

## NEBRASKA ADMINISTRATIVE CODE

### Title 117 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

#### Chapter 1 - DEFINITION OF TERMS

001 The following terms are defined in Neb. Rev. Stat. §81-1502: Department, Garbage, Junk, Point Source, Refuse, Rubbish, and Water Pollution.

002 “Acute Criteria” means the threshold concentration of a substance that aquatic organisms can be exposed to for a period of 96 hours or less with no resulting acute toxicity.

003 “Acute Mixing Zone” means the limited area or volume of a waterbody, as designated by the Department, which adjoins a point source discharge, where acute criteria may be exceeded while wastewaters which have received the applicable level of treatment or control are allowed to assimilate, disperse, dissipate, or undergo chemical transformation.

004 “Acute Toxicity” means the response of an aquatic organism to a concentration of a substance which results in injury or mortality within a period of 96 hours or less.

005 “Acute Toxic Units (TU<sub>a</sub>)” means the reciprocal of the effluent dilution that causes an acute effect (e.g., LC<sub>50</sub>) to the test organism by the end of the acute exposure period.

006 “Applicable Level of Treatment or Control” means that treatment or control which is required by Title 119 - Rules and Regulations Pertaining to the Issuance of Permits under the National Pollutant Discharge Elimination System; Title 120 - Procedures Pursuant to Section 401 of the Federal Clean Water Act, 33 U.S.C. § 1251 Et Seq., for Certification by the Department of Activities Requiring a Federal License or Permit which may Result in a Discharge; or which is otherwise specified by the Department considering best available technology and management practices.

007 “Beneficial Use” means any productive use of surface waters for which water quality is protected. Beneficial uses include but are not limited to agricultural, industrial, and public water supplies; support and propagation of fish, and other aquatic life; recreation in and on the water; and aesthetics. Waste assimilation, disposal, or transport are not beneficial uses.

008 “Bioassay” means a test used to evaluate the relative toxicity of a substance by comparing its effect on a living organism to the effect of a standard preparation (control) on the same type of organism.

Title 117

Chapter 1

009 “Canal” means an artificial waterway constructed for the purpose of developing water power, or any other useful purpose, and from which water can be taken for irrigation.

010 “Chronic Criteria” means the threshold concentration of a substance that aquatic organisms can be exposed to for a period exceeding 96 hours with no resulting chronic toxicity.

011 “Chronic Mixing Zone” means the limited area or volume of a waterbody, as designated by the Department, which adjoins a point source discharge, where chronic criteria may be exceeded while wastewaters which have received the applicable level of treatment or control are allowed to assimilate, disperse, dissipate, or undergo chemical transformation.

012 “Chronic Toxicity” means the response of an aquatic organism to a concentration of a substance which results in adverse effects such as injury, mortality, reduced growth, or impaired reproduction after period of exposure exceeding 96 hours.

013 “Chronic Toxic Units (TU<sub>c</sub>)” means the reciprocal of the effluent dilution that causes no chronic toxicity to the test organisms by the end of the chronic exposure period.

014 “Clean Water Act” is the federal law codified at 33 U.S.C. §1251 et seq.

015 “Colloidal Substances” means clay or other substances which do not settle out of suspension in water without the use of a flocculent.

016 “Conductivity” means a measure of the ability of water to conduct an electrical current which is expressed in micromhos per centimeter. Conductivity is related to the number and types of chemical ions or dissolved solids in solution.

017 “Cubic Foot per Second (cfs)” means the unit of measurement used in reporting stream discharge, sometimes referred to as second-foot (sec-ft). It is a volume of one cubic foot passing a given point during one second of time and is equivalent to 7.48 gallons per second or 448.8 gallons per minute.

018 “Daily Mean” means an average of at least two appropriately spaced measurements, as determined by the Department, calculated over a period of one day. In calculating the daily mean for dissolved oxygen, values used in the calculations shall not exceed the dissolved oxygen air saturation value. If a measured value exceeds the dissolved oxygen air saturation value, then the dissolved oxygen air saturation value shall be used in calculating the daily mean.

Title 117

Chapter 1

019 “Dissolved Oxygen (DO)” means a measure of the amount of free oxygen in the water.

020 “Dissolved Oxygen Air Saturation Value” means the concentration of dissolved oxygen which represents 100 percent saturation at any given point in a water body based on the water temperature and atmospheric pressure.

021 “EPA” means the United States Environmental Protection Agency.

022 “Early-Life Stages” means all embryonic and larval stages and all juvenile forms of aquatic life to 30 days following hatching.

023 “Effluent” means wastewater, excluding sludge, discharging from a wastewater treatment works.

024 “Endangered Species” are identified by the Nebraska Game and Parks Commission in NAC Title 163, Chapter 4.

025 “Epilimnion” means the warm, freely circulating upper layer of thermally stratified lakes.

026 “Existing Uses” means those beneficial uses actually attained or attainable in a water body on or after November 28, 1975, whether or not they are included in these standards.

027 “Fecal Coliform” means the portion of the coliform bacteria group which is present in the gut or feces of warm-blooded animals and generally includes organisms which are capable of producing gas from lactose broth in a suitable culture medium within 24 hours at  $44.5 \pm 0.5^{\circ}\text{C}$ .

028 “Four-Day Average” means an average of the daily mean values calculated over a period of four consecutive days.

029 “Hardness” means a characteristic of water which represents the total concentration of polyvalent cations (e.g., calcium, magnesium) expressed as calcium carbonate in mg/l. Hardness may be calculate for most waters by adding together the values obtained from multiplying the concentrations of calcium by 2.497 and magnesium by 4.116 to obtain the equivalent calcium carbonate concentration.

030 “High-Rate Diffusers” means devices attached to, or part of, a discharge outfall structure which provide discharge velocities that promote turbulent initial mixing of wastewaters with the receiving water.

Title 117

Chapter 1

031 “Hypolimnion” means the cold, relatively undisturbed lowermost layer of thermally stratified lakes.

032 “Key Species” means identified endangered, threatened, sensitive, or recreationally-important aquatic species associated with a particular water body and its aquatic life use class.

033 “Lake or Impounded Water” means any waterbody with all of the following characteristics: (1) situated in a topographic depression or a dammed stream channel; (2) 30 percent or less areal coverage of trees, shrubs, persistent emergent aquatic plants, or emergent mosses; and (3) total area exceeds 20 acres. Similar waterbodies totaling less than 20 acres are also included if an active waveformed or bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 6.6 feet. Impounded waters in this definition may be manmade or naturally occurring collections or confinements of water. They do not include areas designated by the Department as wastewater treatment or wastewater retention facilities or irrigation reuse pits.

034 “LC<sub>50</sub>” means the statistical estimate of the concentration of a substance which kills 50 percent of the bioassay test organisms under test conditions specified or approved by the Department.

035 “Metalimnion” means the layer of a thermally stratified lake which exhibits a steep temperature gradient and separates the epilimnion above from the hypolimnion below.

036 “Milligrams per Liter (mg/L)” means the milligrams of substance per liter of solution, equivalent to parts per million assuming unit density of the solution.

037 “Mixing Zone” means the limited area or volume of a water body, as designated by the Department, which adjoins a point source discharge, and into which wastewaters which have received the applicable level of treatment or control are allowed to assimilate, disperse, dissipate, or undergo chemical transformation.

038 “Natural Background” means quantifiable measurements of water quality existing in the absence of water pollution.

039 “Noncontact Cooling Water” means water used to reduce temperature which does not come into direct contact with any raw material, intermediate product, waste product (other than heat), or finished product.

Title 117

Chapter 1

040 “Nonpoint Source” means any source of pollutants other than those defined as point sources.

041 “Nuisance Aquatic Life” means species of aquatic flora or fauna whose noxious characteristics or presence in sufficient numbers, biomass, or areal extent may reasonably be expected to prevent or interfere with a beneficial use.

042 “One-Day Minimum” means the lowest daily instantaneous value measured.

043 “One-Day Ten-Year (1Q10) Low Flow” means the discharge at the ten-year recurrence interval determined from a frequency distribution of annual values of the lowest discharge for one day.

044 “One-Hour Average” means an average of at least two appropriately spaced measurements, as determined by the Department, calculated over a period of one hour.

045 “Petroleum Oils” means all oils other than oils of vegetable and animal origin.

046 “pH” means the negative logarithm of the hydrogen ion concentration ( $\text{pH} = -\log [\text{H}^+]$ ). pH expresses both the acidity and alkalinity of water on a scale from 0 to 14, with 7 representing neutrality (numbers less than 7 denote increasing acidity, and numbers greater than 7 denote increasing alkalinity).

047 “Pollutant” means any gas, liquid, or solid introduced into a body of water that causes water pollution. Pollutants under this definition include, but are not limited to, dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water.

048 “Recreationally-Important Species” means any game fish species identified by the Department, or any hybrid thereof, which is important to sport fishermen and readily affected by water quality degradation.

049 “Resident Species” means those species that typically occur in a water body including those that occur only seasonally or intermittently. Species that were once present but can no longer return due to physical habitat alterations are not included.

050 “Salmonid” means any fish belonging to the family Salmonidae. Trout are members of this family.

Title 117

Chapter 1

051 “Sensitive Species” means any aquatic species identified by the Department which has a limited distribution in the State and is indigenous to stable, high quality aquatic environments.

052 “Settleable Solids” means substances such as silt, organic detritus, plankton, or sand, which settle to the bottom of a water body or water column.

053 “Seven-Day Mean” means an average of the daily mean values calculated over a period of seven consecutive days.

054 “Seven-Day Mean Minimum” means an average of the one-day minimum values calculated over a period of seven consecutive days.

055 “Seven-Day Ten-Year (7Q10) High Flow” means the discharge at the ten-year recurrence interval determined from a frequency distribution of annual values of the highest average discharge for seven consecutive days.

056 “Seven-Day Ten-Year (7Q10) Low Flow” means the discharge at the ten-year recurrence interval determined from a frequency distribution of annual values of the lowest average discharge for seven consecutive days.

057 “Standards” means rules or regulations which are comprised of the water quality criteria that are necessary to protect the beneficial uses of surface waters.

058 “Substrate” means any naturally occurring or artificial solid surface which is emersed or submerged in water.

059 “Surface Waters” means all waters within the jurisdiction of this State, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, springs, canal systems, drainage systems, and all other bodies or accumulations of water, natural or artificial, public or private, situated wholly or partly within or bordering upon the State. Impounded waters in this definition do not include areas designated by the Department as wastewater treatment or wastewater retention facilities or irrigation reuse pits.

060 “Suspended Solids” means substances such as clay, silt, organic detritus, plankton, or sand, which are held in suspension by water currents or which exist in suspension as colloids.

061 “Synergistic Effects” means the cooperative action of discrete substances such that the cumulative effects are greater than the sum of the effects taken independently.

Title 117

Chapter 1

062 “Thermal Stratification” means a characteristic of certain lakes in which distinct layers of water that differ in density exist because of temperature differences. These layers are resistant to mixing with each other.

063 “Thirty-Day Five-Year (30Q5) High Flow” means the discharge at the five year recurrence interval determined from a frequency distribution of annual values of the highest average discharge for thirty consecutive days.

064 “Thirty-Day Five-Year (30Q5) Low Flow” means the discharge at the five-year recurrence interval determined from a frequency distribution of annual values of the lowest average discharge for thirty consecutive days.

065 “Thirty-Day Mean” or “Thirty-Day Average” means an average of the daily mean values calculated over a period of thirty consecutive days.

066 “Threatened Species” are identified by the Nebraska Game and Parks Commission in NAC Title 163, Chapter 4.

067 “Toxic Substances” means those pollutants or combination of pollutants, radioactive substances, or disease causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into organisms, either directly from the environment or indirectly by ingestion through food chains, will on the basis of information available to the Department cause either death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations, on such organisms or their offspring.

068 “Toxic Units (TU)” means the reciprocal of the effluent dilution that produces the bioassay endpoint.

069 “Twenty-four Hour Average” means an average of at least two appropriately spaced measurements, as determined by the Department, calculated over a period of 24 consecutive hours.

070 “Wastewater” means water containing sewage, and/or industrial wastes, including, but not limited to, discharges from sand and gravel operations, cooling water, storm water, street and road runoff, return flow from irrigation, feedlot runoff, or wastes resulting from land erosion and other discharges, treated or untreated, which enter directly or indirectly into the waters of the State or to any storm sewer, and including the runoff from land used for the disposition of wastes.

Title 117

Chapter 1

071 “Water Quality” means the biological, chemical, physical, and radiological integrity of a body of water.

071.01 “Biological Integrity” means the plant, animal, and bacteriological species composition of a body of water.

071.02 “Chemical Integrity” means the chemical properties of the water, sediments, or biological organisms (e.g., concentrations in fish tissue) of a body of water.

071.03 “Physical Integrity” means the physical properties (e.g., temperature, turbidity, sedimentation) of a body of water.

071.04 “Radiological Integrity” means the radioactive properties of the water, sediments, or biological organisms (e.g., concentrations in fish tissue) of a body of water.

072 “Water Quality Criteria” means the elements of standards which are expressed as concentrations, levels, or narrative statements and represent the quality of water that is necessary to protect a beneficial use.

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

074 “Zone of Passage” means the area or volume of a water body outside of any mixing zone or zones which provides a continuous water route for the free passage of swimming and drifting aquatic organisms such that there are no adverse effects to their populations.

Enabling Legislation: Neb. Rev. Stat. §§ 81-1502 and 81-1505(1)(2)

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