

State of Oregon  
Department of Environmental Quality

Memorandum

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**Date:** Sept. 24, 2019

**To:** Environmental Quality Commission

**From:** Richard Whitman, Director

**Subject:** Agenda item F, Informational item: Total Dissolved Gas standard for the Columbia River  
Sept. 26-27, 2019, EQC meeting

**Why this is important** DEQ will update the commission on the U.S. Army Corps of Engineers' request for a total dissolved gas standard modification increase to 125 percent of barometric pressure at the Columbia River dams. DEQ will also provide an overview of the draft commission order related to that request. Co-presenters for this item are the Corps, who will present information on its operations, and Oregon Department of Fish and Wildlife, who will describe benefits and risks associated with allowing 125 percent total dissolved gas during the spring spill period.

**Background** The current total dissolved gas standard is 110 percent. The commission has granted modifications of 120 percent for fish passage since 1996. The Corps has requested a 125 percent total dissolved gas standard modification to benefit fish passage and align with the 2019-2021 Spill Operation Agreement between the Corps, Bonneville Power, Washington and Oregon (also referred to as the flexible spill agreement), which creates a legal framework for maximizing spill during daily periods of low hydropower demand. The draft order allows the standard modification to be in effect for 2020 and 2021, the remaining years the flexible spill agreement may be in place.

The following is the timeline for bringing the request to the commission:

- Oct. 4, 2019: DEQ will make the draft order available for a 30-day public comment period.
- November 2019 EQC meeting: DEQ will provide an update to the commission on the public comment process.
- January 2020 EQC meeting: DEQ will present the Corps' standard modification request for EQC action.

**Proposed draft EQC order** The draft commission order is expected to include separate conditions for spring and summer spill operations. The spring spill season, which occurs from April to mid-June, is the focus of the flexible spill agreement. The draft order is expected to allow total dissolved gas levels up to 125 percent calculated as

the average of the 12 highest hourly measurements in a calendar day for voluntary fish passage spill during spring spill. The maximum total dissolved gas level in the draft order is expected to be 126 percent, calculated as the average of the two highest hourly measurements in a calendar day.

For voluntary fish passage spill during the summer spill season, which occurs from mid-June through August, the draft order is expected to include conditions similar to the most recent 2015-2019 order -- allowing 120 percent total dissolved gas calculated as the average of the 12 highest hourly measurements in a calendar day. The maximum total dissolved gas level in the draft is expected to be 125 percent, calculated as the average of the two highest hourly measurements in a calendar day.

Existing Oregon rules require compliance monitoring and biological monitoring as a condition of the total dissolved gas standard modification. The draft order is expected to require physical and biological monitoring throughout the spring and summer spill periods. However, considering higher than historically allowed total dissolved gas levels, an additional spring spill requirement will be biological monitoring of non-salmonid fish species for effects of elevated total dissolved gas exposure. The conditions are expected to require a sample size of 100 each for salmonids and non-salmonids. If biological monitoring shows an exceedance of a biological threshold, the draft order will require the voluntary spill program to halt.

**Washington's  
proposed  
revisions**

The Washington Department of Ecology is proposing a rule change to allow total dissolved gas levels up to 125 percent for spring spill on the Snake and Columbia Rivers for fish passage. Ecology's public comment period concludes on September 26, 2019.

Ecology's public comment draft rule change proposes to allow 125 percent total dissolved gas calculated as the average of the two highest hourly measurements in a calendar day for voluntary fish passage spill during spring. That measurement methodology is different from that we expect to be included in the draft Oregon order. DEQ is in communication with Ecology and other involved parties to assess if, and how, the methodological differences might affect fish passage and operations at dams on the Columbia and Snake Rivers.

Requirements of Washington's draft rule include provisions regarding consistency with the federal agencies' consultation for operation of the federal Columbia River power system under the federal Endangered Species Act, as well as requirements to show compliance with the standard and a biological monitoring plan (which must be approved by Ecology) for effects of elevated total dissolved gas exposure on both salmonids and non-salmonids. Beginning

in 2021, the monitoring plan must include monitoring for non-salmonids. The minimum sample size requirement for salmonids and non-salmonids is fifty of each type. If biological monitoring shows an exceedance of a biological threshold, the voluntary spill program must be adjusted to comply with lower total dissolved gas standards.

**EQC  
involvement**

DEQ will request the commission's action on a final order for the proposed standard modification at the January 2020 EQC meeting.

Report prepared by Paula Calvert  
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