

**APPENDIX A-7:**

**WATER QUALITY STANDARDS**

This appendix contains an excerpt from the Oregon Administrative Rules (OAR), pertaining to water quality standards in the Umatilla Basin. Please note that the figures and tables referenced in this appendix are part of the OAR, not the Umatilla Sub-Basin TMDL. The complete OAR is publicly accessible via the internet at the following URL: <http://arcweb.sos.state.or.us/default.html>

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## Umatilla Basin

### 340-041-0642

#### Beneficial Water Uses to be Protected

Water quality in the Umatilla River Basin (see **Figures 1 and 12**) shall be managed to protect the recognized beneficial uses as indicated in **Table 11**.

[ED. NOTE: The Figure(s) and Table referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: [ORS 468](#)

Stats. Implemented: [ORS 468B.048](#)

Hist.: DEQ 128, f. & ef. 1-21-77

### 340-041-0645

#### Water Quality Standards Not to be Exceeded (To be Adopted Pursuant to [ORS 468.735](#) and Enforceable Pursuant to [ORS 468.720](#), [468.990](#), and [468.992](#))

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

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Umatilla River Basin:

(a) Dissolved oxygen (DO): The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply:

(A) For waterbodies identified by the Department as providing salmonid spawning, during the periods from spawning until fry emergence from the gravels, the following criteria apply:

(i) The dissolved oxygen shall not be less than 11.0 mg/l. However, if the minimum intergravel dissolved oxygen, measured as a spatial median, is 8.0 mg/l or greater, then the DO criterion is 9.0 mg/l;

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

(B) For waterbodies identified by the Department as providing salmonid spawning during the period from spawning until fry emergence from the gravels, the spatial median intergravel dissolved oxygen concentration shall not fall below 6.0 mg/l;

(C) A spatial median of 8.0 mg/l intergravel dissolved oxygen level shall be used to identify areas where the recognized beneficial use of salmonid spawning, egg incubation and fry emergence from the egg and from the gravels may be impaired and therefore require action by the Department. Upon determination that the spatial median intergravel dissolved oxygen concentration is below 8.0 mg/l, the Department may, in accordance with priorities established by

the Department for evaluating water quality impaired waterbodies, determine whether to list the waterbody as water quality limited under the Section 303(d) of the Clean Water Act, initiate pollution control strategies as warranted, and where needed cooperate with appropriate designated management agencies to evaluate and implement necessary best management practices for nonpoint source pollution control;

(D) For waterbodies identified by the Department as providing cold-water aquatic life, the dissolved oxygen shall not be less than 8.0 mg/l as an absolute minimum. Where conditions of barometric pressure, altitude, and temperature preclude attainment of the 8.0 mg/l, dissolved oxygen shall not be less than 90 percent of saturation. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 8.0 mg/l as a 30-day mean minimum, 6.5 mg/l as a seven-day minimum mean, and shall not fall below 6.0 mg/l as an absolute minimum (**Table 21**);

(E) For waterbodies identified by the Department as providing cool-water aquatic life, the dissolved oxygen shall not be less than 6.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 6.5 mg/l as a 30-day mean minimum, 5.0 mg/l as a seven-day minimum mean, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);

(F) For waterbodies identified by the Department as providing warm-water aquatic life, the dissolved oxygen shall not be less than 5.5 mg/l as an absolute minimum. At the discretion of the Department, when the Department determines that adequate information exists, the dissolved oxygen shall not fall below 5.5 mg/l as a 30-day mean minimum, and shall not fall below 4.0 mg/l as an absolute minimum (**Table 21**);

(b) Temperature: The changes adopted by the Commission on January 11, 1996, become effective July 1, 1996. Until that time, the requirements of this rule that were in effect on January 10, 1996, apply. The method for measuring the numeric temperature criteria specified in this rule is defined in OAR 340-041-0006(54):

(A) To accomplish the goals identified in OAR 340-041-0120(11), unless specifically allowed under a Department-approved surface water temperature management plan as required under OAR 340-041-0026(3)(a)(D), no measurable surface water temperature increase resulting from anthropogenic activities is allowed:

(i) In a basin for which salmonid fish rearing is a designated beneficial use, and in which surface water temperatures exceed 64.0°F (17.8°C);

(ii) In the Columbia River or its associated sloughs and channels from the mouth to river mile 309 when surface water temperatures exceed 68.0°F (20.0°C);

(iii) In waters and periods of the year determined by the Department to support native salmonid spawning, egg incubation, and fry emergence from the egg and from the gravels in a basin which exceeds 55.0°F (12.8°C);

(iv) In waters determined by the Department to support or to be necessary to maintain the viability of native Oregon bull trout, when surface water temperatures exceed 50.0°F (10.0°C);

(v) In waters determined by the Department to be ecologically significant cold-water refugia;

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

(vii) In Oregon waters when the dissolved oxygen (DO) levels are within 0.5 mg/l or 10 percent saturation of the water column or intergravel DO criterion for a given stream reach or subbasin;

(viii) In natural lakes.

(B) An exceedance of the numeric criteria identified in subparagraphs (A)(i) through (iv) of this subsection will not be deemed a temperature standard violation if it occurs when the air temperature during the warmest seven-day period of the year exceeds the 90th percentile of the seven-day average daily maximum air temperature calculated in a yearly series over the historic record. However, during such periods, the anthropogenic sources must still continue to comply with their surface water temperature management plans developed under OAR 340-041-0026(3)(a)(D);

(C) Any source may petition the Commission for an exception to subparagraphs (A)(i) through (viii) of this subsection for discharge above the identified criteria if:

(i) The source provides the necessary scientific information to describe how the designated beneficial uses would not be adversely impacted; or

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

(c) Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:

(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;

(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-085-0100 et. seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.

(d) pH (hydrogen ion concentration): pH values shall not fall outside the ranges identified in paragraphs (A) and (B) of this subsection. The following exception applies: Waters impounded by dams existing on January 1, 1996, which have pHs that exceed the criteria shall not be considered in violation of the standard if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria:

(A) Columbia River (river miles 247 to 309): 7.0 &ndash; 8.5;

(B) All other Basin streams: 6.5 &ndash; 9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department shall determine whether the values higher than 8.7 are anthropogenic or natural in origin.

(e) Bacteria standards:

(A) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) shall not exceed the criteria described in subparagraphs (i) and (ii) of this paragraph. Freshwaters:

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

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

(B) Raw Sewage Prohibition: No sewage shall be discharged into or in any other manner be allowed to enter the waters of the State unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;

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

(D) Effluent Limitations and Water Quality Limited Waterbodies: Effluent limitations to implement the criteria in this rule are found in OAR 340-041-0120(12) through (16). Implementation of the criteria in this rule in water quality limited waterbodies is described in OAR 340-041-0026(3)(a)(I) and OAR 340-041-0120(17).

(f) Bacterial pollution or other conditions deleterious to waters used to domestic purposes, livestock watering, irrigation, or bathing, or otherwise injurious to public health shall not be allowed;

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

(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed;

(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed;

- (j) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry shall not be allowed;
- (k) Objectionable discoloration, scum, oily sleek or floating solids, or coating of aquatic life with oil films shall not be allowed;
- (l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed;
- (m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard;
- (n)(A) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 110 percent of saturation, except when stream flow exceeds the ten-year, seven-day average flood. However, for Hatchery receiving waters and waters of less than two feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed 105 percent of saturation;
- (B) The Commission may modify the total dissolved gas criteria in the Columbia River for the purpose of allowing increased spill for salmonid migration. The Commission must find that:
- (i) Failure to act would result in greater harm to salmonid stock survival through in-river migration than would occur by increased spill;
- (ii) The modified total dissolved gas criteria associated with the increased spill provides a reasonable balance of the risk of impairment due to elevated total dissolved gas to both resident biological communities and other migrating fish and to migrating adult and juvenile salmonids when compared to other options for in-river migration of salmon;
- (iii) Adequate data will exist to determine compliance with the standards; and
- (iv) Biological monitoring is occurring to document that the migratory salmonid and resident biological communities are being protected.
- (C) The Commission will give public notice and notify all known interested parties and will make provision for opportunity to be heard and comment on the evidence presented by others, except that the Director may modify the total dissolved gas criteria for emergencies for a period not exceeding 48 hours;
- (D) The Commission may, at its discretion, consider alternative modes of migration.
- (o) Total Dissolved Solids: Guide concentrations listed below shall not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0642: Columbia River -- 200.0 mg/l;
- (p) Toxic Substances:
- (A) Toxic substances shall not be introduced above natural background levels in the waters of the state in amounts, concentrations, or combinations which may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses;
- (B) Levels of toxic substances shall not exceed the criteria listed in **Table 20** which were based on criteria established by EPA and published in **Quality Criteria for Water (1986)**, unless otherwise noted;
- (C) The criteria in paragraph (B) of this subsection shall apply unless data from scientifically valid studies demonstrate that the most sensitive designated beneficial uses will not be adversely affected by exceeding a criterion or that a more restrictive criterion is warranted to protect beneficial uses, as accepted by the Department on a site specific basis. Where no published EPA criteria exist for a toxic substance, public health advisories and other published scientific literature may be considered and used, if appropriate, to set guidance values;
- (D) Bio-assessment studies such as laboratory bioassays or instream measurements of indigenous biological communities, shall be conducted, as the Department deems necessary, to monitor the toxicity of complex effluents, other suspected discharges or chemical substances without numeric criteria, to aquatic life. These studies, properly conducted in accordance with standard testing procedures, may be considered as scientifically valid data for the purposes of

paragraph (C) of this subsection. If toxicity occurs, the Department shall evaluate and implement measures necessary to reduce toxicity on a case-by-case basis.

(3) Where the naturally occurring quality parameters of waters of the Umatilla River Basin are outside the numerical limits of the above assigned water quality standards, the naturally occurring water quality shall be the standard. However, in such cases special restrictions, described in OAR 340-041-0026(3)(a)(C)(iii), apply to discharges that affect dissolved oxygen.

(4) Mixing zones:

(a) The Department may allow a designated portion of a receiving water to serve as a zone of dilution for wastewaters and receiving waters to mix thoroughly and this zone will be defined as a mixing zone;

(b) The Department may suspend all or part of the water quality standards, or set less restrictive standards, in the defined mixing zone, provided that the following conditions are met:

(A) The water within the mixing zone shall be free of:

(i) Materials in concentrations that will cause acute toxicity to aquatic life as measured by a Department approved bioassay method. Acute toxicity is lethality to aquatic life as measured by a significant difference in lethal concentration between the control and 100 percent effluent in an acute bioassay test. Lethality in 100 percent effluent may be allowed due to ammonia and chlorine only when it is demonstrated on a case-by-case basis that immediate dilution of the effluent within the mixing zone reduces toxicity below lethal concentrations. The Department may on a case-by-case basis establish a zone of immediate dilution if appropriate for other parameters;

(ii) Materials that will settle to form objectionable deposits;

(iii) Floating debris, oil, scum, or other materials that cause nuisance conditions;

(iv) Substances in concentrations that produce deleterious amounts of fungal or bacterial growths.

(B) The water outside the boundary of the mixing zone shall:

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

(ii) Meet all other water quality standards under normal annual low flow conditions.

(c) The limits of the mixing zone shall be described in the wastewater discharge permit. In determining the location, surface area, and volume of a mixing zone area, the Department may use appropriate mixing zone guidelines to assess the biological, physical, and chemical character of receiving waters, and effluent, and the most appropriate placement of the outfall, to protect instream water quality, public health, and other beneficial uses. Based on receiving water and effluent characteristics, the Department shall define a mixing zone in the immediate area of a wastewater discharge to:

(A) Be as small as feasible;

(B) Avoid overlap with any other mixing zones to the extent possible and be less than the total stream width as necessary to allow passage of fish and other aquatic organisms;

(C) Minimize adverse effects on the indigenous biological community especially when species are present that warrant special protection for their economic importance, tribal significance, ecological uniqueness, or for other similar reasons as determined by the Department and does not block the free passage of aquatic life;

(D) Not threaten public health;

(E) Minimize adverse effects on other designated beneficial uses outside the mixing zone.

(d) The Department may request the applicant of a permitted discharge for which a mixing zone is required, to submit all information necessary to define a mixing zone, such as:

(A) Type of operation to be conducted;

(B) Characteristics of effluent flow rates and composition;

(C) Characteristics of low flows of receiving waters;

(D) Description of potential environmental effects;

(E) Proposed design for outfall structures.

(e) The Department may, as necessary, require mixing zone monitoring studies and/or bioassays to be conducted to evaluate water quality or biological status within and outside the mixing zone boundary;

(f) The Department may change mixing zone limits or require the relocation of an outfall if it determines that the water quality within the mixing zone adversely affects any existing beneficial uses in the receiving waters.

(g) **Alternate requirements for mixing zones:** For some existing or proposed discharges to some receiving streams, it may not be practicable to treat wastewater to meet instream water quality standards at the point of discharge or within a short distance from the point of discharge. Some of these discharges could be allowed without impairing the overall ecological integrity of the receiving streams, or may provide an overall benefit to the receiving stream. This section specifies the conditions and circumstances under which a mixing zone may be allowed by the Department that extends beyond the immediate area around a discharge point, or that extends across a stream width. An alternate mixing zone may be approved if the applicant demonstrates to the Department's satisfaction that the discharge (A) creates an overall environmental benefit, or (B) is to a constructed water course, or (C) is insignificant. The three circumstances under which alternate mixing zones may be established are described further below.

**(A) Overall environmental benefit.**

(i) Qualifying for alternate mixing zone based on overall environmental benefit: In order to qualify for an alternate mixing zone based on a finding of overall environmental benefit, the discharger must demonstrate to the Department's satisfaction the following:

(I) That all practical strategies have been or will be implemented to minimize the pollutant loads in the effluent; and

(II) For proposed increased discharges, the current actual discharge and mixing zone does not meet the requirements of a standard mixing zone; and

(III) Either that, on balance, an environmental benefit would be lost if the discharge did not occur, or that the discharger is prepared to undertake other actions that will mitigate the effect of the discharge to an extent resulting in a net environmental benefit to the receiving stream.

(IV) For the purposes of this rule, the term "practical" shall include environmental impact, availability of alternatives, cost of alternatives, and other relevant factors.

(ii) Studies required and evaluation of studies: In order to demonstrate that, on balance, an environmental benefit will result from the discharge, the following information shall be provided by the applicant:

(I) The effluent flow and pollutant loads that are detected or expected in the effluent, by month, both average and expected worst case discharges. The parameters to be evaluated include at a minimum temperature, biochemical oxygen demand, total suspended solids, total dissolved solids, pH, settleable solids, e. coli bacteria, oil and grease, any pollutants listed in Table 20 of this rule division, and any pollutant for which the receiving stream has been designated by the Department as water quality limited; and

(II) Receiving stream flow, by month; and

(III) The expected impact of the discharge, by month, on the receiving stream for the entire proposed mixing zone area for all of the pollutants listed above. Included in this analysis shall be a comparison of the receiving stream water quality with the discharge and without the discharge; and

(IV) A description of fish, other vertebrate populations, and macroinvertebrates that reside in or are likely to pass through the proposed mixing zone, including expected location (if known), species identification, stage of development, and time of year when their presence is expected. For existing discharges, the applicant shall provide the same information for similar nearby streams that are unaffected by wastewater discharges. In addition, any threatened or endangered species in the immediate vicinity of the receiving stream shall be identified; and

(V) The expected impact of the discharge on aquatic organisms and/or fish passage, including any expected negative impacts from the effluent attracting fish where that is not desirable; and

(VI) A description of the expected environmental benefits to be derived from the discharge or other mitigation measures proposed by the applicant, including but not limited to improvements in water quality, improvements in fish passage, and improvements in aquatic habitat. If the applicant proposes to undertake mitigation measures designed to provide environmental benefits (e.g.,

purchasing water or water conservation rights to increase stream flows or establishing stream cover to decrease temperature), the applicant shall describe the mitigation measures in detail, including a description of the steps it will take to ensure that the benefits of the mitigation measures are attained and are not lost or diminished over time.

(VII) Some or all of the above study requirements may be waived by the Department, if the Department determines that the information is not needed. In the event that the Department does waive some or all of the above study requirements, the basis for waiving the requirements will be included in the permit evaluation report upon the next permit renewal or modification relating to the mixing zone.

(VIII) Upon request of the Department, the applicant shall conduct additional studies to further evaluate the impact of the discharge, which may include whole effluent toxicity testing, stream surveys for water quality, stream surveys for fish and other aquatic organisms, or other studies as specified by the Department.

(IX) In evaluating whether an existing or proposed increase in an existing discharge would result in a net environmental benefit, the applicant shall use the native biological community in a nearby, similar stream that is unaffected by wastewater discharges. The Department shall consider all information generated as required in this rule and other relevant information. The evaluation shall consider benefits to the native aquatic biological community only.

(iii) Permit conditions: Upon determination by the Department that the discharge and mitigation measures (if any) will likely result in an overall environmental benefit, the Department shall include appropriate permit conditions to insure that the environmental benefits are attained and continue. Such permit conditions may include but not be limited to:

(I) Maximum allowed effluent flows and pollutant loads;

(II) Requirements to maintain land ownership, easements, contracts, or other legally binding measures necessary to assure that mitigation measures, if any, remain in place and effective;

(III) Special operating conditions;

(IV) Monitoring and reporting requirements; and

(V) Studies to evaluate the effectiveness of mitigation measures.

(B) **Constructed water course:** A mixing zone may be extended through a constructed water course and into a natural water course. For the purposes of this rule, a constructed water course is one that was constructed for irrigation, site drainage, or wastewater conveyance, and has the following characteristics:

(i) Irrigation flows, stormwater runoff, or wastewater flows have replaced natural streamflow regimes; and

(ii) The channel form is greatly simplified in lengthwise and cross sectional profiles; and

(iii) Physical and biological characteristics that differ significantly from nearby natural streams; and

(iv) A much lower diversity of aquatic species than found in nearby natural streams; and

(v) If the constructed water course is an irrigation canal, then it must have effective fish screens in place to qualify as a constructed water course.

(C) **Insignificant discharges:** Insignificant discharges are those that either by volume, pollutant characteristics, and/or temporary nature are expected to have little if any impact on beneficial uses in the receiving stream, and for which the extensive evaluations required for discharges to smaller streams are not warranted. For the purposes of this rule, only filter backwash discharges and underground storage tank cleanups are considered insignificant discharges.

(D) **Other requirements for alternate mixing zones:** The following are additional requirements for dischargers requesting an alternate mixing zone:

(i) Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located. The portion of the mixing zone in the larger stream must meet all of the requirements of the standard mixing zone, including not blocking aquatic life passage; and

(ii) An alternate mixing zone shall not be granted if a municipal drinking water intake is located within the proposed mixing zone, and the discharge has a significant adverse impact on the drinking water source; and



(iii) The discharge will not pose an unreasonable hazard to the environment or pose a significant health risk, considering the likely pathways of exposure; and  
(iv) The discharge shall not be acutely toxic to organisms passing through the mixing zone; and  
(v) An alternate mixing zone shall not be granted if the substances discharged may accumulate in the sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses; and  
(vi) In the event that the receiving stream is water quality limited, the requirements for discharges to water quality limited streams supersede this rule.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[ED. NOTE: The Table(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the agency.]

Stat. Auth.: [ORS 468.735](#), [ORS 468B.035](#) & [ORS 468B.048](#)

Stats. Implemented: [ORS 468B.048](#)

Hist.: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80; DEQ 18-1987, f. & ef. 9-4-87; DEQ 14-1991, f. & cert. ef. 8-13-91; DEQ 17-1992, f. & cert. ef. 8-7-92 (and corrected 8-13-92); DEQ 6-1995, f. & cert. ef. 2-28-95; DEQ 21-1995(Temp), f. & cert. ef. 9-21-95; DEQ 5-1996, f. & cert. ef. 3-7-96; DEQ 22-1997, f. & cert. ef. 10-24-97

### **340-041-0655**

#### **Minimum Design Criteria for Treatment and Control of Wastes**

Subject to the implementation program set forth in OAR 340-041-0120, prior to discharge of any wastes from any new or modified facility to any waters of the Umatilla River Basin, such wastes shall be treated and controlled in facilities designed in accordance with the following minimum criteria. (In designing treatment facilities, average conditions and a normal range of variability are generally used in establishing design criteria. A facility once completed and placed in operation should operate at or near the design limit most of the time but may operate below the design criteria limit at times due to variables which are unpredictable or uncontrollable. This is particularly true for biological treatment facilities. The actual operating limits are intended to be established by permit pursuant to [ORS 468.740](#) and recognize that the actual performance level may at times be less than the design criteria).

(1) Sewage wastes:

(a) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control;

(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities at maximum practicable efficiency and effectiveness so as to minimize waste discharges to public waters;

(c) Effluent BOD concentrations in mg/l, divided by the dilution factor (ratio of receiving stream flow to effluent flow) shall not exceed one (1) unless otherwise approved by the EQC;

- (d) Sewage wastes shall be disinfected, after treatment, equivalent to thorough mixing with sufficient chlorine to provide a residual of at least 1 part per million after 60 minutes of contact time unless otherwise specifically authorized by permit;
- (e) Positive protection shall be provided to prevent bypassing raw or inadequately treated sewage to public waters unless otherwise approved by the Department where elimination of inflow and infiltration would be necessary but not presently practicable;
- (f) More stringent waste treatment and control requirements may be imposed where special conditions may require.
- (2) Industrial wastes:
- (a) After maximum practicable inplant control, a minimum of secondary treatment or equivalent control (reduction of suspended solids and organic material where present in significant quantities, effective disinfection where bacterial organisms of public health significance are present, and control of toxic or other deleterious substances);
- (b) Specific industrial waste treatment requirements shall be determined on an individual basis in accordance with the provisions of this plan, applicable federal requirements, and the following:
- (A) The uses which are or may likely be made of the receiving stream;
- (B) The size and nature of flow of the receiving stream;
- (C) The quantity and quality of wastes to be treated; and
- (D) The presence or absence of other sources of pollution on the same watershed.
- (c) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements shall be determined utilizing appropriate bioassays;
- (d) Industrial cooling waters containing significant heat loads shall be subjected to offstream cooling or heat recovery prior to discharge to public waters;
- (e) Positive protection shall be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;
- (f) Facilities shall be provided to prevent and contain spills of potentially toxic or hazardous materials and a positive program for containment and cleanup of such spills should they occur shall be developed and maintained.

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Stats. Implemented: [ORS 468B.030](#)

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