	---	2.0 (45) NPP	---	---	---
Indeno(1,2,3-cd)pyrene (PAH) ' ' --- ' o-Phenylene-pyrene ' 2,3-Phenylene-pyrene ' 2,3-o- Phenylene-pyrene ' RCRA Waste Number U137 ' Indeno (1,2,3-cd) Pyrene ' 1,10-(o-Phenylene)Pyrene ' 1,10-(1,2- Phenylene)Pyrene	193395 or 193-39-5 NIOSH: NK 9300000 SAX: IBZ000	Carcinogen	---	---	30	0.0012 (2) (29)	0.0013 (2) (29)
Iodine (10) ' ' I	Iodine 129 15046841 or 15046-84-1 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	4 mrem ede/yr	
Iodine (10) ' ' I	Iodine 131 10043660 or 10043-66-0 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	4 mrem ede/yr	
Iodine (10) ' ' I	Iodine 133 --- NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	4 mrem ede/yr	
Iron (9) ' ' Fe ' Ancor EN 80/150 ' Carbonyl Iron ' Armco Iron	7439896 or 7439-89-6 NIOSH: NO 4565500 SAX: IGK800	Harmful (aquatic life)	---	1,000 (45) NPP	---	300 (43)	
Isophorone ' ' --- ' Isoforon ' NCI C55618 ' Isoacetophorone ' alpha- Isophorone ' 1,1,3-Trimethyl-3-Cyclohexene-5-One ' 3,5,5-Trimethyl-2-Cyclohexene-1-One ' 3,5,5-Trimethyl-2- Cyclohexone	78591 or 78-59-1 NIOSH: GW 7700000 SAX: IHO000	Carcinogen	---	---	4.38	3 (2) (29)	1,800 (2) (29)

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Lead (9) ' ' Pb ' C.I. 77575 ' C.I. Pigment Metal 4 ' Glover ' Lead Flake ' Lead 22 ' Omaha ' Omaha & Grant ' SI ' SO	7439921 or 7439-92-1 NIOSH: OF 7525000 SAX: LCF000	Toxic	13.98 @ 25 mg/L hardness (11) (12) PP	0.545 @ 25 mg/L hardness (11) (12) PP	49	15	15
Malathion ' ' --- ' Formal ' Sumitox ' Emmatos ' Celthion ' Forthion ' Malacide ' Kop-Thion ' Calmathion ' Carbethoxy ' NCI C00215 ' Carbethoxy Malathion ' SHA 057701 ' Phosphothion ' S-1,2-Bis(Ethoxycarbonyl)Ethyl-O,O-Dimethyl Thiophosphate ' O,O-Dimethyl-S-(1,2-Dicarbethoxyethyl) Dithiophosphate ' O,O-Dimethyl S-1,2-Di(Ethoxycarbonyl)Ethyl Phosphorodithioate ' Succinic Acid, mercapto-, diethyl ester, S-Ester with O,O-Dimethyl Phosphorodithioate	121755 or 121-75-5 NIOSH: WM 8400000 SAX: CBP000	Toxic	---	0.1 (45)	---	470	
Manganese (9) ' ' Mn ' Colloidal Manganese ' Magnacat ' Tronamang	7439965 or 7439-96-5 NIOSH: OO 9275000 SAX: MAP750	Harmful	---	---	---	50 (43)(49)	100 (43)(49)
MCPA ' ' 4-chloro- methylphenoxy acetic acid	94746 or 94-74-6	Toxin	---	---	---	4 HA	4
Mercury (9) ' ' Hg ' Colloidal Mercury ' Mercury, Metallic ' NCI C60399 ' Quick Silver ' RCRA Waste Number U151	7439976 or 7439-97-6 NIOSH: OV 4550000 SAX: MCW250	Toxic with BCF >300	1.4 (11) PP	0.77 (11) PP	3,760-9,000	0.05 PP	2
Mercury, Methyl	22976926 or 22976-92-6	Toxic	---	---	---	---	0.3 mg/kg
Methomyl ' ' Lannate	16752775 or 16752-77-5	Toxic	---	---	---	170 HA	200
Methyl Chloride ' ' Chloromethane ' Arctic ' Monochloromethane ' RCRA Waste Number U045	74873 or 74-87-3 NIOSH: PA 6300000 SAX: CHX500	Toxic	---	---	3.75 (used chloroform BCF) 2002 nrwqc	28 HA	30
2-Methyl-4-Chlorophenol		Harmful Organoleptic	---	---	---	1,800	

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
3-Methyl-6-Chlorophenol		Harmful Organoleptic	---	---	---	20	
Metolachlor ' ' Dual '	51218452 or 51218-45-2	Carcinogen	---	---	---	10	HA
Metribuzin ' ' Sencor '	21087649 or 21087-64-9	Toxic	---	---	---	170	HA
Mirex ' ' --- ' NCI C06428 ' Dechlorane ' Bichlorendo ' Ferriamicide ' Perchloropentacyclodecane ' Dodecachloropentacyclodecane ' Hexachlorocyclopentadiene Dimer ' Cyclopentadiene, Hexachloro-, Dimer ' Perchloropentacyclo(5.2.1.0[sup 2,6].0[sup 3,9].0[sup 5,8])Decane ' Dodecachlorooctahydro-1,3,4-Metheno-2H-Cyclobuta (c,d)Pentalene ' 1,1a,2,2,3,3a,4,5,5a,5b,6-Dodecachlorooctahydro-1,3,4- Metheno-1H-Cyclobuta(cd)Pentalene ' 1,3,4-Metheno-1H- Cyclobuta[cd]Pentalene, 1,1a,2,2,3,3a,4,5,5a,5b,6,- Dodecachlorooctahydro-	2385855 or 2385-85-5 NIOSH: PC 8225000 SAX: MQW500	Carcinogen	---	0.001 (45)	---	1	NPP
Naphthalene ' ' --- ' Mighty 150 ' NCI C52904 ' Naphthene ' White Tar ' Moth Balls ' Naphthalin ' Tar Camphor ' Caswell Number 587 ' RCRA Waste Number U165 ' EPA Pesticide Chemical Code 055801	91203 or 91-20-3 NIOSH: QJ 0525000 SAX: NAJ500	Carcinogen	---	---	10.5	10	HA
Nickel (9) ' ' Ni ' C.I. 7775 ' Ni 270 ' Nickel 270 ' Ni 0901-S ' Ni 4303T ' NP 2 ' Raney Alloy ' Raney Nickel	7440020 or 7440-02-0 NIOSH: QR 5950000 SAX: NCW500	Toxic	145 @ 25mg/L hardness (11) (12) PP	16.1 @ 25mg/L hardness (11) (12) PP	47	100 610	4,600 HA
Nitrate (as Nitrogen[N]) ' ' NO ₃	14797558 or 14797-55-8 NIOSH: --- SAX: ---	Toxic	(8)	(8)	---	10,000 (43)	--- NPP

EPA took no action on the unintentional 2017 retention of the previous nickel water+organism human health criterion (610 µg/L). The value of 100 µg/L is in effect for CWA purposes.

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Nitrite (as Nitrogen[N]) ' ' NO ₂	14797650 or 14797-65-0 NIOSH: --- SAX: ---	Toxic	(8)	(8)	---	1,000	MCL
Nitrate plus nitrite (as Nitrogen[N]) ' ' NO ₃ + NO ₂	17778880 or 17778-88-0 NIOSH: --- SAX: ---	Toxic/Harmful	(8)	(8)	---	10,000	MCL
o-Nitrophenol ' ' --- ' 2-Nitrophenol ' 2-Hydroxynitrobenzene	88755 or 88-75-5 NIOSH: SM 2100000 SAX: NIE500	Toxic	---	---	2.33	---	---
Nitrosamines	35576-91-1----	Carcinogen	---	---	---	0.0008	1.24 NPP
Nitrosodibutylamine, N	924163 or 924-16-3	Carcinogen	---	---	---	0.0063 (2) (43) NPP	0.22 (2) (43)
Nitrosodiethylamine, N	55185 or 55-18-5	Carcinogen	---	---	---	0.0008 (2) (43) NPP	1.24 (2) (43)
N-Nitrosodi-N-Propylamine ' ' --- ' DPN ' DPNA ' NDPA ' Dipropylnitrosamine ' N-Nitrosodipropylamine ' Di-n-Propylnitrosamine ' RCRA Waste Number U111 ' Dipropylamine, N-Nitroso- ' N-Nitrosodi-n-propylamine ' N-Nitroso-di-n-propylamine ' 1-Propanamine, N-Nitroso-Propyl-	621647 or 621-64-7 NIOSH: JL 9700000 SAX: DWU600	Carcinogen	---	---	1.13	0.0050 (2) (29)	0.51 (2) (29)
N-Nitrosodimethylamine ' ' Dimethylnitrosamine ' DMN ' NDMA ' DMNA ' Nitrosodimethylamine ' Dimethylnitrosoamine ' N-Nitrosodimethylamine ' RCRA Waste Number P082 ' N,N-Dimethylnitrosamine ' Methylamine, N-Nitrosodi-Dimethylamine, N-Nitroso- ' N-Methyl-N-Nitrosomethanamine ' Methamine, N-Methyl-N-Nitroso-Methanamine, N-Methyl-N-Nitroso-	62759 or 62-75-9 NIOSH: IQ 0525000 SAX: DSY400	Carcinogen	---	---	0.026	0.00069 (2) (29)	3.0 (2) (29)
						PP	

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
N-Nitrosodiphenylamine ' ' --- ' NDPA ' NDPhA ' Vultrol ' Curetard A ' NCI C02880 ' Redax ' TJP ' Retarder J ' Vulcalent A ' Vulcatard ' Vultrol ' Nitrosodiphenylamine ' Diphenylnitrosamine ' N,N-Diphenylnitrosamine ' N- Nitroso-N-Phenylaniline ' Diphenylamine, N-Nitroso- ' Benzenamine, N-Nitroso-N- Phenyl-	86306 or 86-30-6 NIOSH: JJ 9800000 SAX: DWI000	Carcinogen	---	---	136	3.3 (2) (29)	6.0(2) (29)
N-Nitrosopyrrolidine ' ' --- ' NPYR ' NO-pyr ' N-N-pyr ' 1-Nitrosopyrrolidene ' Pyrrolidine, 1-Nitroso- ' RCRA Waste Number U180 ' Tetrahydro-N- Nitrosopyrrole ' Pyrrole, Tetrahydro-N-Nitroso-	930552 or 930-55-2 NIOSH: UY 1575000 SAX: NLP500	Carcinogen	---	---	0.055	0.016 (2)	34 (2)
Nonylphenol	84852153 or 25154-52-3	Toxic	28 NPP	6.6 NPP	---	---	---
Odor (18) ' ' ---	N/A	Harmful, Narrative (18)	---	---	---	---	---
Oxamyl ' ' --- ' D-1410 ' DPX 1410 ' Insecticide-Nematicide 1410 ' Vydate ' Thioxamyl ' Methyl 2-(Dimethylamino)-N- ' Vydate L, Insecticide/Nematicide ' ({[Methylamino]Carbonyl}Oxy)-2-Oxoethanimidothioate ' 2-Dimethylamino-1-(Methylthio)Glyoxal O- Methylcarbamoylmonozime ' S-Methyl 1- Dimethylcarbamoyl)-N ({[Methylcarbamoyl}Oxy)Thioformimide ' Methyl N',N'- Dimethyl-N-({[Methylcarbamoyl}Oxy)-1-Thiooxamimide ' N',N'-Dimethyl-N-[(Methylcarbamoyl)oxy]-1- Methylthiooxamimidic Acid	23135220 or 23135-22-0 NIOSH: RP 2300000 SAX: DSP600	Toxic	---	---	---	200	MCL
Oxygen, dissolved (16) ' ' O ₂ ' Oxygen, Compressed ' Oxygen, Refrigerated Liquid	7782447 or 7782-44-7 NIOSH: RS 2060000 SAX: OQW000	Toxic	(15)	(15)	---	---	---

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Paraquat Dichloride ' ' -	1910425 or 1910-42-5	Toxic	---	---	---	30 HA	
Pentachlorobenzene ' ' --- ' QCB ' Benzene, Pentachloro- ' RCRA Waste Number U183	608935 or 608-93-5 NIOSH: DA 6640000 SAX: PAV500	Toxic with BCF >300	---	---	2,125	0.1 (29) NPP	0.1 (29)
Pentachlorophenol ' ' --- ' PCP ' Penta ' Durotox ' Weedone ' Chem-Tol ' Lautol A ' NCI C54933 ' NCI C55378 ' NCI C56655 ' Permite ' Dowcide 7 ' Permacide ' Penta-Kil ' Permagard ' Penchlorol ' Chlorophen ' Pentachlorophenol ' Pentaclorofenolo ' Thompson's Wood Fix ' Phenol, Pentachloro- ' 2,3,4,5,6-Pentachlorophenol ' 1-Hydroxy- 2,3,4,5,6-Pentachlorobenzene	87865 or 87-86-5 NIOSH: SM 6300000 SAX: PAX250	Carcinogen Organoleptic	5.3 @ pH of 6.5 (14)	4 @ pH of 6.5 (14)	11	0.03 (2) (29) PP	0.04 (2) (29)
pH (13) ' ' ---	---	Harmful	---	6.5 – 9 (45) (13)	---	5.0-9.0	---
Phenanthrene (PAH) ' ' --- ' Phenantrin	85018 or 85-01-8 NIOSH: SF 7175000 SAX: PCW250	Toxic	---	---	30	---	---
Phenol ' ' --- ' Baker's P and S Liquid and Ointment ' NCI C50124 ' Benzenol ' Monophenol ' Oxybenzene ' Phenic Acid ' Carboic Acid ' Phenylic Acid ' Hydroxybenzene ' Hydroxybenzene ' Phenyl Alcohol ' Phenyl Hydrate ' Phenylic Alcohol ' Phenyl Hydroxide ' Benzene, Hydroxy- ' Monohydroxybenzene ' RCRA Waste Number U188	108952 or 108-95-2 NIOSH: SJ 3325000 SAX: PDN750	Toxic Organoleptic	---	---	1.4	4,000 (31) PP	300,000 (31)
Phosphorus, inorganic (9) (16) ' ' --- ' Ortho-phosphorus ' phosphorus, Ortho-	14265442 or 14265-44-2 NIOSH: --- SAX: ---	Nutrient	(8)	(8)	---	---	---

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Picloram ' ' --- ' ATCP ' K-Pin ' Tordon ' Borolin ' Amdon Grazon ' NCI C00237 ' Tordon 10K ' Tordon 22K ' Tordon 101 Mixture ' 3,5,6-Trichloro-4-Aminopicolinic Acid ' 4-Amino-3,5,6-Trichloropicolinic Acid	1918021 or 1918-02-1 NIOSH: TJ 7525000 SAX: AMU250	Toxic	---	---	---	500	MCL
Prometon ' ' Pramitol '	1610180 or 1610-18-0	Toxic	---	---	---	100	HA
Pronamide ' ' Kerb '	23950585 or 23950-58-5	Carcinogen	---	---	---	5.0	HA
Propachlor ' ' Ramrod '	1918167 or 1918-16-7	Toxic	---	---	---	87	HA
Propham ' ' ---	122429 or 122-42-9	Toxic	---	---	---	100	HA
Propoxur ' ' Baygon '	114261 or 114-26-1	Carcinogen	---	---	---	14.0	HA
Pyrene (PAH) ' ' --- ' β-Pyrine ' beta-Pyrene ' Benzo(def)Phenanthrene ' Benzo[def]Phenanthrene	129000 or 129-00-0 NIOSH: UR 2450000 SAX: PON250	Toxic	---	---	30	20 (2)	30 (2) PP
Radium 226 ' ' ---	Radium 226 13982636 or 13982-63-6 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	5 picoC/liter. Note: The sum of Radium 226 and 228. MCL	
Radium 228 ' ' ---	Radium 228 15262201 or 15262-20-1 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	5 picoC/liter. Note: The sum of Radium 226 and 228. MCL	
Radon 222 ' ' ---	14859677 or 14859-67-7 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	15 picoC/liter HA	

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Sediment, settleable solids, oils, grease, or floating solids ' ' --- ' Methylene Blue Active Substances, ' Residue, non- filterable, ' Residue, non-settleable, ' Settleable matter, ' Oil & Grease, ' Total Organic Carbon, ' Hydrocarbons	N/A	Harmful, Narrative (18)	--- (24)	--- (24)	---	---	---
Selenium (9) ' ' Se ' C.I. 77805 ' Colloidal Selenium ' Elemental Selenium ' Selenium Alloy ' Selenium Base ' Selenium Dust ' Selenium Elemental ' Selenium Homopolymer ' Selenium Metal Powder, Non-Pyrophoric ' Vandex	7782492 or 7782-49-2 NIOSH: VS 7700000 VS 8310000, colloidal SAX: SBO500 SAX: SBP000, colloidal	Toxic	20 PP	5 PP	4.8	50 MCL	4,200
Silver (9) ' ' Ag ' Argentum ' C.I. 77820 ' Shell Silver ' Silver Atom	7440224 or 7440-22-4 NIOSH: VW 3500000 SAX: SDI500	Toxic	0.374 @ 25 mg/L Hardness (11) (12) PP	---	0.5	100 HA	
Simazine ' ' --- ' CDT ' Herbex ' Framed ' Bitemol ' Radokor ' A 2079 ' Batazina ' Cat (Herbicide) ' CET ' G 27692 ' Geigy 27,692 ' Gesaran ' Gesatop 50 ' Simazine 80W ' Symazine ' Taphazine ' W 6658 ' Zeapur ' Princep ' Aquazine ' Herbazin ' Tafazine ' 2,4-bis(Ethylamino)- 6-Chloro-s-Triazine ' 1-Chloro, 3,5-Bisethylamino-2,4,6-Triazine ' 2-Chloro- 4,6-Bis(Ethylamino)-1,3,5-Triazine ' 6-Chloro-N,N'-Diethyl- 1,3,5-Triazine-2,4-Diylidiamine	122349 or 122-34-9 NIOSH: XY 5250000 SAX: BJP000	Carcinogen	---	---	---	4 MCL	
Strontium 89 (10) ' ' ---	14158271 or 14158-27-1 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	4 mrem ede/yr.	
Strontium 90 (10) ' ' ---	10098972 or 10098-97-2 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	4 mrem ede/yr.	

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Styrene ' ' --- ' Styrol ' Cinnamol ' Cinnamene ' Cinnamenol ' NCI C02200 ' Styrole ' Strolene ' Styron ' Stropor ' Vinylbenzol ' Phenethylene ' Phenylethene ' Vinylbenzene ' Ethenylbenzene ' Phenylethylene ' Benzene, Vinyl- ' Stryene, Monomer	100425 or 100-42-5 NIOSH: WL 3675000 SAX: SMQ000	Carcinogen	---	---	---	100	
						MCL	
Sulfate ' ' SO ₄	14808798 or 14808-79-8 NIOSH: --- SAX: SNS000	Narrative (18)	---	---	---	---	
Tebuthiuron ' ' ' Spike	34014181 or 34014-18-1	Toxic	---	---	---	500	
						HA	
Temperature (13) ' ' ---	---	Harmful	---	---	---	---	
			(13)	(13)			
Terbacil ' ' Sinbar '	5902-51-1	Toxic	---	---	---	83	
						HA	
1,2,4,5-Tetrachlorobenzene ' ' --- ' RCRA Waste Number U207 ' Tetrachlorobenzene, 1,2,4,5- ' Benzene, 1,2,4,5-Tetrachloro-	95943 or 95-94-3 NIOSH: DB 9450000 SAX: TBN750	Toxic with BCF >300	---	---	1,125	0.03 (29)	0.03 (29)
						NPP	
1,1,2,2-Tetrachloroethane ' ' --- ' TCE ' Cellon ' Westron ' Bonoform ' Tetrachloroethane ' sym-Tetrachloroethane ' RCRA Waste Number U209 ' Acetylene Tetrachloride ' Tetrachloroethane, 1,1,2,2- ' Ethane, 1,1,2,2-Tetrachloro- ' 1,1-Dichloro-2,2-Dichloroethane	79345 or 79-34-5 NIOSH: KI 8575000 SAX: ACK500	Carcinogen	---	---	5	0.2 (29)	3 (29)
						PP	
2,3,4,6-Tetrachlorophenol	--	Harmful Organoleptic	---	---	---	1	1
Thallium (9) ' ' Tl ' Ramor	7440280 or 7440-28-0 NIOSH: XG 3425000 SAX: TEI000	Toxic	---	---	119	0.24 (46)	0.47
						PP	

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Toluene ' ' --- ' Antisal 1a ' NCI C07272 ' Toluol ' Tolu-Sol ' Methacide ' Methylbenzol ' Methylbenzene ' Phenylmethane ' Phenyl-Methane ' Methyl-Benzene ' Benzene, Methyl ' RCRA Waste Number U220	108883 or 108-88-3 NIOSH: XS 5250000 SAX: TGK750	Toxic	---	---	10.7	57 (46)	520
Total dissolved solids (16) ' ' TDS ' Solids, total dissolved	Multiple	Narrative (18)	---	---	---	250,000	
Toxaphene ' ' --- ' Attac 4-2 ' Alltox ' Alltex ' Attac 6 ' Toxakil ' Agricide ' Chem-Phene ' Clor Chem T-590 ' Compound 3956 ' Crestoxo ' Estonox ' Geniphene ' Gy-Phene ' Hercules 3956 ' Melipax ' Motox ' PCC ' Phenacide ' Phenatox ' Toxadust ' Camphechlor ' Maggot Killer (F) ' Toxaphene mixture ' Chlorinated-Camphene ' Camphene, Octachloro- ' RCRA Waste Number P123	8001352 or 8001-35-2 NIOSH: XW 5250000 SAX: THH750	Carcinogen	0.73	0.0002 (44)	13,100	0.00070 (2) (29)	0.00071 (2) (29)
Tributyltin TBT	--- 56573-85-4	Toxic	0.46 NPP	0.072 NPP	---	---	
1,1,2-Trichloroethane ' ' --- ' β-T ' Vinyl Trichloride ' Ethane Trichloride ' beta-Trichloroethane ' 1,2,2-Trichloroethane ' RCRA Waste Number U227 ' Trichloroethane, 1,1,2- ' NCI C04579 ' Ethane, 1,1,2-Trichloro- ' Caswell Number 875A [NLM] ' EPA Pesticide Chemical Code 081203 [NLM]	79005 or 79-00-5 NIOSH: KJ 3150000 SAX: TIN000	Carcinogen	---	---	4.5	0.55 (2) (29)	8.9 (2) (29)
						MCL	

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Trichloroethylene ' ' --- ' TCE ' Triad ' Vitran ' Algylen ' Dow-Tri ' Lanadin ' Vestrol ' Anamenth ' Benzinol ' Tri-Plus ' Tri-Clene ' Trichlorethene ' Trichloroethene ' Trichloroethane ' Trichlorethylene ' Tetrachloroethene ' Ethene, Trichloro- ' Ethylene Trichloride ' Ethylene, Trichloro- ' Acetylene Trichloride ' 1,1,2-Trichloroethylene ' 1,2,2- Trichloroethylene ' 1-Chloro-2,2-Dichloroethylene ' 1,1- Dichloro-2-Chloroethylene	79016 or 79-01-6 NIOSH: KX 4550000 SAX: TIO750	Carcinogen	---	---	10.6	0.6 (2)	30 (2)
Trichlorofluoromethane (HM) ' ' --- ' F 11 ' FC 11 ' Freon 11 ' Arcton 9 ' Eskimon 11 ' Halocarbon 11 ' Algofrene Type 1 ' RCRA Waste Number U121 ' Fluorocarbon Number 11 ' NCI C04637 ' Isotron 11 ' Fluorotrichloromethane ' Isceon 131 ' Monofluorotrichloromethane ' Ucon Refrigerant 11 ' Trichloromonofluoromethane	75694 or 75-69-4 NIOSH: PB 6125000 SAX: TIP500	Toxic	---	---	3.75		2,000 HA 10,000
Trichlorophenoxyacetic Acid ' ' Brush-Rhap ' 2,4,5 - T (Brush-Rhap)	93765 or 93-76-5	Toxic	---	---	---		70 HA
Trihalomethanes, total ' ' --- ' THMs	Multiple	Carcinogen	---	---	---		80 MCL
Tritium (10) ' ' H ³	10028178 or 10028-17-8 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---		4 mrem ede/yr
Turbidity (18) (16) ' ' ---	---	Harmful, Narrative (18)	---	---	---		---
Uranium, natural ' ' U ' Uranium Metal, Pyrophoric	7440611 or 7440-61-1 NIOSH: YR 3490000 SAX: UNS000	Carcinogen / Radioactive	---	---	---		30 MCL

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers (25) (26) (27)	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5) (29)	Human Health Standards (17)	
			Acute (3) (µg/L)	Chronic (4) (µg/L)		Water + Organism (µg/L)	Organism Only (µg/L)
Vinyl Chloride ' ' --- ' VC ' VCM ' Chlorethene ' Chloroethene ' Chlorethylene ' Chloroethylene ' Ethylene, Chloro- ' Monochloroethylene ' Ethylene Monochloride ' RCRA Waste Number U043 ' Vinyl Chloride Monomer ' Vinyl C Monomer ' Trovidur	75014 or 75-01-4 NIOSH: KU 9625000 SAX: VNP000	Carcinogen	---	---	1.17	0.022 (2) (46)	1.6 (2)
Xylenes ' ' --- ' Xylol ' Violet 3 ' Mixed Xylenes ' Methyl Toluene ' Dimethylbenzene ' RCRA Waste Number U239 ' NCI C55232 ' Total equals the sum of meta, ortho, and para.	1330207 or 1330-20-7 NIOSH: ZE 2100000 SAX: XGS000	Toxic	---	---	1.17	10,000	
m-Xylene ' ' --- ' m-Xylol ' 1,3-Xylene ' meta-Xylene ' m- Dimethylbenzene ' m-Methyltoluene ' 1,3-Dimethylbenzene ' 1,3-Dimethyl Benzene	108383 or 108-38-3 NIOSH: ZE 2275000 SAX: XHA000	Toxic	---	---	---	10,000	
o-Xylene ' ' --- ' o-Xylol ' 1,2-Xylene ' ortho-Xylene ' o- Methyltoluene ' o-Dimethylbenzene ' 1,2-Dimethylbenzene ' 1,2-Dimethyl Benzene	95476 or 95-47-6 NIOSH: ZE 2450000 SAX: XHJ000	Toxic	---	---	1.17	10,000	---
p-Xylene ' ' --- ' p-Xylol ' Chromar ' Scintillar ' 1,4-Xylene ' para- Xylene ' p-Methyltoluene ' p-Dimethylbenzene ' 1,4-Dimethylbenzene ' 1,4- Dimethyl Benzene	106423 or 106-42-3 NIOSH: ZE 2625000 SAX: XHS000	Toxic	---	---	1.17	10,000	---
Zinc (9) ' ' Zn ' Blue Powder ' C.I. 77945 ' C.I. Pigment Black 16 ' C.I. Pigment Metal 6 ' Emanay Zinc Dust ' Granular Zinc ' Jasad ' Merrillite ' Pasco ' Zinc, Powder or Dust, non-Pyrophoric ' Zinc, Powder or Dust, Pyrophoric	7440666 or 7440-66-6 NIOSH: ZG 8600000 SAX: ZBJ000	Toxic Organoleptic	37 @25mg/L hardness (11) (12) PP	37 @25mg/L hardness (11) (12) PP	47	7,400	26,000 PP 5,000

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DETAILED NOTES OF EXPLANATION

Frequently used Acronyms:

' ' abc...	Name of Primary Synonym as listed in the EPA's IRIS database.
' abc...	Name of Additional Synonyms from various sources including IRIS.
BCF	Bio-concentration Factor.
CFR	Code of Federal Regulations.
EDE/YR	Effective dose equivalent per year.
E.P.A.	Environmental Protection Agency.
pH	The negative log of the concentration of Hydrogen ions: $\text{pH} = -\log [\text{H}^+]$. A factor in the formula for determining ammonia Standards for Freshwater Aquatic Life.
T	A factor in the formula for determining ammonia Standards for Freshwater Aquatic Life.
HA	health advisory from EPA's "Drinking Water Standards and Health Advisories" (October 1996)
HM	Halomethanes.
I	standard derived from data obtained from federal data sources available on the Internet
MCL	maximum contaminate level from the drinking water regulations
MCLG	Maximum Contaminant Level Goal from the drinking water regulations
MDL	Method Detection Limit. The MDL is calculated from the standard deviation of replicate measurements, and is defined as the minimum concentration of a substance that can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero.
MREM	Milli Roentgen-Equivalent-Man.
N/A	Not applicable.
n.d.	Not determined.
NPP	non-priority pollutant criteria
NRWQC	National Recommended Water Quality Criteria
NTU	Nephelometric Turbidity Unit.
PAH	Polynuclear Aromatic Hydrocarbons.
PCB	Polychlorinated Biphenyls.
PP	priority pollutant criteria

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DETAILED NOTES OF EXPLANATION

SMCL secondary maximum contaminate level

TAN total ammonia nitrogen

- (1) Categories include toxic, carcinogen, and harmful. Parameters categorized as toxic and carcinogenic are based on EPA's Integrated Risk Information System (IRIS) database. Parameters categorized by the Department as harmful include biological agents (such as *E. coli*), parameters that cause taste and/or odor effects (such as MTBE), and parameters that generate physical effects (such as iron).
- (2) Chemicals classified by EPA as carcinogens for an oral route of exposure in the drinking water regulations and health advisories (EPA 822-B-96-002 and EPA 820-R-11-002) and those listed as carcinogens in the EPA priority pollutants list. In 2005, the EPA added a new scale to describe carcinogens and both the 1986 and 2005 scales are now in simultaneous use. The classifications considered carcinogenic in the 1986 scale are as follows: A (human carcinogen); B1 or B2 (probable human carcinogens); and C (possible human carcinogen). In the 2005 scale, the following categories are considered carcinogens: H (human carcinogen); L (likely carcinogen); L/N (likely to be carcinogenic above a specified dose); and S (suggestive evidence of carcinogenic potential).
- (3) The one-hour average concentration of these parameters in surface waters may not exceed these values more than once in any three-year period, on average, with the exception of silver, which, at present, is interpreted as a "not to exceed" value unless otherwise stated.
- (4) The 96-hour average concentration of these parameters in surface waters may not exceed these values more than once in any three-year period, on average unless otherwise stated.
- (5) All bioconcentration factors (BCF's) were developed by the EPA as part of the Standards development as mandated by Section 304(a) of the Federal Clean Water Act. National Recommended Water Quality Criteria: 2002 Human Health Criteria Calculation Matrix (EPA-822-R-02-012).
- (6) The aluminum criteria are expressed as total recoverable metal in the water column. The 87 ug/l chronic criterion for aluminum is based on information showing chronic effects on Brook Trout and Striped Bass. The studies underlying the 87 ug/l chronic value, however, were conducted at low pH (6.5 - 6.6) and low hardness (< 10 ppm CaCO₃), conditions uncommon in Fort Peck Reservation's surface waters. Considering the available toxicological information in Tables 1 and 2 of EPA's Aluminum Criteria Document (EPA 440/5-86-008), the FPWQCT will implement the 87 ug/l chronic criterion for aluminum as follows: where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as CaCO₃ in the receiving water after mixing, the 87 ug/l chronic criterion will not apply, and aluminum will be regulated based on compliance with the 750 ug/l acute aluminum criterion. In situations where the 87 ug/l chronic criterion applies, a discharger may request the development of a site-specific chronic criterion based on a water effect ratio or another scientifically defensible method. In either case, the Department may require that the discharger requesting the change provide the technical information and data needed to support such a change.
- (7) Freshwater Aquatic Life Criteria for total ammonia nitrogen (TAN)

FPWQCT DETAILED NOTES OF EXPLANATION

Magnitude, Frequency, Duration (mg TAN/L) pH 7.0, T=20°C	
Acute (1-hr average)	17
Chronic (30-d rolling average)	1.9*

*Not to exceed 2.5 times CCC or 4.8 mg TAN/L (at pH 7, 20°C) as a 4-day average within the 30-days, more than once in three years on average.

Criteria frequency: Not to be exceeded more than once in three years on average.

Acute criterion calculations

The one-hour average concentration of total ammonia nitrogen (in mg TAN/L) is not to exceed, more than once every three years on the average, the CMC (acute criterion magnitude) calculated using the following equation:

$$CMC = MIN\left(\frac{0.275}{1 + 10^{7.204-pH}} + \frac{39}{1 + 10^{pH-7.204}}\right),$$

$$(0.7249 * \left(\frac{0.0114}{1 + 10^{7.204-pH}} + \frac{1.6181}{1 + 10^{pH-7.204}}\right) * (23.12 * 10^{0.036*(20-T)}))$$

Where salmonids in the genus *Oncorhynchus* are present, the acute criterion magnitude for TAN/L at pH 7.0 is calculated using the following equation and Table 7.1:

$$CMC(at\ pH\ 7) = MIN(24.1, (0.7249 * (23.12 * 10^{0.036*(20-T)}))$$

Where *Oncorhynchus* species are absent, the acute criterion magnitude for TAN/L at pH 7.0 is calculated using the following equation and Table 7.2:

$$CMC(at\ pH\ 7) = 0.7249 * MIN(51.93, (23.12 * 10^{0.036*(20-T)}))$$

The CMC, where *Oncorhynchus* species are absent, extrapolated across both temperature and pH is as follows:

$$CMC = 0.7249 * \left(\frac{0.0114}{1 + 10^{7.204-pH}} + \frac{1.6181}{1 + 10^{pH-7.204}}\right) * MIN(51.93, 23.12 * 10^{0.036*(20-T)})$$

When a threatened or endangered species occurs at a site and sufficient data indicate that it is sensitive at 1-hour average concentrations below the CMC, it is appropriate to consider deriving a site-specific criterion magnitude.

Chronic criterion calculations

FPWQCT DETAILED NOTES OF EXPLANATION

The thirty-day rolling average concentration of total ammonia nitrogen (in mg TAN/L) is not to exceed, more than once every three years on the average, the chronic criterion magnitude (CCC) calculated using the following equation and Table 7.3:

$$CMC = 0.7249 * \left(\frac{0.0114}{1 + 10^{7.204 - pH}} + \frac{1.6181}{1 + 10^{pH - 7.204}} \right) * MIN(51.93, 23.12 * 10^{0.036 * (20 - T)})$$

In addition, the highest four-day average within the 30-day averaging period should not be more than 2.5 times the CCC (e.g., 2.5 x 1.9 mg TAN/L at pH 7 and 20°C or 4.8 mg TAN/L) more than once in three years on average. Where a threatened or endangered species occurs at a site and sufficient data indicate that it is sensitive at concentrations below the CCC, it is appropriate to consider deriving a site-specific criterion magnitude.

FPWQCT
DETAILED NOTES OF EXPLANATION

Table 7.1. Temperature and pH-Dependent Values of the CMC (Acute Criterion Magnitude; mg TAN / L) – *Oncorhynchus* spp. Present.

pH	Temperature (°C)																
	0-14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	33	33	32	29	27	25	23	21	19	18	16	15	14	13	12	11	9.9
6.6	31	31	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9.5
6.7	30	30	29	27	24	22	21	19	18	16	15	14	13	12	11	9.8	9
6.8	28	28	27	25	23	21	20	18	17	15	14	13	12	11	10	9.2	8.5
6.9	26	26	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9
7	24	24	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	8	7.3
7.1	22	22	21	20	18	17	15	14	13	12	11	10	9.3	8.5	7.9	7.2	6.7
7.2	20	20	19	18	16	15	14	13	12	11	9.8	9.1	8.3	7.7	7.1	6.5	6
7.3	18	18	17	16	14	13	12	11	10	9.5	8.7	8	7.4	6.8	6.3	5.8	5.3
7.4	15	15	15	14	13	12	11	9.8	9	8.3	7.7	7	6.5	6	5.5	5.1	4.7
7.5	13	13	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4
7.6	11	11	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5
7.7	9.6	9.6	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	3
7.8	8.1	8.1	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4	3.7	3.4	3.2	2.9	2.7	2.5
7.9	6.8	6.8	6.6	6	5.6	5.1	4.7	4.3	4	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1
8	5.6	5.6	5.4	5	4.6	4.2	3.9	3.6	3.3	3	2.8	2.6	2.4	2.2	2	1.9	1.7
8.1	4.6	4.6	4.5	4.1	3.8	3.5	3.2	3	2.7	2.5	2.3	2.1	2	1.8	1.7	1.5	1.4
8.2	3.8	3.8	3.7	3.5	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
e	3.1	3.1	3.1	2.8	2.6	2.4	2.2	2	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1	0.96
8.4	2.6	2.6	2.5	2.3	2.1	2	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1	0.93	0.86	0.79
8.5	2.1	2.1	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	0.98	0.9	0.83	0.77	0.71	0.65
8.6	1.8	1.8	1.7	1.6	1.5	1.3	1.2	1.1	1	0.96	0.88	0.81	0.75	0.69	0.63	0.59	0.54
8.7	1.5	1.5	1.4	1.3	1.2	1.1	1	0.94	0.87	0.8	0.74	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.2	1.2	1.2	1.1	1	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1	1	1	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.4	0.37	0.34	0.32
9	0.88	0.88	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

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Table 7.2. Temperature and pH-Dependent Values of the CMC (Acute Criterion Magnitude; mg TAN / L) – *Oncorhynchus spp.* Absent.

pH	Temperature (°C)																				
	0-10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	51	48	44	41	37	34	32	29	27	25	23	21	19	18	16	15	14	13	12	11	9.9
6.6	49	46	42	39	36	33	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9.5
6.7	46	44	40	37	34	31	29	27	24	22	21	19	18	16	15	14	13	12	11	9.8	9
6.8	44	41	38	35	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.2	8.5
6.9	41	38	35	32	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9
7	38	35	33	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9	7.3
7.1	34	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.3	8.5	7.9	7.2	6.7
7.2	31	29	27	25	23	21	19	18	16	15	14	13	12	11	9.8	9.1	8.3	7.7	7.1	6.5	6
7.3	27	26	24	22	20	18	17	16	14	13	12	11	10	9.5	8.7	8	7.4	6.8	6.3	5.8	5.3
7.4	24	22	21	19	18	16	15	14	13	12	11	9.8	9	8.3	7.7	7	6.5	6	5.5	5.1	4.7
7.5	21	19	18	17	15	14	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4
7.6	18	17	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5
7.7	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	2.9
7.8	13	12	11	10	9.3	8.5	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4	3.7	3.4	3.2	2.9	2.7	2.5
7.9	11	9.9	9.1	8.4	7.7	7.1	6.6	3	5.6	5.1	4.7	4.3	4	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1
8	8.8	8.2	7.6	7	6.4	5.9	5.4	5	4.6	4.2	3.9	3.6	3.3	3	2.8	2.6	2.4	2.2	2	1.9	1.7
8.1	7.2	6.8	6.3	5.8	5.3	4.9	4.5	4.1	3.8	3.5	3.2	3	2.7	2.5	2.3	2.1	2	1.8	1.7	1.5	1.4
8.2	6	5.6	5.2	4.8	4.4	4	3.7	3.4	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
8.3	4.9	4.6	4.3	3.9	3.6	3.3	3.1	2.8	2.6	2.4	2.2	2	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1	0.96
8.4	4.1	3.8	3.5	3.2	3	2.7	2.5	2.3	2.1	2	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1	0.93	0.86	0.79
8.5	3.3	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	0.98	0.9	0.83	0.77	0.71	0.65
8.6	2.8	2.6	2.4	2.2	2	1.9	1.7	1.6	1.5	1.3	1.2	1.1	1	0.96	0.88	0.81	0.75	0.69	0.63	0.58	0.54
8.7	2.3	2.2	2	1.8	1.7	1.6	1.4	1.3	1.2	1.1	1	0.94	0.87	0.8	0.74	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1.6	1.5	1.4	1.3	1.2	1.1	1	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.4	0.37	0.34	0.32
9	1.4	1.3	1.2	1.1	1	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

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Table 7.3. Temperature and pH-Dependent Values of the CCC (Chronic Criterion Magnitude; mg TAN / L).

pH	Temperature (°C)																							
	0-7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	4.9	4.6	4.3	4.1	3.8	3.6	3.3	3.1	2.9	2.8	2.6	2.4	2.3	2.1	2	1.9	1.8	1.6	1.5	1.5	1.4	1.3	1.2	1.1
6.6	4.8	4.5	4.3	4	3.8	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1
6.7	4.8	4.5	4.2	3.9	3.7	3.5	3.2	3	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1
6.8	4.6	4.4	4.1	3.8	3.6	3.4	3.2	3	2.8	2.6	2.4	2.3	2.1	2	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1
6.9	4.5	4.2	4	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1
7	4.4	4.1	3.8	3.6	3.4	3.2	3	2.8	2.6	2.4	2.3	2.2	2	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	0.99
7.1	4.2	3.9	3.7	3.5	3.2	3	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1	0.95
7.2	4	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1	0.96	0.9
7.3	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.4	2.2	2.1	2	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1	0.97	0.91	0.85
7.4	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1	0.96	0.9	0.85	0.79
7.5	3.2	3	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1	0.95	0.89	0.83	0.78	0.73
7.6	2.9	2.8	2.6	2.4	2.3	2.1	2	1.9	1.8	1.6	1.5	1.4	1.4	1.3	1.2	1.1	1.1	0.98	0.92	0.86	0.81	0.76	0.71	0.67
7.7	2.6	2.4	2.3	2.2	2	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.6
7.8	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53
7.9	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53	0.5	0.47
8	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.6	0.56	0.53	0.5	0.44	0.44	0.41
8.1	1.5	1.5	1.4	1.3	1.2	1.1	1.1	0.99	0.92	0.87	0.81	0.76	0.71	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.4	0.38	0.35
8.2	1.3	1.2	1.2	1.1	1	0.96	0.9	0.84	0.79	0.74	0.7	0.65	0.61	0.57	0.54	0.5	0.47	0.44	0.42	0.39	0.37	0.34	0.32	0.3
8.3	1.1	1.1	0.99	0.93	0.87	0.82	0.76	0.72	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.4	0.38	0.35	0.33	0.31	0.29	0.27	0.26
8.4	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53	0.5	0.47	0.44	0.41	0.39	0.36	0.34	0.32	0.3	0.28	0.26	0.25	0.23	0.22
8.5	0.8	0.75	0.71	0.67	0.62	0.58	0.55	0.51	0.48	0.45	0.42	0.4	0.37	0.35	0.33	0.31	0.29	0.27	0.25	0.24	0.22	0.21	0.2	0.18
8.6	0.68	0.64	0.6	0.56	0.53	0.49	0.46	0.43	0.41	0.38	0.36	0.33	0.31	0.29	0.28	0.26	0.24	0.23	0.21	0.2	0.19	0.18	0.16	0.15
8.7	0.57	0.54	0.51	0.47	0.44	0.42	0.39	0.37	0.34	0.32	0.3	0.28	0.27	0.25	0.23	0.22	0.21	0.19	0.18	0.17	0.16	0.15	0.14	0.13
8.8	0.49	0.46	0.43	0.4	0.38	0.35	0.33	0.31	0.29	0.27	0.26	0.24	0.23	0.21	0.2	0.19	0.17	0.16	0.15	0.14	0.13	0.13	0.12	0.11
8.9	0.42	0.39	0.37	0.34	0.32	0.3	0.28	0.27	0.25	0.23	0.22	0.21	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.12	0.11	0.1	0.09
9	0.36	0.34	0.32	0.3	0.28	0.26	0.24	0.23	0.21	0.2	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.11	0.1	0.09	0.09	0.08

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- (8) A plant nutrient, excessive amounts of which may cause undesirable aquatic life.
- (9) Approved methods of sample preservation, collection, and analysis for determining compliance with the standards set forth in FPWQCT are found in:
- 1) 40 CFR Part 136 "Guidelines Establishing Test Procedures for the Analysis of Pollutants", July 1, 1992, and;
 - 2) The EPA Methods for the Determination of Metals in Environmental Samples, EPA/600 4-91/010, dated June 1991, or equivalent, as determined by the Department.
- (10) Radionuclides consisting of alpha emitters, beta emitters, and gamma emitters are classified as carcinogens. "Alpha emitters" means the total radioactivity due to alpha particle emission. "Beta emitters" means the total radioactivity due to beta particle emission. "Gamma emitters" means the total radioactivity due to gamma particle emission. The emitters covered under this Standard include but are not limited to: Cesium, radioactive Iodine, radioactive Strontium-89 and -90, radioactive Tritium Gamma photon emitters.
- (11) Freshwater aquatic life use criteria for metals are expressed in terms of the dissolved metal in the water column except aluminum, which is for the total fraction. Criteria for assessment of the dissolved fractions of metals are derived using the conversion factors in Table 11.1.

Table 11.1. Conversion Factors for Dissolved Metals

Metal	Freshwater CMC	Freshwater CCC
Arsenic	1	1
Cadmium	$1.136672 - [(\ln \text{ hardness})(0.041838)]$	$1.101672 - [(\ln \text{ hardness})(0.041838)]$
Chromium III	0.316	0.86
Chromium VI	0.982	0.962
Copper	0.96	0.96
Lead	$1.46203 - [(\ln \text{ hardness})(0.145712)]$	$1.46203 - [(\ln \text{ hardness})(0.145712)]$
Mercury	0.85	0.85
Nickel	0.998	0.997
Selenium	—	—
Silver	0.85	—
Zinc	0.978	0.986

CMC: Criterion Maximum Concentration (acute)

CCC: Criterion Continuous Concentration (chronic)

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- (12) Freshwater aquatic life criteria for these metals are expressed as a function of total hardness (mg/L, CaCO₃). The values displayed in the chart correspond to a total hardness of 25 mg/L. The hardness relationship is as follows:

	Acute= $\exp.\{ma[\ln(\text{hardness})] + ba\}$		Chronic= $\exp.\{mc[\ln(\text{hardness})] + bc\}$	
	ma	ba	mc	bc
Cadmium	0.9789	-3.866	0.7977	-3.909
Chromium (III)	0.819	3.7256	0.819	0.6848
Lead	1.273	-1.46	1.273	-4.705
Nickel	0.846	2.255	0.846	0.0584
Silver	1.72	-6.59	-	-
Zinc	0.8473	0.884	0.8473	0.884

Note: If the hardness is <25 mg/L as CaCO₃, the number 25 must be used in the calculation. If the hardness is greater than or equal to 400 mg/L as CaCO₃, 400 mg/L must be used in the calculation.

- (13) Refer to the Physical and Biological Criteria Table C-1 in Appendix C for additional information on pH, temperature, and *E. coli*.
- (14) Freshwater aquatic life criterion for pentachlorophenol is dependent on pH. Values displayed in the chart correspond to a pH of 6.5 and are calculated as follows:

$$\text{Acute} = \exp[1.005(\text{pH}) - 4.869] \quad \text{Chronic} = \exp[1.005(\text{pH}) - 5.134]$$

- (15) Freshwater aquatic life criteria for dissolved oxygen in milligrams per liter are as follows:

	Criteria for Waters Classified		Criteria for Waters Classified	
	Cool Water Aquatic Life		Warm Water Aquatic Life	
	Early Life Stages ^{1,2}	Other Life Stages	Early Life Stages ²	Other Life Stages
30 Day Mean	N/A ³	6.5	N/A ³	5.5
7 Day Mean	9.5 (6.5)	N/A ³	6.0	N/A ³
7 Day Mean Minimum	N/A ³	5.0	N/A ³	4.0
1 Day Minimum ⁴	8.0 (5.0)	4.0	5.0	3.0

¹ These are water column concentrations recommended to achieve the required inter-gravel dissolved oxygen concentrations shown in parentheses. For species that have early life stages exposed directly to the water column, the figures in parentheses apply.

² Includes all embryonic and larval stages and all juvenile forms of fish to 30-days following hatching.

³ N/A (Not Applicable).

⁴ All minima should be considered as instantaneous concentrations to be achieved at all times.

- (16) Aquatic Life Standards apply to surface waters only.
- (17) The Human Health Criteria apply to all waters with a public water supply and/or an aquatic life use. For surface waters, the Standard is the more restrictive of either the Aquatic Life Standard or the Human Health Standard. The water+organism criteria apply to surface waters with both a water supply and aquatic life use. The organism only criteria apply to surface waters with only an aquatic life use. Sources for the human health criteria include Priority Pollutant Criteria, Maximum Contaminant Levels for Drinking Water, Secondary Maximum Contaminant Levels, Health Advisories from EPA's Drinking Water Standards & Health Advisories (Oct 1996) and National Recommended Water Quality Criteria.

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Source of the criteria used to derive the standard:

PP = priority pollutant criteria

NPP = non-priority pollutant criteria

MCL = maximum contaminate level from the drinking water regulations

SMCL = secondary maximum contaminate level

HA = health advisory all from EPA's "Drinking Water Standards and Health Advisories" (October 1996)

I = standard derived from data obtained from federal data sources available on the Internet

NRWQC = National Recommended Water Quality Criteria

- (18) The Narrative Standards are located in the Water Quality Standards, Narrative Criteria Section V.
- (19) Reserved
- (20) Reserved.
- (21) Based on taste & Odor threshold guide in EPA 822-f-97-008, Dec 1997.
- (22) Reserved
- (23) Reserved
- (24) Settleable and suspended solids should not reduce the depth of the compensation point for photosynthetic activity (where photosynthesis and cellular respiration balance the absorption and release of carbon dioxide) by more than 10 percent from the seasonally established norm for aquatic life.
- (25) CASRN is an acronym for the American Chemical Society's Chemical Abstracts Service Registry Number.
- (26) NIOSH RTECS number is a unique number used for accession to the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances.
- (27) SAX number in the format AAA123 is a unique number for identification of materials in the Dangerous Properties of Industrial Materials, authors N. Irving Sax and Richard J. Lewis, publisher Van Nostrand Reinhold.
- (28) Calculation of an equivalent concentration of 2,3,7,8-TCDD is to be based on congeners of CDDs/CDFs and the toxicity equivalency factors (I-TEEs/89) in Table 2 part II, A Interim Procedures of Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenz-p-Dioxins and -Dibenzofurans (CDDs and CDFs) and 1989 Update, EPA/625/3-89/016, March 1989. The analysis method to be used is EPA Method 1613, Revision B, Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, 40 CFR 136.3 (1 July 1988 Edition).
- (29) The criterion has been revised to reflect the EPA q1* or Rfd. The IRIS values as of May 17, 2002, are represented. IRIS information is presented in some cases even though it may not be used to calculate criteria. (45FR793457) (EPA-822-B-00-004, October 2000).
- (30) 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
- (31) National Recommended Water Quality Criteria. 2006.

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DETAILED NOTES OF EXPLANATION

- (32) Reserved
- (33) BaP bioconcentration factor used. BaP is moderately persistent in the environment, bioaccumulates within aquatic organisms that cannot metabolize it.
- (34) Reserved
- (35) EPA updated the human health ambient water quality criteria (AWQC) for carcinogenic effects (at a 10^{-6} cancer risk level) for benzene are 0.58–2.1 $\mu\text{g/L}$ for consumption of water and organisms and 16–58 $\mu\text{g/L}$ for consumption of organisms only (EPA 820-R-15-009). EPA recommends the lower AWQC, based on the carcinogenic effects of benzene, as the updated human health AWQC.
- (36) Reserved.
- (37) This criterion applies to total PCBs,(e.g., the sum of all congener or all isomer or homolog or Aroclor analyses.)
- (38) This criterion was revised to reflect the fish tissue bio-concentration factor. The cancer slope factor or reference dose contained in the I.R.I.S as of (Final FRNotice June 10, 2009)
- (39) Reserved.
- (40) Reserved.
- (41) This criterion is based on the MCL issued by EPA. Refer to drinking water regulations (40 CFR 141) or Safe Drinking Water Hotline (1-800-426-4791) for details on the derivation of these values.
- (42) This recommended water quality criterion was derived from data for arsenic (III) but is applied here to total arsenic, which implies that arsenic (III) and arsenic (V) are equally toxic to aquatic life and that their toxicities are additive. 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 SMAV, 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.
- (43) The human health criterion is the same as originally published in the Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value is now published in the Gold Book.
- (44) This Criterion is based on 304(a) aquatic life criterion issued in 1980 and, or 1986, were issued in one of the following documents: Aldrin/Dieldrin (PDF) (153 pp., 7.3 MB) (EPA 440/5-80-019), Chlordane (PDF) (68 pp., 3.1 MB) (EPA 440/5-80-027), DDT (PDF) (175 pp., 8.3 MB) (EPA 440/5-80-038), Endosulfan (PDF) (155 pp., 7.3 MB) (EPA 440/5-80-046), Endrin (PDF) (103 pp., 4.6 MB) (EPA 440/5-80-047), Heptachlor (PDF) (114 pp., 5.4 MB) (EPA 440/5-80-052), Hexachlorocyclohexane (PDF) (109 pp., 4.8 MB) (EPA 440/5-80-054), Silver (EPA 440/5-80-071). The minimum requirements and derivation procedures were different in the 1980 Guidelines than in the 1985 Guidelines (PDF) (104 pp., 3.3 MB). For example, a "CMC" derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. If an assessment is done using an averaging period, the values given are divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines..
- (45) This value was derived as presented in the Red Book. (EPA/9-76-023, July 1976)

FPWQCT

DETAILED NOTES OF EXPLANATION

- (46) 68 FR 75510. Recalculation of these fifteen criteria for human health should consider the incidental ingestion for criteria with low BCF. Utilizing current daily fish intake, relative source contribution, and updated toxicological data.
- (47) This value was derived from endosulfan data and is more pertinent to the sum of alpha-endosulfan and beta-endosulfan.
- (48) This criterion pertains only to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).
- (49) The criterion for manganese is not based on toxic effects; it is intended to minimize objectionable qualities such as laundry stains and objectionable tastes in beverages.
- (50) Reserved
- (51) Reserved.
- (52) Acute (CMC) and chronic (CCC) freshwater copper criteria shall be developed using EPA's 2007 *Aquatic Life Ambient Freshwater Quality Criteria—Copper* (EPA-822-R-07-001), which incorporates use of the copper biotic ligand model (BLM). Where sufficiently representative ambient data for DOC, calcium, magnesium, sodium, potassium, sulfate, chloride, or alkalinity are not available, the tribe shall use estimates from similar sites.

Appendix C

PHYSICAL AND BIOLOGICAL CRITERIA TABLE FOR THE FORT PECK INDIAN RESERVATION

Table C-1.
FORT PECK ASSINIBOINE-SIOUX INDIAN RESERVATION
PHYSICAL AND BIOLOGICAL CRITERIA

Parameter	Recreational		Aquatic Life				Domestic Water Supply
			Class 1	Class 1	Class 2	Class 2	
	Primary	Secondary	Cool Water	Warm Water	Cool Water	Warm Water	
	Contact	Contact	Biota	Biota	Biota	Biota	
PHYSICAL							
pH ¹ (standard units)	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0
Dissolved Oxygen	Refer to FPWQCT in Append. B						
Temperature ² (maximum values)			23°C	27°C	23°C	27°C	
Solids	See Narrative Criteria Section V						
BIOLOGICAL							
E. coli ³	126 per 100 ml	126 per 100 ml					

REFERENCES FOR TABLE C-1: PHYSICAL AND BIOLOGICAL CRITERIA

1. Induced variation of hydrogen ion concentration (pH) within the range of 6.5 to 9.0 must be less than 0.5 pH unit. Natural pH outside this range must be maintained without change. Natural pH above 7.0 must be maintained above 7.0.
2. For those streams designated as Class 1 & Class 2 Cool Water, a 0.5° C increase above naturally occurring water temperature is allowed within the range of 0°C to 18.9°C; within the naturally occurring range of 18.9°C to 19.2°C, no discharge is allowed which will cause the water temperature to exceed 19.4°C; and where the naturally occurring water temperature is 19.2°C or greater, the maximum allowable increase in water temperature is 0.3°C. A 1.1°C-per-hour maximum decrease below naturally occurring water temperature is allowed when the water temperature is above 12.8°C, and a 1.1°C maximum decrease below naturally occurring water temperature is allowed within the range of 12.8°C to 0°C.

For those streams designated as Class 1 & Class 2 Warm Water, a 1.7°C maximum increase above naturally occurring water temperature is allowed within the range of 0°C to 25°C; within the naturally occurring range of 25°C to 26.4°C, no thermal discharge is allowed which will cause the water temperature to exceed 26.7°C; and where the naturally occurring water temperature is 26.4°C or greater, the maximum allowable increase in water temperature is 0.3°C. A 1.1°C-per-hour maximum decrease below naturally occurring water temperature is allowed when the water temperature is above 12.8°C, and 1.1°C maximum decrease below naturally occurring water temperature is allowed within the range of 12.8°C to 0°C.

3. Criteria for the Primary and Secondary Contact Recreation Use:

Based on a statistically sufficient number of samples, the geometric mean of the *E. coli* densities shall not exceed 126 per 100 ml. In addition, no single sample shall exceed 235 per 100 ml in water designated for Primary Contact Recreation.

Appendix D

AGRICULTURAL USES WATER QUALITY STANDARDS

TABLE D-1
 NUMERIC CRITERIA TO SUPPORT AGRICULTURAL USES (1)
 (All concentrations are ug/L)

Parameter	Agricultural Use	
	Livestock	Irrigation
Arsenic	-	100 (2)
Beryllium	-	100 (2)
Boron	-	750 (2)
Cadmium	50 (3)	-
Chromium	1,000 (3)	-
Copper	500 (3)	-
Lead	100 (3)	-
Nitrate (as N)	100,000 (3)	-
Nitrite (as N)	10,000 (3)	-
Selenium	50 (3)	-
Zinc	25,000 (3)	-

- (1) Implementation of these criteria shall include case-by-case decisions regarding averaging period and allowable frequency of exceedance, and shall take into consideration the use to be protected and the available toxicological data for the substance, including whether the effects are acute or chronic.
- (2) Criteria based on recommendations included in *Quality Criteria for Water*, 1976, U.S. EPA; U.S. Government Printing Office: 1977 (0-222-904).
- (3) Criteria based on recommendations included in *Water Quality Criteria*, 1972, National Academy of Sciences, March 1973, EPA-R3-73-033.

Appendix E

ANTIDEGRADATION REVIEW WORKSHEET

ANTIDegradation REVIEW SHEET

1 . Name of Reviewer: _____
Name of Receiving Water: _____
Watershed: _____
Segment Location (Land Description): _____
Stream Classification: _____
Other: _____
ID Number if any: _____

2 . Brief Description of Proposed Activity:

3 . Which tier(s) of antidegradation apply?

____ Tier 3 - go to Question 4

____ Tier 2 - go to Question 7

____ Tier 1- go to Question 13

Tier 3 Questions

4 . Will the proposed activity result in a permanent new or expanded source of pollutants directly to an ONRW segment?

____ yes - recommend denial of the proposed activity

____ no

Basis for conclusion:

5. If the proposed activity will result in a permanent new or expanded source of pollutants to a segment upstream from an ONRW segment, will the proposed activity affect ONRW water quality (see IV.3.a of the implementation procedure).

____ yes - recommend denial of the proposed activity

____ no

Basis for conclusion:

6. If the proposed activity will result in a non-permanent new or expanded source of pollutants to ONRW segment or a segment upstream from an ONRW segment, will the proposed activity result in “temporary and limited” effects on ONRW water quality (see IV.3.b of the implementation procedure)?

_____ yes

_____ no - recommend denial of the proposed activity

Basis for conclusion:

Tier 2 Questions

7. Does the segment qualify for tier 2 protection based on the applicable criteria (see IV.4.a of the implementation procedure)?

_____ yes

_____ no

Basis for conclusion:

8. Will the proposed activity result in significant degradation (see IV.4.b of the implementation procedure)?

_____ yes

_____ no - recommend approval of the activity

_____ significance test by-passed due to availability of a reasonable less degrading alternative

If significance test not by-passed, basis for conclusion:

9. Has the applicant completed an adequate evaluation of alternatives and demonstrated that there are not reasonable alternatives to allowing the degradation (see IV.4.c of the implementation procedure)?

_____ yes

_____ no - recommend denial of the proposed activity

If no, basis for conclusion:

10. Has the applicant demonstrated that the proposed activity would provide important socio-economic development in the area in which the affected waters are located (see IV.4.d of the implementation procedure)?

_____ yes

_____ no - recommend denial of the proposed activity

If no, basis for conclusion:

11. Will existing uses be fully protected consistent with the Tier 1 procedures outlined by questions 14-16 below (questions 14-16 must be completed)?

_____ yes

_____ no- recommend denial of the proposed activity

Basis for conclusion:

12. Has compliance with required controls on point and nonpoint sources in the zone of influence been assured (see IV.4.f of the implementation procedures)?

_____ yes

_____ no - recommend denial of the proposed activity

Basis for conclusion:

Tier 1 Questions

13. The basis for concluding that tier 2 requirements do not apply is as follows (see IV.5.a of the implementation procedure):

14. Are there uses that exist or have existed since November 28th, 1975 that have more stringent water quality protection requirements than the currently designated uses (see IV.5.c of the implementation procedures)?

_____ yes

_____ no

If yes, basis for conclusion:

15. If the answer to question 14 was yes, what water quality criteria requirements will ensure the protection of such existing uses (see IV.5.d.i of the implementation procedure)? (Indicate parameters and applicable water quality criteria.)

16. Will existing uses be fully maintained and protected (see IV.5.d.ii of the implementation procedure)?

_____ yes

_____ no - recommend denial of the proposed activity.

If no, basis for conclusion:

Preliminary Decision

17. Based on the above, can the proposed activity be authorized pursuant to the Tribes' antidegradation policy?

_____ yes

_____ no

Basis for conclusion:

Signature:

Date: