**Proposed Rule Revisions**

*Corrections and Clarifications to Toxics and Nonpoint Source Regulations Rulemaking*

This document is organized in the following way. The proposed revisions to the toxics rules and the nonpoint source rules are separated into two sections. Each section begins with a description of what the proposed rule changes are intending to accomplish. The fiscal and economic document also includes information about the proposed rule revisions. Following the description is the actual rule language showing proposed changes.

**Section 1: Corrections and Clarifications to Toxics Regulations**

**Notes on Proposed Changes**

1. **340-041-0033(1-5): Please see separate documents to reference the new proposed Table 30 and revisions to Table 40. Note that Tables 20, 33A, and 33B will be struck from this rule.**

Proposed changes to the Toxic Substances rule reflect the movement of the effective aquatic life criteria from Tables 20, 33A, and 33B into a new aquatic life criteria table, Table 30. As a result of this movement, Tables 20, 33A, and 33B are no longer needed and are proposed to be deleted. Table 30 contains criteria that either DEQ anticipates EPA will approve, or reflects Table 20 criteria values in those cases where DEQ anticipates EPA is likely to disapprove pollutant criteria from Table 33A or Table 33B (When a criterion submitted to EPA by the state is disapproved by EPA, the previously effective criterion remains in effect for federal Clean Water Act purposes.). DEQ anticipates disapproval of several criteria based on either the National Marine Fishery Service’s biological opinion or other past omissions or errors. EPA action is expected by Jan. 31, 2013. The criteria in black type (i.e. not redline strikethrough) in Table 30 are effective immediately following EPA action. These criteria do not need further Environmental Quality Commission (EQC) adoption or EPA approval. Conversely, the redline/strikethrough proposed changes to Table 30 reflect corrections or clarifications to criteria, footnotes, or introductory language (originally associated with or contained in Tables 20, 33A, or 33B) to correct anticipated EPA disapproval, or show changes to provide further clarifications on the toxics tables or rule language. These changes must be adopted by the EQC and approved by EPA before they become effective. Unlike previous revisions DEQ has made to its criteria, criteria tables can now be attached to the Oregon Administrative Rules in the Secretary of State Bulletin; therefore, proposed changes found at the end of the Toxic Substances rule state that Tables 30 and 40 will be attached as PDF documents (see Arsenic Reduction Policy proposed rule changes for redline/strikethrough regarding table attachment).

1. **340-041-0033(7) Arsenic Reduction Policy Rule Language**

The Arsenic Reduction Policy rule language adopted by the EQC in June 2011 contains several typographical errors. The typos incorrectly reference the Arsenic Reduction Policy as section 4, rather than section 7. This error occurred during preparation of the final rule and the Arsenic Reduction Policy was moved from section 4 in the proposed rule to section 7 in the final toxics rule.

**3. 340-041-0009 Bacteria Rule**

The Bacteria Rule references Table 20. Since Table 20 will be removed from the Toxic Substances rule, DEQ proposes to delete the reference and instead reference the Toxic Substances rule. DEQ proposes not to insert a specific table name (i.e. Table 30) into the Bacteria Rule to reduce citation corrections in the future if the table name changes again.

**4. 340-040-0020 Groundwater Quality Protection**

Table 20 is referenced in the Groundwater Quality Protection rules. Since Table 20 will be removed from the Toxic Substances rule, DEQ proposes to delete the reference and instead reference the Toxic Substances rule. DEQ proposes not to insert a specific table name (i.e. Table 30) into the Groundwater Quality Rule to reduce citation corrections in the future if the table name changes again.

Additionally, there is a citation to Division 41 which no longer exists. The correct reference should be to the Statewide Narrative Criteria.

**5. 340-040-0080 Numerical Groundwater Quality Reference Levels and Guidance Levels**

Table 20 is referenced in the Numerical Groundwater Quality Reference Levels and Guidance Levels rules. Since Table 20 will be removed from the Toxic Substances rule, DEQ proposes to delete the reference and instead reference the Toxic Substances rule. DEQ proposes not to insert a specific table name (i.e. Table 30) into this rule to reduce citation corrections in the future if the table name changes again.

**Proposed Rule Revisions to Divisions 40 and 41**

**340-041-0033** **Toxic Substances**

(1) Amendments in section (3) of this rule and associated revisions to Table 30 will not be effective until approved by EPA pursuant to 40 CFR 131.21 (4/27/2000).

(2) **Toxic Substances Narrative.** Toxic substances may not be introduced above natural background levels in waters of the state in amounts, concentrations, or combinations that 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 or aquatic life, wildlife, or other designated beneficial uses.

(3) **Aquatic Life Numeric Criteria**. Levels of toxic substances in waters of the state may not exceed the applicable aquatic life criteria listed in Table 30.

(4) **Human Health Numeric Criteria**. The criteria for waters of the state listed in Table 40 are established to protect Oregonians from potential adverse health effects associated with long-term exposure to toxic substances associated with consumption of fish, shellfish, and water.

(5) To establish permit or other regulatory limits for toxic substances for which criteria are not included in Table 30 or Table 40, the department may use the guidance values in Table 33C, public health advisories, and other published scientific literature. The department may also require or conduct bio-assessment studies to monitor the toxicity to aquatic life of complex effluents, other suspected discharges, or chemical substances without numeric criteria.

(6) ……

**340-041-0033(7) Arsenic Reduction Policy Rule Language**

(7) Arsenic Reduction Policy: The inorganic arsenic criterion for the protection of human health from the combined consumption of organisms and drinking water is 2.1 micrograms per liter. While this criterion is protective of human health and more stringent than the federal maximum contaminant level (MCL) for arsenic in drinking water, which is 10 micrograms per liter, it nonetheless is based on a higher risk level than the Commission has used to establish other human health criteria. This higher risk level recognizes that much of the risk is due to naturally high levels of inorganic arsenic in Oregon’s waterbodies. In order to maintain the lowest human health risk from inorganic arsenic in drinking water, the Commission has determined that it is appropriate to adopt the following policy to limit the human contribution to that risk.

(a) The arsenic reduction policy established by this rule section does not become applicable for purposes of ORS chapter 468B or the federal Clean Water Act unless and until the numeric arsenic criteria established by this rule are approved by EPA pursuant to 40 CFR 131.21 (4/27/2000).

(b) It is the policy of the Commission that the addition of inorganic arsenic from new or existing anthropogenic sources to waters of the state within a surface water drinking water protection area be reduced the maximum amount feasible. The requirements of this rule section (OAR 340-041-0033(4**7**)) apply to sources that discharge to surface waters of the state with an ambient inorganic arsenic concentration equal to or lower than the applicable numeric inorganic arsenic criteria for the protection of human health.

(c) The following definitions apply to this section (OAR 340-041-0033(4**7**)):

(A) “Add inorganic arsenic” means to discharge a net mass of inorganic arsenic from a point source (the mass of inorganic arsenic discharged minus the mass of inorganic arsenic taken into the facility from a surface water source).

(B) A “surface water drinking water protection area,” for the purpose of this section, means an area delineated as such by DEQ under the source water assessment program of the federal Safe Drinking Water Act, 42 U.S.C. ¦ 300j 13. The areas are delineated for the purpose of protecting public or community drinking water supplies that use surface water sources. These delineations can be found at DEQ’s drinking water program website.

(C) “Potential to significantly increase inorganic arsenic concentrations in the public drinking water supply source water” means:

(i) to increase the concentration of inorganic arsenic in the receiving water for a discharge by 10 percent or more after mixing with the harmonic mean flow of the receiving water; or

(ii) as an alternative, if sufficient data are available, the discharge will increase the concentration of inorganic arsenic in the surface water intake water of a public water system by 0.021 micrograms per liter or more based on a mass balance calculation.

(d) Following the effective date of this rule, applications for an individual NPDES permit or permit renewal received from industrial dischargers located in a surface water drinking water protection area and identified by DEQ as likely to add inorganic arsenic to the receiving water must include sufficient data to enable DEQ to determine whether:

(A) The discharge in fact adds inorganic arsenic; and

(B) The discharge has the potential to significantly increase inorganic arsenic concentrations in the public drinking water supply source water.

(e) Where DEQ determines that both conditions in subsection (d) of this section (4**7**) are true, the industrial discharger must develop an inorganic arsenic reduction plan and propose all feasible measures to reduce its inorganic arsenic loading to the receiving water. The proposed plan, including proposed measures, monitoring and reporting requirements, and a schedule for those actions, will be described in the fact sheet and incorporated into the source’s NPDES permit after public comment and DEQ review and approval. In developing the plan, the source must:

(A) Identify how much it can minimize its inorganic arsenic discharge through pollution prevention measures, process changes, wastewater treatment, alternative water supply (for groundwater users) or other possible pollution prevention and/or control measures;

(B) Evaluate the costs, feasibility and environmental impacts of the potential inorganic arsenic reduction and control measures;

(C) Estimate the predicted reduction in inorganic arsenic and the reduced human health risk expected to result from the control measures;

(D) Propose specific inorganic arsenic reduction or control measures, if feasible, and an implementation schedule; and

(E) Propose monitoring and reporting requirements to document progress in plan implementation and the inorganic arsenic load reductions.

(f) In order to implement this section, DEQ will develop the following information and guidance within 120 days of the effective date of this rule and periodically update it as warranted by new information:

(A) A list of industrial sources or source categories, including industrial stormwater and sources covered by general permits, that are likely to add inorganic arsenic to surface waters of the State.

(i) For industrial sources or source categories permitted under a general permit that have been identified by DEQ as likely sources of inorganic arsenic, DEQ will evaluate options for reducing inorganic arsenic during permit renewal or evaluation of Stormwater Pollution Control Plans.

(B) Quantitation limits for monitoring inorganic arsenic concentrations.

(C) Information and guidance to assist sources in estimating, pursuant to paragraph (e)(C) of this section, the reduced human health risk expected to result from inorganic arsenic control measures based on the most current EPA risk assessment.

(g) It is the policy of the Commission that landowners engaged in agricultural or development practices on land where pesticides, fertilizers, or soil amendments containing arsenic are currently being or have previously been applied, implement conservation practices to minimize the erosion and runoff of inorganic arsenic to waters of the State or to a location where such material could readily migrate into waters of the State.

[ED. NOTE: Tables referenced are not included in rule text. Click here for a PDF copy of Table 30: Aquatic Life Toxics Criteria. Click here for a PDF copy of Table 40: Human Health Toxics Criteria.]

Stat. Auth.: ORS 468.020, 468B.030, 468B.035 & 468B.048  
Stats. Implemented: ORS 468B.030, 468B.035 & 468B.048  
Hist.: DEQ 17-2003, f. & cert. ef. 12-9-03; DEQ 3-2004, f. & cert. ef. 5-28-04; DEQ 17-2010, f. & cert. ef. 12-21-10; DEQ 8-2011, f. & cert. ef. 6-30-11; DEQ 10-2011, f. & cert. ef. 7-13-11

**340-041-0009 Bacteria**

(1) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) may not exceed the criteria described in paragraphs (a) and (b) of this paragraph:

(a) Freshwaters and Estuarine Waters Other than Shellfish Growing Waters:

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

(B) No single sample may exceed 406 E. coli organisms per 100 milliliters.

(b) Marine Waters and Estuarine Shellfish Growing Waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than ten percent of the samples exceeding 43 organisms per 100 ml.

(2) Raw Sewage Prohibition: No sewage may 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;

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

(4) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health may not be allowed;

(5) Effluent Limitations for Bacteria: Except as allowed in subsection (c) of this section, upon NPDES permit renewal or issuance, or upon request for a permit modification by the permittee at an earlier date, effluent discharges to freshwaters, and estuarine waters other than shellfish growing waters may not exceed a monthly log mean of 126 E. coli organisms per 100 ml. No single sample may exceed 406 E. coli organisms per 100 ml. However, no violation will be found, for an exceedance if the permittee takes at least five consecutive re-samples at four-hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample was taken and the log mean of the five re-samples is less than or equal to 126 E. coli. The following conditions apply:

(a) If the Department finds that re-sampling within the timeframe outlined in this section would pose an undue hardship on a treatment facility, a more convenient schedule may be negotiated in the permit, provided that the permittee demonstrates that the sampling delay will result in no increase in the risk to water contact recreation in waters affected by the discharge;

(b) The aquatic life criteria for chlorine established in the water quality toxic substances rule under OAR 340-041-0033 must be met at all times outside the assigned mixing zone;

(c) For sewage treatment plants that are authorized to use recycled water pursuant to OAR 340, division 55, and that also use a storage pond as a means to dechlorinate their effluent prior to discharge to public waters, effluent limitations for bacteria may, upon request by the permittee, be based upon appropriate total coliform limits as required by OAR 340, division 55:

**….**

**340-040-0020 Groundwater Quality Protection** **General Policies**

(1) Groundwater is a critical natural resource providing domestic, industrial, and agricultural water supply; and other legitimate beneficial uses; and also providing base flow for rivers, lakes, streams, and wetlands.

(2) Groundwater, once polluted, is difficult and sometimes impossible to clean up. Therefore, the EQC shall employ an anti-degradation policy to emphasize the prevention of groundwater pollution, and to control waste discharges to groundwater so that the highest possible water quality is maintained.

(3) All groundwaters of the state shall be protected from pollution that could impair existing or potential beneficial uses for which the natural water quality of the groundwater is adequate. Among the recognized beneficial uses of groundwater, domestic water supply is recognized as being the use that would usually require the highest level of water quality. Existing high quality groundwaters which exceed those levels necessary to support recognized and legitimate beneficial uses shall be maintained except as provided for in these rules.

(4) Numerical groundwater quality reference levels and guidance levels are listed in **Tables 1 through 3** of this Division. These levels have been obtained from the Safe Drinking Water Act, and indicate when groundwater may not be suitable for human consumption or when the aesthetic quality of groundwater may be impaired. They will be used by the Department and the public to evaluate the significance of a particular contaminant concentration, and will trigger necessary regulatory action. These levels should not be construed as acceptable groundwater quality goals because it is the policy of the EQC to maintain and preserve the highest possible water quality.

(5) For pollutant parameters for which numerical groundwater quality reference levels or guidance levels have not been established, or for evaluating adverse impacts on beneficial uses other than human consumption, the Department shall make use of the most current and scientifically valid information available in determining at what levels pollutants may affect present or potential beneficial uses. Such information shall include, but not be limited to, values set forth in OAR 340-041-0033 .

(6) The Department shall develop, implement and conduct a comprehensive groundwater quality protection program. The program shall contain strategies and methods for problem prevention, problem abatement and the control of both point and nonpoint sources of groundwater pollution. The Department shall seek the assistance of federal, state, and local governments in implementing the program.

**340-040-0080** **Numerical Groundwater Quality Reference Levels and Guidance Levels**

(1) The numerical groundwater quality reference levels and guidance levels contained in **Tables 1 through 3** of this Division are to be considered by the Department and the public in weighing the significance of a particular chemical concentration, and in determining the level of remedial action necessary to restore contaminated groundwater for human consumption. They are not to be construed as acceptable groundwater quality management goals. They are to be used by the Director and the EQC in establishing permit-specific and remedial action concentration limits according to the requirements of OAR 340-040-0030 through 340-040-0060.

(2) The Department shall periodically review information as it becomes available for establishing new numerical groundwater quality reference levels and guidance levels, and to ensure consistency with other statutorily mandated standards.

(3) Human consumption is recognized as the highest and best use of groundwater, and the use which usually requires the highest level of water quality. The numerical groundwater quality reference levels listed in **Tables 1**and**2** of this Division reflect the suitability of groundwater for human consumption.

(4) The numerical groundwater quality guidance levels listed in **Table 3** of this Division are for contaminants which do not adversely impact human health at the given concentrations. At considerably higher concentrations, human health implications may exist. These guidance levels are for contaminants that primarily affect the aesthetic qualities relating to the public acceptance of drinking water. The aesthetic degradation of groundwater may impair its beneficial use.

(5) For pollutant parameters for which numerical ground-water quality reference levels or guidance levels have not been established and listed in **Tables 1 through 3**, or for evaluating adverse impacts on beneficial uses other than human consumption, the Department shall make use of the most current and scientifically valid information available in determining at what levels pollutants may affect present or potential beneficial uses. Such information shall include, but not be limited to, values set forth in OAR 340-041-0033.

**Section 2: Corrections and Clarifications to NPS Regulations**

**Notes on Proposed Changes**

1. **340-041-0007** **Statewide Narrative Criteria**

Proposed change to this rule is based on the agreement between DEQ and Northwest Environmental Advocates related to OAR **340-041-0007 that was signed on October 2012.** In the letter, DEQ agrees to remove section (5) of OAR **340-041-0007 in the rulemaking process described in** the stipulated order on Nonpoint Source and Endangered Species Act Remedies issued by the United States District Court for the District of Oregon on February 28, 2012. DEQ in the letter agrees to include the removal of the section of the Statewide Narrative Criteria rule that describes how logging and forest management activities are subject to water quality standards and load allocations.

**2. 340-041-0028** **Temperature Rule**

Proposed changes to this rule is based on the stipulated order on Nonpoint Source and Endangered Species Act Remedies issued by the United States District Court for the District of Oregon on February 28, 2012. In the order, DEQ is directed to convene an advisory committee and request that it recommend that the Environmental Quality Commission (“EQC”) amend its regulations on or before the EQC’s June 2013 meeting. The changes that DEQ is directed to propose removes subsections of temperature rule that describe how the rule is implemented by nonpoint sources on agriculture and forestry on private, state, and federal lands. Under this rule, DEQ is also directed to remove a paragraph describing that nonpoint sources other than forestry and agriculture that are complying with their temperature management plans are deemed in compliance with the temperature rule.

**3. 340-041-0061** **Other Implementation of Water Quality Criteria**

Proposed changes to this rule is also based on the stipulated order on Nonpoint Source and Endangered Species Act Remedies issued by the United States District Court for the District of Oregon on February 28, 2012. In the order, DEQ is directed to convene an advisory committee and request that it recommend that the Environmental Quality Commission (“EQC”) amend its regulations on or before the EQC’s June 2013 meeting. The changes that DEQ is directed to propose removes sections of Other Implementation of Water Quality Criteria rule that describe how other implementation of water quality criteria rule is implemented by nonpoint sources on agriculture and forestry on private, state, and federal lands.

**Proposed Rule Revisions to Division 41**

**340-041-0007** **Statewide Narrative Criteria**

(1) Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must 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) Where a less stringent natural condition of a water of the State exceeds the numeric criteria set out in this Division, the natural condition supersedes the numeric criteria and becomes the standard for that water body. However, there are special restrictions, described in OAR 340-041-0004(9)(a)(D)(iii), that may apply to discharges that affect dissolved oxygen.

(3) For any new waste sources, alternatives that utilize reuse or disposal with no discharge to public waters must be given highest priority for use wherever practicable. New source discharges may be approved subject to the criteria in OAR 340-041-0004(9).

(4) No discharges of wastes to lakes or reservoirs may be allowed except as provided in section OAR 340-041-0004(9).

(6) Log handling in public waters must conform to current Commission policies and guidelines.

(7) Sand and gravel removal operations must be conducted pursuant to a permit from the Division of State Lands and separated from the active flowing stream by a watertight berm wherever physically practicable. Recirculation and reuse of process water must be required wherever practicable. Discharges or seepage or leakage losses to public waters may not cause a violation of water quality standards or adversely affect legitimate beneficial uses.

(8) Road building and maintenance activities must be conducted in a manner so as to keep waste materials out of public waters and minimize erosion of cut banks, fills, and road surfaces.

(9) In order to improve controls over nonpoint sources of pollution, federal, State, and local resource management agencies will be encouraged and assisted to coordinate planning and implementation of programs to regulate or control runoff, erosion, turbidity, stream temperature, stream flow, and the withdrawal and use of irrigation water on a basin-wide approach so as to protect the quality and beneficial uses of water and related resources. Such programs may include, but not be limited to, the following:

(a) Development of projects for storage and release of suitable quality waters to augment low stream flow;

(b) Urban runoff control to reduce erosion;

(c) Possible modification of irrigation practices to reduce or minimize adverse impacts from irrigation return flows;

(d) Stream bank erosion reduction projects; and

(e) Federal water quality restoration plans.

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

(11) 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 may not be allowed;

(12) 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 may not be allowed;

(13) Objectionable discoloration, scum, oily sheens, or floating solids, or coating of aquatic life with oil films may not be allowed;

(14) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch may not be allowed;

(15) Radioisotope concentrations may 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;

(16) Minimum Design Criteria for Treatment and Control of Wastes. Except as provided in OAR 340-041-0101 through 340-041-0350, and subject to the implementation requirements set forth in OAR 340-041-0061, prior to discharge of any wastes from any new or modified facility to any waters of the State, such wastes must be treated and controlled in facilities designed in accordance with the following minimum criteria.

(a) 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.

(A) Sewage wastes:

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

(ii) Sewage wastes must 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;

(iii) Positive protection must 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; and

(iv) More stringent waste treatment and control requirements may be imposed where special conditions make such action appropriate.

(B) Industrial wastes:

(i) After maximum practicable in-plant 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);

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

(I) The uses that are or may likely be made of the receiving stream;

(II) The size and nature of flow of the receiving stream;

(III) The quantity and quality of wastes to be treated; and

(IV) The presence or absence of other sources of pollution on the same watershed.

(iii) Where industrial, commercial, or agricultural effluents contain significant quantities of potentially toxic elements, treatment requirements may be determined utilizing appropriate bioassays;

(iv) Industrial cooling waters containing significant heat loads must be subjected to off-stream cooling or heat recovery prior to discharge to public waters;

(v) Positive protection must be provided to prevent bypassing of raw or inadequately treated industrial wastes to any public waters;

(vi) Facilities must be provided to prevent and contain spills of potentially toxic or hazardous materials.

Stat. Auth.: ORS 468.020, 468B.030, 468B.035, 468B.048  
Stats. Implemented: ORS 468B.030, 468B.035, 468B.048  
Hist.: DEQ 17-2003, f. & cert. ef. 12-9-03; DEQ 2-2007, f. & cert. ef. 3-15-07; DEQ 10-2011, f. & cert. ef. 7-13-11

**340-041-0028** **Temperature**

(1) Background. Water temperatures affect the biological cycles of aquatic species and are a critical factor in maintaining and restoring healthy salmonid populations throughout the State. Water temperatures are influenced by solar radiation, stream shade, ambient air temperatures, channel morphology, groundwater inflows, and stream velocity, volume, and flow. Surface water temperatures may also be warmed by anthropogenic activities such as discharging heated water, changing stream width or depth, reducing stream shading, and water withdrawals.

(2) Policy. It is the policy of the Commission to protect aquatic ecosystems from adverse warming and cooling caused by anthropogenic activities. The Commission intends to minimize the risk to cold-water aquatic ecosystems from anthropogenic warming, to encourage the restoration and protection of critical aquatic habitat, and to control extremes in temperature fluctuations due to anthropogenic activities. The Commission recognizes that some of the State's waters will, in their natural condition, not provide optimal thermal conditions at all places and at all times that salmonid use occurs. Therefore, it is especially important to minimize additional warming due to anthropogenic sources. In addition, the Commission acknowledges that control technologies, best management practices and other measures to reduce anthropogenic warming are evolving and that the implementation to meet these criteria will be an iterative process. Finally, the Commission notes that it will reconsider beneficial use designations in the event that man-made obstructions or barriers to anadromous fish passage are removed and may justify a change to the beneficial use for that water body.

(3) Purpose. The purpose of the temperature criteria in this rule is to protect designated temperature-sensitive, beneficial uses, including specific salmonid life cycle stages in waters of the State.

(4) Biologically Based Numeric Criteria. Unless superseded by the natural conditions criteria described in section (8) of this rule, or by subsequently adopted site-specific criteria approved by EPA, the temperature criteria for State waters supporting salmonid fishes are as follows:

(a) The seven-day-average maximum temperature of a stream identified as having salmon and steelhead spawning use on subbasin maps and tables set out in OAR 340-041-0101 to 340-041-0340: Tables 101B, and 121B, and Figures 130B, 151B, 160B, 170B, 220B, 230B, 271B, 286B, 300B, 310B, 320B, and 340B, may not exceed 13.0 degrees Celsius (55.4 degrees Fahrenheit) at the times indicated on these maps and tables;

(b) The seven-day-average maximum temperature of a stream identified as having core cold water habitat use on subbasin maps set out in OAR 340-041-101 to 340-041-340: Figures 130A, 151A, 160A, 170A, 180A, 201A, 220A, 230A, 271A, 286A, 300A, 310A, 320A, and 340A, may not exceed 16.0 degrees Celsius (60.8 degrees Fahrenheit);

(c) The seven-day-average maximum temperature of a stream identified as having salmon and trout rearing and migration use on subbasin maps set out at OAR 340-041-0101 to 340-041-0340: Figures 130A, 151A, 160A, 170A, 220A, 230A, 271A, 286A, 300A, 310A, 320A, and 340A, may not exceed 18.0 degrees Celsius (64.4 degrees Fahrenheit);

(d) The seven-day-average maximum temperature of a stream identified as having a migration corridor use on subbasin maps and tables OAR 340-041-0101 to 340-041-0340: Tables 101B, and 121B, and Figures 151A, 170A, 300A, and 340A, may not exceed 20.0 degrees Celsius (68.0 degrees Fahrenheit). In addition, these water bodies must have coldwater refugia that are sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the water body. Finally, the seasonal thermal pattern in Columbia and Snake Rivers must reflect the natural seasonal thermal pattern;

(e) The seven-day-average maximum temperature of a stream identified as having Lahontan cutthroat trout or redband trout use on subbasin maps and tables set out in OAR 340-041-0101 to 340-041-0340: Tables 121B, 140B, 190B, and 250B, and Figures 180A, 201A, 260A and 310A may not exceed 20.0 degrees Celsius (68.0 degrees Fahrenheit);

(f) The seven-day-average maximum temperature of a stream identified as having bull trout spawning and juvenile rearing use on subbasin maps set out at OAR 340-041-0101 to 340-041-0340: Figures 130B, 151B, 160B, 170B, 180A, 201A, 260A, 310B, and 340B, may not exceed 12.0 degrees Celsius (53.6 degrees Fahrenheit). From August 15 through May 15, in bull trout spawning waters below Clear Creek and Mehlhorn reservoirs on Upper Clear Creek (Pine Subbasin), below Laurance Lake on the Middle Fork Hood River, and below Carmen reservoir on the Upper McKenzie River, there may be no more than a 0.3 degrees Celsius (0.5 Fahrenheit) increase between the water temperature immediately upstream of the reservoir and the water temperature immediately downstream of the spillway when the ambient seven-day-average maximum stream temperature is 9.0 degrees Celsius (48 degrees Fahrenheit) or greater, and no more than a 1.0 degree Celsius (1.8 degrees Fahrenheit) increase when the seven-day-average stream temperature is less than 9 degrees Celsius.

(5) Unidentified Tributaries. For waters that are not identified on the “Fish Use Designations” maps referenced in section (4) of this rule, the applicable criteria for these waters are the same criteria as is applicable to the nearest downstream water body depicted on the applicable map. This section (5) does not apply to the “Salmon and Steelhead Spawning Use Designations” maps.

(6) Natural Lakes. Natural lakes may not be warmed by more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the natural condition unless a greater increase would not reasonably be expected to adversely affect fish or other aquatic life. Absent a discharge or human modification that would reasonably be expected to increase temperature, DEQ will presume that the ambient temperature of a natural lake is the same as its natural thermal condition.

(7) Oceans and Bays. Except for the Columbia River above river mile 7, ocean and bay waters may not be warmed by more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the natural condition unless a greater increase would not reasonably be expected to adversely affect fish or other aquatic life. Absent a discharge or human modification that would reasonably be expected to increase temperature, DEQ will presume that the ambient temperature of the ocean or bay is the same as its natural thermal condition.

(8) Natural Conditions Criteria. Where the department determines that the natural thermal potential of all or a portion of a water body exceeds the biologically-based criteria in section (4) of this rule, the natural thermal potential temperatures supersede the biologically-based criteria, and are deemed to be the applicable temperature criteria for that water body.

(9) Cool Water Species.

(a) No increase in temperature is allowed that would reasonably be expected to impair cool water species. Waters of the State that support cool water species are identified on subbasin tables and figures set out in OAR 340-041-0101 to 340-041-0340; Tables 140B, 190B and 250B, and Figures 180A, 201A and 340A.

(b) See OAR 340-041-0185 for a basin specific criterion for the Klamath River.

(10) Borax Lake Chub. State waters in the Malheur Lake Basin supporting the Borax Lake chub may not be cooled more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) below the natural condition.

(11) Protecting Cold Water.

(a) Except as described in subsection (c) of this rule, waters of the State that have summer seven-day-average maximum ambient temperatures that are colder than the biologically based criteria in section (4) of this rule, may not be warmed by more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the colder water ambient temperature. This provision applies to all sources taken together at the point of maximum impact where salmon, steelhead or bull trout are present.

(b) A point source that discharges into or above salmon & steelhead spawning waters that are colder than the spawning criterion, may not cause the water temperature in the spawning reach where the physical habitat for spawning exists during the time spawning through emergence use occurs, to increase more than the following amounts after complete mixing of the effluent with the river:

(A) If the rolling 60 day average maximum ambient water temperature, between the dates of spawning use as designated under subsection (4)(a) of this rule, is 10 to 12.8 degrees Celsius, the allowable increase is 0.5 Celsius above the 60 day average; or

(B) If the rolling 60 day average maximum ambient water temperature, between the dates of spawning use as designated under subsection (4)(a) of this rule, is less than 10 degrees Celsius, the allowable increase is 1.0 Celsius above the 60 day average, unless the source provides analysis showing that a greater increase will not significantly impact the survival of salmon or steelhead eggs or the timing of salmon or steelhead fry emergence from the gravels in downstream spawning reach.

(c) The cold water protection narrative criteria in subsection (a) do not apply if:

(A) There are no threatened or endangered salmonids currently inhabiting the water body;

(B) The water body has not been designated as critical habitat; and

(C) The colder water is not necessary to ensure that downstream temperatures achieve and maintain compliance with the applicable temperature criteria.

(12) Implementation of the Temperature Criteria.

(a) Minimum Duties. There is no duty for anthropogenic sources to reduce heating of the waters of the State below their natural condition. Similarly, each anthropogenic point and nonpoint source is responsible only for controlling the thermal effects of its own discharge or activity in accordance with its overall heat contribution. In no case may a source cause more warming than that allowed by the human use allowance provided in subsection (b) of this rule.

(b) Human Use Allowance. Insignificant additions of heat are authorized in waters that exceed the applicable temperature criteria as follows:

(A) Prior to the completion of a temperature TMDL or other cumulative effects analysis, no single NPDES point source that discharges into a temperature water quality limited water may cause the temperature of the water body to increase more than 0.3 degrees Celsius (0.5 Fahrenheit) above the applicable criteria after mixing with either twenty five (25) percent of the stream flow, or the temperature mixing zone, whichever is more restrictive; or

(B) Following a temperature TMDL or other cumulative effects analysis, waste load and load allocations will restrict all NPDES point sources and nonpoint sources to a cumulative increase of no greater than 0.3 degrees Celsius (0.5 Fahrenheit) above the applicable criteria after complete mixing in the water body, and at the point of maximum impact.

(C) Point sources must be in compliance with the additional mixing zone requirements set out in OAR 340-041-0053(2)(d).

(D) A point source in compliance with the temperature conditions of its NPDES permit is deemed in compliance with the applicable criteria.

(c) Air Temperature Exclusion. A water body that only exceeds the criteria set out in this rule when the exceedance is attributed to daily maximum air temperatures that exceed the 90th percentile value of annual maximum seven-day average maximum air temperatures calculated using at least 10 years of air temperature data, will not be listed on the section 303(d) list of impaired waters and sources will not be considered in violation of this rule.

(d) Low Flow Conditions. An exceedance of the biologically-based numeric criteria in section (4) of this rule, or an exceedance of the natural condition criteria in section (8) of this rule will not be considered a permit violation during stream flows that are less than the 7Q10 low flow condition for that water body.

(e) Other Nonpoint Sources. The department may, on a case-by-case basis, require nonpoint sources (other than forestry and agriculture), including private hydropower facilities regulated by a 401 water quality certification, that may contribute to warming of State waters beyond 0.3 degrees Celsius (0.5 degrees Fahrenheit), and are therefore designated as water-quality limited, to develop and implement a temperature management plan to achieve compliance with applicable temperature criteria or an applicable load allocation in a TMDL pursuant to OAR 340-042-0080.

(A) Each plan must ensure that the nonpoint source controls its heat load contribution to water temperatures such that the water body experiences no more than a 0.3 degrees Celsius (0.5 degree Fahrenheit) increase above the applicable criteria from all sources taken together at the maximum point of impact.

(B) Each plan must include a description of best management practices, measures, effluent trading, and control technologies (including eliminating the heat impact on the stream) that the nonpoint source intends to use to reduce its temperature effect, a monitoring plan, and a compliance schedule for undertaking each measure.

(C) The Department may periodically require a nonpoint source to revise its temperature management plan to ensure that all practical steps have been taken to mitigate or eliminate the temperature effect of the source on the water body.

(f) Compliance Methods. Anthropogenic sources may engage in thermal water quality trading in whole or in part to offset its temperature discharge, so long as the trade results in at least a net thermal loading decrease in anthropogenic warming of the water body, and does not adversely affect a threatened or endangered species. Sources may also achieve compliance, in whole or in part, by flow augmentation, hyporheic exchange flows, outfall relocation, or other measures that reduce the temperature increase caused by the discharge.

(j) Release of Stored Water. Stored cold water may be released from reservoirs to cool downstream waters in order to achieve compliance with the applicable numeric criteria. However, there can be no significant adverse impact to downstream designated beneficial uses as a result of the releases of this cold water, and the release may not contribute to violations of other water quality criteria. Where the Department determines that the release of cold water is resulting in a significant adverse impact, the Department may require the elimination or mitigation of the adverse impact.

(13) Site-Specific Criteria. The Department may establish, by separate rulemaking, alternative site-specific criteria for all or a portion of a water body that fully protects the designated use.

(a) These site-specific criteria may be set on a seasonal basis as appropriate.

(b) The Department may use, but is not limited by the following considerations when calculating site-specific criteria:

(A) Stream flow;

(B) Riparian vegetation potential;

(C) Channel morphology modifications;

(D) Cold water tributaries and groundwater;

(E) Natural physical features and geology influencing stream temperatures; and

(F) Other relevant technical data.

(c) DEQ may consider the thermal benefit of increased flow when calculating the site-specific criteria.

(d) Once established and approved by EPA, the site-specific criteria will be the applicable criteria for the water bodies affected.

[ED. NOTE: Tables referenced are available from the agency.]

Stat. Auth.: ORS 468.020, 468B.030, 468B.035 & 468B.048  
Stats. Implemented: ORS 468B.030, 468B.035 & 468B.048  
Hist.: DEQ 17-2003, f. & cert. ef. 12-9-03; DEQ 1-2007, f. & cert. ef. 3-14-07; DEQ 2-2007, f. & cert. ef. 3-15-07

**340-041-0061 Other Implementation of Water Quality Criteria**

(1) A waste treatment and disposal facility may not be constructed or operated and wastes may not be discharged to public waters without a permit from the department in accordance with ORS 468B.050.

(2) Plans for all sewage and industrial waste treatment, control, and disposal facilities must be submitted to the department for review and approval prior to construction as required by ORS 468B.055.

(3) Minimum design criteria for waste treatment and control facilities prescribed under this plan and other waste treatment and controls deemed necessary to ensure compliance with the water quality standards contained in this plan must be provided in accordance with specific permit conditions for those sources or activities for which permits are required and the following implementation program.

(a) For new or expanded waste loads or activities, fully approved treatment or control facilities, or both, must be provided prior to discharge of any wastes from the new or expanded facilities or conduct of the new or expanded activity.

(b) For existing waste loads or activities, additional treatment or control facilities necessary to correct specific unacceptable water quality conditions must be provided in accordance with a specific program and timetable incorporated into the waste discharge permit for the individual discharger or activity. In developing treatment requirements and implementation schedules for existing installations or activities, consideration will be given to the impact upon the overall environmental quality, including air, water, land use, and aesthetics.

(c) Wherever minimum design criteria for waste treatment and control facilities set forth in this plan are more stringent than applicable federal standards and treatment levels currently being provided, upgrading to the more stringent requirements will be deferred until it is necessary to expand or otherwise modify or replace the existing treatment facilities. Such deferral will be acknowledged in the permit for the source.

(d) Where planning, design, or construction of new or modified waste treatment and controls to meet prior applicable state or federal requirements is underway at the time this plan is adopted, such plans, design, or construction may be completed under the requirements in effect when the project was initiated. Upgrading to meet more stringent future requirements will be timed in accordance with section (3) of this rule.

(4) Confined animal feeding operations (CAFOs) are regulated under OAR 340-051-0005 through 340-051-0080 to minimize potential adverse effect on water quality (see also OAR 603-074-0005 through 603-074-0070).

(5) Programs for control of pollution from nonpoint sources when developed by the department or by other agencies pursuant to section 208 of the federal Clean Water Act and approved by the department will be incorporated into this plan by amendment via the same process used to adopt the plan unless other procedures are established by law.

(6) Where minimum requirements of federal law or enforceable regulations are more stringent than specific provisions of this plan, the federal requirements will prevail.

(7) Within the framework of statewide priorities and available resources, the department will monitor water quality within the basin for the purposes of evaluating conformance with the plan and developing information for additions or updates.

(8) The commission recognizes that the potential exists for conflicts between water quality management plans and the land use plans and resource management plans that local governments and other agencies are required to develop. If conflicts develop, the department will meet with the local governments or responsible agencies to resolve the conflicts. Revisions will be presented for adoption via the same process used to adopt the plan unless other specific procedures are established by law.

(9) The department will calculate and include effluent limits specified in pounds per day, which will be the mass load limits for biochemical oxygen demand or carbonaceous biochemical oxygen demand and total suspended solids in National Pollutant Discharge Elimination System permits issued to all sewage treatment facilities. These limits must be calculated as follows.

(a) Except as noted in paragraph (H) of this subsection, the following requirements apply to existing facilities and to facilities receiving departmental approval for engineering plans and specifications for new treatment facilities or treatment facilities expanding the average dry weather treatment capacity before June 30, 1992:

(A) During periods of low stream flows (approximately May 1 through October 31), the monthly average mass load expressed as pounds per day may not exceed the applicable monthly concentration effluent limit times the design average dry weather flow expressed in million gallons per day times 8.34. The weekly average mass load expressed as pounds per day may not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day may not exceed the monthly average mass load times 2.0.

(B) During the period of high stream flows (approximately November 1 through April 30), the monthly average mass load expressed as pounds per day may not exceed the monthly concentration effluent limit times the design average wet weather flow expressed in million gallons per day times 8.34. The weekly average mass load expressed as pounds per day may not exceed the monthly average mass load times 1.5. The daily mass load expressed in pounds per day may not exceed the monthly average mass load times 2.0.

(C) On any day that the daily flow to a sewage treatment facility exceeds the lesser hydraulic capacity of the secondary treatment portion of the facility or twice the design average dry weather flow, the daily mass load limit does not apply. The permittee must operate the treatment facility at highest and best practicable treatment and control.

(D) The design average wet weather flow used in calculating mass loads must be approved by the department in accordance with prudent engineering practice and must be based on a facility plan approved by the department, engineering plans and specifications approved by the department, or an engineering evaluation. The permittee must submit documentation describing and supporting the design average wet weather flow with the permit application, application for permit renewal, or modification request or upon request by the department. The design average wet weather flow is defined as the average flow between November 1 and April 30 when the sewage treatment facility is projected to be at design capacity for that portion of the year.

(E) Mass loads assigned as described in paragraphs (B) and (C) of this subsection will not be subject to OAR 340-041-0004(9);

(F) Mass loads as described in this rule will be included in permits upon renewal or upon a request for permit modification.

(G) Within 180 days after permit renewal or modification, a permittee receiving higher mass loads under this rule and having a separate sanitary sewer system must submit to the department for review and approval a proposed program and time schedule for identifying and reducing inflow. The program must include the following:

(i) Identification of all overflow points and verification that sewer system overflows are not occurring up to a 24-hour, five-year storm event or equivalent;

(ii) Monitoring of all pump station overflow points;

(iii) A program for identifying and removing all inflow sources into the permit holder's sewer system over which the permit holder has legal control; and

(iv) For those permit holders not having the necessary legal authority for all portions of the sewer system discharging into the permit holder's sewer system or treatment facility, a program and schedule for gaining legal authority to require inflow reduction and a program and schedule for removing inflow sources.

(H) Within one year after the department's approval of the program, the permit holder must begin implementation of the program.

(I) Paragraphs (A) through (G) of this subsection do not apply to the cities of Athena, Elgin, Adair Village, Halsey, Harrisburg, Independence, Carlton, and Sweet Home. Mass load limits have been individually assigned to these facilities.

(b) For new sewage treatment facilities or treatment facilities expanding the average dry weather treatment capacity and receiving engineering plans and specifications approval from the department after June 30, 1992, the mass load limits must be calculated by the department based on the proposed treatment facility capabilities and the highest and best practicable treatment to minimize the discharge of pollutants.

(c) Mass load limits as defined in this rule may be replaced by more stringent limits if required by waste load allocations established in accordance with a TMDL for treatment facilities discharging to water quality limited streams or if required to prevent or eliminate violations of water quality standards.

(d) If the design average wet weather flow or the hydraulic secondary treatment capacity is not known or has not been approved by the department at the time of permit issuance, the permit must include as interim mass load limits the mass load limits in the previous permit issued to the permit holder for the treatment facility. The permit must also include a requirement that the permit holder submit to the department the design average wet weather flow and hydraulic secondary treatment capacity within 12 months after permit issuance. Upon review and approval of the design flow information, the department will modify the permit and include mass load limits as described in subsection (a) of this section.

(e) Each permit holder with existing sewage treatment facilities otherwise subject to subsection (a) of this section may choose mass load limits calculated as follows:

(A) The monthly average mass load expressed as pounds per day may not exceed the applicable monthly concentration effluent limit times the design average dry weather flow expressed in million gallons per day times 8.34 pounds per gallon.

(B) The weekly average mass load expressed as pounds per day may not exceed the monthly average mass load times 1.5.

(C) The daily mass load expressed in pounds per day may not exceed the monthly average mass load times 2.0. If existing mass load limits are retained by the permit holder, the terms and requirements of subsection (a) of this section do not apply.

(f) The commission may grant exceptions to subsection (a) of this section. In allowing increased discharged loads, the commission must make the findings specified in OAR 340-041-0004(9)(a) for waste loads and the following findings:

(A) Mass loads calculated in subsection (a) of this section cannot be achieved with the existing treatment facilities operated at maximum efficiency at projected design flows; and

(B) There are no practicable alternatives to achieving the mass loads as calculated in subsection (a) of this section.

(12) Testing methods. The analytical testing methods for determining compliance with the water quality standards in this rule must comply with 40 CFR Part 136 or, if Part 136 does not prescribe a method, 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; if the department has published an applicable superseding method, testing must comply with the superseding method. Testing in accordance with an alternative method must comply with this rule if the department has published the method or has approved the method in writing.

(13) Reservoirs or managed lakes are deemed in compliance with water quality criteria for temperature, pH, or dissolved oxygen (DO) if all of the following circumstances exist.

(a) The water body has thermally stratified naturally or due to the presence of an impoundment.

(b) The water body has three observable layers, defined as the epilimnion, metalimnion, and hypolimnion.

(c) A layer exists in the reservoir or managed lake in which temperature, pH, and DO criteria are all met, and the layer is sufficient to support beneficial uses.

(d) All practicable measures have been taken by the entities responsible for management of the reservoir or managed lake to maximize the layers meeting the temperature, pH, and DO criteria.

(e) One of the following conditions is met:

(A) The streams or river segments immediately downstream of the water body meet applicable criteria for temperature, pH, and DO.

(B) All practicable measures have been taken to maximize downstream water quality potential and fish passage.

(C) If the applicable criteria are not met in the stream or river segment immediately upstream of the water body, then no further measurable downstream degradation of water quality has taken place due to stratification of the reservoir or managed lake.

(14) Compliance schedules. In a permit issued under OAR 340, division 045 or in a water quality certification under OAR 340, division 48, the department may include compliance schedules for the implementation of effluent limits derived from water quality criteria in this division. A compliance schedule in an NPDES permit is allowed only for water quality based effluent limits that are newly applicable to the permit and must comply with provisions in 40 CFR ¦122.47 (including the requirement that water quality criteria must be achieved as soon as possible).

Stat. Auth.: ORS 468.020, 468B.030, 468B.035 & 468B.048  
Stats. Implemented: ORS 468B.030, 468B.035 & 468B.048  
Hist.: DEQ 17-2003, f. & cert. ef. 12-9-03; DEQ 3-2004, f. & cert. ef. 5-28-04; DEQ 10-2011, f. & cert. ef. 7-13-11