

State of Oregon
Department of Environmental Quality

Memorandum

Date: April 29, 2004

To: Environmental Quality Commission

From: Stephanie Hallock, Director

Subject: Agenda Item B, Rule Adoption: Water Quality Standards, Including Toxic Pollutants Criteria, OAR Chapter 340, Division 41, May 20-21, 2004, EQC Meeting

Department Recommendation The Department recommends that the Environmental Quality Commission (Commission) revise the rules in OAR Chapter 340, Division 041 establishing water quality criteria for toxic pollutants and requirements for implementing water quality standards as presented in Attachment A.

Background and Need for Rulemaking The proposed rules update Oregon's water quality criteria for toxic pollutants. This action is being pursued for two reasons. First, it supports the agency's strategic direction to protect human health and the environment from toxics. Second, the federal Clean Water Act (CWA) requires states to periodically review water quality criteria and incorporate the latest scientific information, including the US Environmental Protection Agency (EPA) recommendations. These criteria provide the framework for the nation's efforts to control water pollution by articulating goals and benchmarks for water quality. Waters exceeding criteria are considered "polluted" while those achieving compliance are "clean." Water quality criteria are used for regulatory purposes in National Pollutant Discharge Elimination System (NPDES) point source permits, CWA Section 401 certification decisions, the CWA Section 303(d) impaired waters listing process, and development of total maximum daily loads (TMDLs). If Oregon fails to adopt water quality criteria protective of beneficial uses, then EPA can promulgate water quality criteria for the state.

The Commission adopted Oregon's existing water quality criteria for toxic pollutants in 1991. These criteria were based on national criteria recommended by EPA. EPA has since revised the national recommendations several times, most recently in 2002. The proposed criteria incorporate all of EPA's currently recommended criteria for toxic pollutants except for maintaining Oregon's current criteria for a) mercury, because of concerns that the revised criteria are not protective of threatened or endangered populations of salmonids and b) lindane, silver, and endosulfan because the Department disagrees with the basis for withdrawing them as EPA recommends. The Department used the best and latest scientific information in developing the proposed rule changes. Where the latest research (as incorporated into the EPA national

recommendations) indicated that different criteria are protective of beneficial uses, DEQ changed the criteria, in most cases making them more stringent but in some less stringent.

The proposed amendments also address two implementation issues. First, the proposed rules recognize that some Oregon waters stratify (i.e., divide into layers) either naturally or due to the presence of a dam (e.g. Lake Billy Chinook behind Round Butte dam), and that when this stratification occurs, it may prevent the water body from meeting standards throughout the entire water column. For example, a stratified water body may violate the temperature criteria at or near the surface but be in compliance at depth. Similarly, the water body may violate dissolved oxygen criteria in a bottom layer but be in compliance above. The proposed rule clarifies the Department's intent to consider the water body as not impaired if the sole reason for exceedance is its stratified condition. While the rule recognizes these physical and chemical realities, it also makes clear that sources must maximize the volume of layers that are capable of meeting the applicable criteria and supporting designated beneficial uses.

Second, according to federal law, unless state water quality standards specifically allow for the use of compliance schedules, point sources must immediately comply with new or revised water quality criteria. The proposed rule clarifies that the Department has the authority to include compliance schedules in permits and makes express some requirements that exist under federal law. The compliance schedule rule allows the Department to incorporate reasonable schedules into the permits themselves, thereby limiting the source's legal liability during the schedule and reducing the Department's workload. This tool furthers the Governor's directive to streamline regulatory requirements without weakening environmental protection of the state's waters.

Effect of Rule

The proposed amendments to OAR 340-041-0033 revise water quality criteria for over 100 toxic pollutants. Specifically, the proposed rules:

- ◇ Revise 60 criteria for 20 pollutants to protect aquatic life.
- ◇ 218 criteria for 114 pollutants to protect human health.
- ◇ Clarify the distinction between water quality criteria and water quality guidance values.

To implement the new criteria, the Department will develop guidance to permit writers for determining data submission requirements for dischargers at the time sources apply for new or renewed permits. The Department will also develop guidance for implementing the new toxics criteria in TMDLs. The permit evaluation process is called Reasonable Potential Analysis (RPA). Municipalities, industries, and businesses likely to discharge toxics will need to spend an estimated \$2000 to \$3000 every five years (i.e. the usual permit cycle) to provide data to the Department for determining

whether effluent limits for toxics need to be specified in permits. The Department will focus RPA efforts on facilities that the Department anticipates will have toxics in their discharge. For example, major industrial sources or municipalities with pretreatment programs will likely receive a more detailed RPA than minor municipal sources. If RPA indicates further requirements for monitoring or upgrading of treatment facilities to address potential violations of criteria, then these sources might need to spend substantial sums of money to address toxics in their wastestreams. Some funds for capital improvements may be available through the State Revolving Fund. The potential monetary benefit to society due to the protection of beneficial uses (including human health and aquatic life) from toxic pollution has not been quantified.

The proposed amendments to OAR 340-041-0061 and OAR 340-041-0002:

- ◊ Clarify that stratified waters will not be considered impaired for temperature, dissolved oxygen, or pH so long as they comply with water quality criteria in at least one of the strata in order to protect beneficial uses.
- ◊ Clarify the Department's authority to establish compliance schedules in permits allowing permit holders a reasonable period to comply with new or revised water quality criteria.

Commission Authority

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

Stakeholder Involvement

In December 1999, the Department began working with the Water Quality Standards Policy Advisory Committee (PAC) on revisions to Oregon's water quality standards. The PAC focused intensely on water quality criteria for toxic pollutants in meetings from January 2001 through December 2002 and tracked the Department's progress through November 2003. In addition, the Department worked with a toxics technical advisory committee (TAC) from May 2001 through July 2002 to review EPA-recommended criteria and other scientific literature and to make technical recommendations to the Department and the PAC. Although TAC recommendations were unanimous, consensus recommendations by the PAC were reached only on aquatic life criteria for endosulfan, freshwater chronic lindane, and freshwater chronic silver. The PAC thoroughly debated the ramifications of the remainder of the toxics package but was unable to come to consensus on the issues of 1) updating most aquatic life criteria to the EPA minimum recommendation, 2) total recoverable vs. dissolved metals criteria, 3) toxic equivalency factor criteria for dioxins and furans, and 4) the fish consumption rate used to calculate human health criteria. The rulemaking on stratified waters and on compliance schedules was also discussed with the PAC. Members and reports of the policy and toxics technical advisory committees are identified in Attachment C.

Public Comment The Department provided an 88-day formal public comment period and held six public hearings in three locations around the State. The public comment period extended from June 2, 2003, through August 29, 2003, including a four-week extension from the original closing on August 1, 2003, and included public hearings in Bend, Roseburg, and Portland. Fifty persons or organizations submitted written comments. The major comments are reflected in the “Key Issues” below. The final rules were revised to address these and other questions, suggestions, and concerns. A summary of all comments and the Department’s responses are provided in Attachment B.

Key Issues 1. *Should the human health criteria for toxic pollutants be derived using a fish consumption rate higher than the national recommendation of 17.5 g/day?*

Recommendation: The Department recommends adopting criteria for the protection of human health based on the nationally recommended fish consumption rate of 17.5 g/day. There is a lack of solid technical information on fish consumption rates for the general Oregon population and defaulting to the nationally recommended rate is consistent with EPA guidelines for deriving human health criteria. In addition, the use of 17.5 g/day in calculating the proposed criteria achieves a nearly three-fold increase in stringency over the use of 6.5 g/day in current criteria and results in minimally acceptable criteria for EPA approval. Finally, the proposed criteria are within EPA guidelines for acceptable risk to more highly exposed subgroups, such as the Columbia River tribes, which are known to consume fish at a higher rate.

2. *Should the aquatic life metals criteria be expressed as "total recoverable" or "dissolved" concentrations?*

Recommendation: The Department recommends metals criteria for aquatic life be expressed as “dissolved,” rather than “total recoverable” concentrations. “Dissolved” metal refers to metal in the water column that upon sampling readily passes through a filter. “Total recoverable” metal refers to the “dissolved” portion plus metal in the water column that is bound to sediment or other constituents. “Dissolved” metals criteria are consistent with EPA’s latest recommendations, although they are less stringent than “total recoverable” metals criteria. Much more is known about the toxicity of “dissolved” metals than metal bound to sediment or other constituents.

The Department initially proposed “total recoverable” metal for public comment and received much comment from industries and municipalities that the environmental benefit associated with “total recoverable” metals criteria did not justify the cost. The Department agrees with EPA’s national recommendation that the “dissolved” metals criteria are adequate to fully

protect all designated beneficial uses. Although the EQC has authority to adopt greater protection, the Department does not believe that increased costs associated with this additional protection are appropriate at this time.

3. Should the Department maintain the current aquatic life criteria for mercury?

Recommendation. The Department initially proposed for public comment adoption of EPA's latest aquatic life criteria for mercury. However, the Department now believes that issues raised by NOAA-Fisheries and US Fish & Wildlife Service in the Biological Opinion on the 2000 California Toxics Rule resonate in Oregon concerning the protectiveness of these criteria for threatened and endangered salmonids in the state's waters. The Department is aware of efforts by EPA and the federal fisheries services to develop new aquatic life criteria for mercury. Therefore, the Department is proposing to maintain the state's current criteria and review EPA's new criteria for possible adoption in the future.

4. Should the Department adopt a toxic equivalency factor (TEF) approach for dioxin-like compounds?

Recommendation: Currently, EPA's summary table of recommended criteria only contains criteria for one form of dioxin, 2,3,7,8-TCDD. Consequently, Oregon only has numeric criteria for this one form of dioxin. However, EPA has published a methodology for states to voluntarily adopt criteria for a mixture of 2,3,7,8-TCDD and other dioxin-like compounds based on their relative toxicity to 2,3,7,8-TCDD. If adopted, sources of these compounds would be required to meet a single numeric concentration representing the mixture of dioxin-like compounds.

The scientific community broadly agrees that 1) dioxins and furans often co-exist in wastewater streams; 2) a number of dioxins and furans (as well as other chemicals) cause toxic responses similar to responses to 2,3,7,8-TCDD, although the chemicals vary in their potency; and 3) these chemicals have been detected in environmental samples in Oregon. Nevertheless, few states (e.g. the Great Lakes states) have adopted criteria using a toxic equivalency factor (TEF) approach for dioxins and furans. The Department proposed this TEF approach for comment as an alternative to simply updating the 2,3,7,8-TCDD criteria. The commenters from environmental groups and Native American tribes favor adopting a TEF-approach; however, commenters from industry favor updating the existing criteria rather than adopting the TEF approach. They were concerned that the TEF approach would result in significantly higher costs that should not be borne during the state's general economic downturn.

The Department has concluded that the numeric criteria for 2,3,7,8-TCDD alone used in conjunction with the narrative toxics criteria for other related

chemicals is the best approach given the uncertainties surrounding the availability of adequate resources in both the Department and regulated community to implement the TEF approach. Although EPA acknowledges the validity of the TEF approach in its national recommendations to states, the table of recommended criteria contains values only for 2,3,7,8-TCDD. While the EQC has authority to adopt a criterion that provides greater protection, the Department does not believe that increased resource requirements associated with the TEF approach are appropriate at this time.

5. Should the Department propose numeric criteria for pollutants, especially pesticides, for which EPA has yet to develop recommendations?

Recommendation: The Department does not recommend adopting numeric criteria for pesticides for which EPA has not recommended criteria because there is insufficient information for deriving such numeric criteria. The Department relies heavily on EPA for recommendations on numeric criteria. The process that EPA uses to derive criteria requires rigorous data; only a few pesticide pollutants satisfy these requirements. The Department is proposing numeric criteria for all pollutants for which EPA has adopted numeric criteria but will continue to rely on the existing narrative toxics criterion to address other pollutants.

6. Will adoption of the new water quality toxics criteria create an unreasonable implementation burden on permitted sources?

Adoption of these criteria will not require all NPDES permit holders to test their effluent for the entire set of toxic pollutants, nor will water quality-based effluent limits be set for all parameters. The Department plans to focus testing on dischargers with the greatest potential to have toxic pollutants in their discharge. This is likely to include major industrial facilities and municipalities that receive significant industrial discharges or have a pretreatment program. To the extent that these facilities have not implemented controls or monitoring for the existing toxics criteria, these facilities will bear increased costs to meet the expectations of this rule.

7. Does the Department anticipate difficulty in securing federal approval for the proposed revisions to the toxics criteria?

Based on the federal consultation process over compliance of the California Toxics Rule (promulgated in 2000) with the Endangered Species Act, the Department expects that NOAA-Fisheries and the US Fish & Wildlife Service might raise concerns in consultation with EPA on the proposed rulemaking regarding 1) the protectiveness of any of the proposed criteria for aquatic life that are less stringent than current criteria, 2) the protectiveness of dissolved metals criteria for aquatic life and 3) the protectiveness of the selenium criteria for aquatic life, regardless of form. EPA is currently consulting with the NOAA-Fisheries and the US Fish & Wildlife Service on approval of Idaho's

adoption of national recommended water quality criteria from 1992. Given the length of time required for still-pending approval of Idaho's criteria, it is reasonable to assume that some of Oregon's proposed criteria may not receive federal approval for a year or more.

Next Steps

Once adopted, these rules will be filed with the Secretary of State. Although the rules on stratified waters and compliance schedules will be effective upon filing, OAR 340-041-0033 provides that the revised toxics criteria will become effective on February 15, 2005. The Department will forward rules pertaining to water quality criteria to EPA for review and approval. Before approving the criteria, EPA will seek consultation under the Endangered Species Act with U.S. Fish and Wildlife Service and NOAA-Fisheries on those portions of the rules that affect threatened and endangered species (e.g. aquatic life criteria for toxic pollutants).

Following adoption of the rules, the Department will develop and present internal and external training on what the new rules cover and how they will be used in regulatory decisions. The rulemaking implementation plan is available on request.

Attachments

- A. Proposed Rule Revisions
- B. Summary of Public Comments and Agency Responses
- C. Advisory Committee Membership and Report
- D. Presiding Officer's Report on Public Hearings
- E. Relationship to Federal Requirements Questions
- F. Statement of Need and Fiscal and Economic Impact
- G. Land Use Evaluation Statement
- H. Water Quality Criteria for Toxic Pollutants Issue Paper

Available Upon Request

- 1. Legal Notice of Hearing
- 2. Cover Memorandum from Public Notice
- 3. Written Comment Received
- 4. Rulemaking Implementation Plan

Approved:

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