

State of Oregon

Department of Environmental Quality Memorandum

**Date:** February 5, 2007  
**To:** Environmental Quality Commission  
**From:** Stephanie Hallock, Director  
**Subject:** Agenda Item G, Rule Adoption: Revision of Oregon Temperature and Mixing Zone Rules to Align with EPA Action.  
February 22, 2007 EQC Meeting

**Why this is Important** Under the federal Clean Water Act, States adopt water quality standards to protect public health, fish and the environment. Water quality standards identify the levels of chemical substances and the physical characteristics of water bodies needed to protect the uses of the State's waters. It is important to DEQ and the public that water quality standards protect human health and the environment and may be implemented practically.

**Purpose of Rulemaking** The purpose of this rulemaking is to align Oregon's water quality standards rules (OAR Chapter 340, Division 41) with EPA action.

**Department Recommendation** The Department of Environmental Quality (DEQ) recommends that the Environmental Quality Commission (EQC) adopt the proposed rule revisions, shown in Attachment A-2, to do the following:

- 1) Revise Oregon's temperature criteria for oceans and bays, natural lakes, Borax Lake chub and cool water species, which were disapproved by EPA in 2006 because EPA could not conclude that the criteria would protect aquatic life. See OAR 340-041-0028(6), (7), (9) and (10).
- 2) Repeal provisions of the mixing zone rule that established less stringent mixing zone requirements in certain circumstances; e.g. a receiving stream with low summer stream flow that would benefit from the added water provided by the treated effluent. These provisions were disapproved by EPA in 2004. See OAR 340-041-0053(2) (h).

When DEQ requested public comment on the proposed rules, the rulemaking package also included corrections and clarifications to December 2003 and May 2004 rulemakings. The rule corrections and clarifications are proposed for EQC adoption under agenda item H on February 22, 2007.

Additionally, the rulemaking package released for public comment included revisions to the turbidity criteria. DEQ is not proposing changes to the turbidity criteria at this time. DEQ decided to do further work on the turbidity standard, including obtaining review from the Independent Multi-Disciplinary Science Team and additional public review.

**Background –  
General**

The federal Clean Water Act (CWA) requires that states adopt water quality standards to protect fish and aquatic life, human health and other beneficial uses of the state's waters. Oregon law gives the EQC the authority to adopt water quality standards by administrative rule in order to fulfill this federal requirement.

The Environmental Protection Agency (EPA) is required to review standards adopted by the state. EPA has the authority to disapprove state standards if EPA concludes the standards do not adequately protect the uses of the state's waters. If EPA does not approve a water quality standard, the state is given the opportunity to amend it. If the state chooses to not amend the disapproved rule, EPA must adopt a standard for the state that they determine will protect the use. DEQ and EPA discussed amendments that would be satisfactory to both agencies. DEQ recommends that the EQC amend the disapproved standards rather than wait for EPA to impose standards on Oregon.

DEQ uses water quality standards to:

1. Limit pollution in State waters by requiring cities and businesses to obtain a permit when it is necessary to release pollutants into the environment;
2. Certify that certain activities, such as dredge and fill activities and hydroelectric dams and diversions, will be done in a manner that protects water quality;
3. Assess the quality of the State's waters; and
4. Develop plans for restoring impaired waters (Total Maximum Daily Loads, TMDLs).

**Background –  
Temperature  
Criteria**

DEQ's 2003 Revisions to the Temperature Standards

In December, 2003, the EQC adopted temperature standards that included criteria for oceans and bays, natural lakes, Borax Lake chub and cool water species. These criteria allow a biologically insignificant (0.3°C) increase (decrease for Borax Lake chub) from the "ambient" water temperature due to human activity. "Ambient" temperature refers to the current water temperature measured upstream of or prior to the proposed discharge or activity. Prior to 2003, the criterion for ocean and bay (marine) waters prohibited "a significant increase above natural background temperatures." The pre-2003 criterion for natural lakes was "no measurable surface water temperature increase resulting from human activities." There were no

criteria for warm water (Borax Lake chub) or cool water species prior to 2003.

With the 2003 revisions, DEQ attempted to make the criteria more clear and consistent, simplify implementation, add criteria for cool and warm water species, and provide reasonable protection for these water bodies. The Department thought the 2003 criteria were appropriate because:

1. Ambient temperature can be measured and, therefore, the criteria would be relatively easy to implement. A criterion based on “natural condition” presents the difficulty of estimating and debating the “natural” condition.
2. It is unlikely that human activity has significantly altered the temperature of natural lakes, ocean waters or bays.
3. Cool water species (e.g. chub, suckers) are more tolerant of varied temperature conditions than cold water species (i.e. salmon and trout).
4. There are few stream reaches in Oregon designated for cool water use (9 cool water reaches in river basins and additional streams in the State’s two interior lakes basins). Most streams contain cold-water fish, such as trout. By protecting cold water fish, the criteria for these cold water streams also protect cool water species.

DEQ submitted revised temperature standards to EPA in December 2003. EPA approved most of the new temperature standards in March of 2004, but did not act on the criteria for natural lakes, oceans and bays, Borax Lake chub and cool water species. EPA indicated in 2005 that they would likely disapprove these four criteria and DEQ began discussions with them about revisions to address their concerns.

#### EPA Disapproval of DEQ’s Revised Temperature Criteria

On November 28, 2006, EPA disapproved the State’s temperature criteria for oceans and bays, natural lakes, Borax Lake chub and cool-water species [OAR 340-041-0028(6) (7), (9) and (10)]. EPA concluded that these criteria do not ensure that aquatic life uses will be protected because the criteria rely on the “ambient” condition. Ambient water temperature may have been affected by human activity and may change over time. EPA prefers that the criteria be based on “natural condition.”

DEQ’s discussions with EPA, which began in 2005, led to the revisions now being proposed. DEQ considers the proposed revisions a compromise that addresses EPA concerns and partially addresses DEQ concerns about implementation.

**Effect of  
Proposed Rules –  
Temperature  
Criteria**

The proposed rule amendments, shown on pages 21-22 of Attachment A-2 [OAR 340-041-0028(6) (7), (9) and (10)], do the following:

1. Revise the temperature criteria for natural lakes, oceans and bays and Borax Lake chub to allow a 0.3°C increase in temperature from the “natural condition” rather than the “ambient” temperature. The rule language states that DEQ will assume the ambient and natural conditions are the same for these water bodies unless there has been some human modification or activity that would reasonably be expected to alter the temperature of the water body.
2. Revise the temperature criterion for cool water species from a limited human-caused increase above the ambient temperature, to a general narrative that prohibits an increase in temperature that would impair cool water species.
3. Add a site specific temperature criterion for the cool water reach of the Klamath River that allows a 0.3°C increase above the “natural background.” The rule defines the “natural background” condition in this discrete case as the temperature of the water as it exits Klamath Lake plus any natural warming or cooling that occurs downstream.

The site specific criterion was added for the cool water reach of the Klamath River because there are four facilities that directly discharge wastewater to this reach and the site specific criterion, which will protect the cool water use, will be easier to implement than the proposed narrative cool water criterion. In addition, because the Klamath River originates at Klamath Lake, DEQ can use the temperature of the water exiting the lake as a basis for the “natural background” temperature of this reach.

DEQ has worked with EPA on the proposed revisions and followed the guidance provided in its disapproval letter. EPA Region 10 has indicated that it will be able to approve the proposed revisions.

**Background –  
Alternate Mixing  
Zones**

1997 Alternate Mixing Zone Rules

In 1997, EQC adopted rules allowing DEQ to approve larger mixing zones for permitted discharges in certain circumstances [OAR 340-041-0053(h) shown on pages 30-33 of Attachment A-2]. One circumstance was when a city could demonstrate that the discharge created an overall environmental benefit, even though the city would need to use a larger area of the receiving stream for mixing before water quality standards would be met.

The alternate mixing zone provisions also applied to constructed or man-made water courses, such as canals or ditches. In such cases, the rules allowed a larger mixing zone in the ditch or canal, with conditions, as long as water quality standards were met when the flow reached the natural stream.

### EPA Disapproval of Alternate Mixing Zone Rules

Because regulatory mixing zone rules are part of the water quality standards rules, they are subject to EPA approval. EPA disapproved the alternate mixing zone provisions in October, 2004. EPA concluded that the alternate mixing zones would not assure that designated uses are protected in the water body as a whole, which is a requirement for allowing a mixing zone. EPA will not adopt an alternate mixing zone rule for the state. Oregon's remaining mixing zone rules describe DEQ's procedures for establishing mixing zones.

**Effect of  
Proposed Rules –  
Alternate Mixing  
Zones**

The proposed repeal of the 1997 alternate mixing zone provisions is needed to align the rule language with EPA action. These provisions were disapproved by EPA in October, 2004. Therefore, they are no longer effective rules under the Clean Water Act and are not being implemented.

The effect of EPA's disapproval was limited as the rule had been used for only a few sources. The potential impact of not having an alternate mixing zone option is higher wastewater treatment and disposal costs for businesses and communities that discharge to small streams. DEQ does not plan to develop new alternate mixing zone rules. The remaining mixing zone rules apply (OAR 340-41-0053).

**Commission  
Authority**

The EQC has authority to take this action under ORS 468.020, 468B.010, 468B.015, 468B.030, 468B.035, and 468B.048.

**Stakeholder  
Involvement**

DEQ did not assemble an advisory committee to assist in developing the proposed rule amendments. Given the Department's limited resources for water quality standards work and the narrow scope of this rulemaking – to respond to EPA's disapproval of 5 specific provisions - DEQ provided stakeholder involvement through an opportunity for public comment.

**Public Comment**

A public comment period extended from October 17, 2005 to February 6, 2006 and included 6 public hearings, located in Portland, Eugene, North Bend, Bend, Grants Pass and Baker City. A summary of public comment and the agency responses are provided in Attachment B. Hearing officer reports are provided in Attachment C. These documents contain comments about rule corrections, which are addressed separately in Agenda Item H for this same EQC meeting, February 22, 2007. You will also see comments about turbidity in Attachment C, which do not relate to this rulemaking.

DEQ released several proposed revisions to the water quality standards rules (Division 41) for public comment at this time, including the revised temperature criteria, mixing zone rule, turbidity criteria and numerous corrections and clarifications.

Eleven people provided approximately 28 comments on the temperature and mixing zone rule revisions. Most of the public comment pertained to the proposed turbidity criteria revisions, which are not part of this rulemaking.

**Next Steps**

Rule Effective Dates

The repeal of the alternative mixing zone requirements [OAR 340-041-0053(h)] will be effective on the date the revised rule is filed with the Secretary of State. We expect to file the rule in March, 2007 if the EQC adopts the amendments on February 22, 2007.

The temperature criteria revisions will be effective upon approval by EPA.

DEQ has already stopped implementing the alternate requirements in the mixing zone rule.

Implementing the Rule

In cases where DEQ must estimate and possibly debate the “natural condition” of the water body, implementation of the revised temperature criteria for natural lakes, ocean waters and bays will be more difficult and resource intensive to implement than the 2003 criteria. However, for the following reasons, DEQ expects this extra effort will be required in very few cases:

1. There are relatively few permitted sources discharging into oceans, bays or natural lakes at this time, and

<u>Water body type</u>	<u>Discharge permits</u>
Ocean and bays	about 29
Natural Lakes	1
Borax Lake	0

2. For many ocean waters, bays and natural lakes, there have been no human modifications or discharges that would be expected to have altered the natural temperature of the water body. For these water bodies, the Department will presume the current condition is the natural condition and will not undertake to model or otherwise estimate a natural condition different from the current ambient temperatures.

The pre-2003 criteria for oceans and bays (marine waters) also limited increases in temperature from natural conditions. Therefore, implementation of the revised criterion for ocean and bay waters will be consistent with prior practice.

The revised cool water species criterion will be more difficult and time consuming to implement than the 2003 criterion, because it requires site

specific information and professional judgment. Again, however, we expect this additional effort will be required in only a few cases. There are currently 5 permitted sources (1 major and 4 minor) that discharge into cool water streams other than the Klamath River. There are 4 permitted sources (3 major and 1 minor) that discharge to the cool water reach of the Klamath River, which has a more specific criterion.

A rule implementation plan is available upon request.

**Attachments**

- A. Proposed Rule Revisions
  - 1. Summary of Proposed Corrections and Clarifications to OAR 340-041, Water Quality Standards: Beneficial Uses, Policies and Criteria for Oregon (Applicable to Agenda Item H only)
  - 2. Proposed Rule Revisions (redlined version)  
**Note:** Revisions for this agenda item and also Agenda Item H are contained in this same attachment because of the overlap. Revisions for temperature and mixing zone standards are in blue.
- B. Summary of Public Comments and Agency Responses
- C. Presiding Officer's Reports on 6 Public Hearings
- D. Relationship to Federal Requirements
- E. Statement of Need and Fiscal and Economic Impact
- F. Land Use Evaluation Statement
- G. Water Quality Standards Fact Sheet

**Available Upon Request**

- 1. Legal Notice of Hearing
- 2. Cover Memorandum from Public Notice
- 3. Written Comment Received
- 4. Rule Implementation Plan
- 5. EPA letter to DEQ disapproving alternate mixing zone requirements (October, 2004).
- 6. EPA letter to DEQ disapproving temperature criteria for natural lakes, oceans & bays, Borax Lake chub and cool water species (November 28, 2006).

Approved:

Section: \_\_\_\_\_

Division: \_\_\_\_\_

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