

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

IN THE MATTER OF GRANTING A)	AMENDMENT
WATER QUALITY CERTIFICATION TO)	ORDER No. 8834
PacifiCorp, Merwin Dam Hydroelectric Project)	of Order No. 3678
with Chapter 90.48 RCW and the)	
Rules and Regulations of the)	
Department of Ecology)	

To: Mr. Frank Shrier
PacifiCorp
825 NE Multnomah
Portland, OR 97232

Amended Order Docket #	8834
Order Docket #	3678
Site Location	Merwin Dam Hydroelectric Project

The Department of Ecology (Ecology) has issued this amended Administrative Order (Order) Docket #8834 to amend Order Docket #3678 dated October 9, 2006, and issued to PacifiCorp.

This amendment is issued under the provisions of Chapter 90.48 RCW and Chapter 173-201A WAC.

ADMINISTRATIVE ORDER AMENDMENTS

Administrative Order No. 3678, dated October 9, 2006, is hereby amended as follows.

1. Section 3.0 Findings *Compliance with standards* 9) the following text:

"Class A water quality standards apply downriver from Merwin Dam. Lake Class water quality standards apply from Merwin Dam at 236.9 feet msl to the Face of Yale Dam since Lake Merwin is a reservoir with a mean detention time of greater than 15 days. Mean detention time is calculated by dividing the reservoir's mean annual minimum total storage by the thirty-day ten-year low-flow from the reservoir. Lake class conditions for temperature require that the licensee maintaining the highest attainable water quality condition that is feasible to achieve to best protect the biota." **shall be removed and replaced with the following:**

"Core Summer Salmonid Habitat listed in WAC 173-201A Table 602, and Salmon and Trout Spawning listed in Waters Requiring Supplemental Spawning and Incubation Protection for Salmonid, Publication Number 06-10-038, WRIA 27 map apply downriver from Merwin Dam. Lake water quality standards apply from Merwin Dam at 239.6 feet msl to the Face of Yale Dam since Lake Merwin is a reservoir with a mean detention time of greater than 15 days. Mean detention time is calculated by dividing the reservoir's mean annual minimum total storage by the thirty-day ten-year low-flow from the reservoir. Lake water quality standards require that human actions considered cumulatively may not increase the 7-DADMax temperature more than 0.3°C (0.54°F) above natural conditions, (WAC 173-201A-200(1)(c)(v))."

2. Condition 4.1.1 and Condition 4.1.2 the following text:

"1) The project shall comply with all water quality standards approved by the Environmental Protection Agency (currently codified in ch. 173-201A WAC), ground water quality standards

2) (currently codified in ch. 173-200 WAC), and sediment quality standards (currently codified in ch. 173-204 WAC) and other appropriate requirements of state law. The conditions below set forth adaptive management processes and measures to achieve full compliance with standards and constitute a water quality attainment plan under the 2003 WAC 173-201A-510(5) for TDG and temperature." shall be removed and replaced with the following:

"1) The project shall comply with all water quality standards approved by the Environmental Protection Agency (currently codified in ch. 173-201A WAC), ground water quality standards (currently codified in ch. 173-200 WAC), and sediment quality standards (currently codified in ch. 173-204 WAC) and other appropriate requirements of state law. The project shall comply with the conditions of the compliance schedule for dams (WAC 173-201A-510(5)) where the project causes or contributes to a violation of the water quality standards."

3. Condition 4.1.2 through 4.1.19 **shall be renumbered accordingly.**

4. Condition 4.1.19 the following text:

"The project shall meet the Class A standards below Merwin Dam and Lake Standards in Lake Merwin listed in WAC 173-201A-030." shall be removed and replaced with the following:

"The project shall meet Core Summer Salmonid Habitat standards below Merwin Dam and all fresh water Lake designated uses, and criteria listed in WAC 173-201A in lake Merwin."

Temperature Criteria:

- a. Below Merwin Dam. The supplemental aquatic life use designation of *Salmon and Trout Spawning* applies downstream of Merwin Dam to the Lewis River confluence with Houghton Creek during two seasons, (WAC 173-201, *Supplemental Spawning/Incubation*, WRIA 27 map). *Salmon and Trout Spawning* use designation applies to the segment of Lewis River from Merwin Dam to Cedar Creek from September 1 through June 15. *Salmon and Trout Spawning* use designation also applies to the segment of Lewis River downstream of Cedar Creek to the confluence with Houghton Creek from February 15 through June 15. The aquatic life use designation of *Core Summer Salmonid Habitat* listed in WAC 173-201A, Table 602 applies downstream of Merwin Dam to the Lewis River confluence with Houghton Creek outside of the dates of the aforementioned supplemental use designation. See Table 2.0 Below.

Table 2.0 - Temperature Criteria for Designated Uses by Stream Reach

Lewis River Reach Description	Designated Use	Applicable Season	Temperature criteria - 7 day average daily maximum	Water Quality Standards reference
Lewis River Downstream of Merwin Dam to Cedar Creek	<i>Salmon and Trout Spawning</i>	September 1 through June 15	13°C (55.4°F)	WAC 173-201A (supplemental Spawning Incubation WRIA 27 map)

	<i>Core Summer Salmonid Habitat</i>	June 16 through August 31	16°C (60.8°F)	WAC 173-201A, Table 602
Lewis River Downstream of Cedar Creek to the Confluence of Houghton Creek	<i>Salmon and Trout Spawning</i>	February 15 through June 15	13°C (55.4°F)	WAC 173-201A (supplemental Spawning Incubation WRIA 27 map)
	<i>Core Summer Salmonid Habitat</i>	June 16 through February 14	16°C (60.8°F)	WAC 173-201A, Table 602

- b. Lake Merwin. *Lake* water quality standards apply from Merwin Dam at 239.6 feet msl to the Face of Yale Dam since Lake Merwin is a reservoir with a mean detention time of greater than 15 days. Mean detention time is calculated by dividing the reservoir's mean annual minimum total storage by the thirty-day ten-year low-flow from the reservoir. *Lake* water quality standards require that human actions considered cumulatively may not increase the 7-DADMax temperature more than 0.3°C (0.54°F) above natural conditions (WAC 173-201A-200(1)(c)(v)).

5. The following new Condition 4.1.20 **shall be added**:

Post-Compliance Schedule: If implementing the compliance schedule does not result in compliance with water quality standards at the time the compliance schedule expires, the Licensee may explore other alternative approaches available in the water quality standards, including a second compliance schedule or alternative provided in WAC 173-201A-510(5)(g).

6. Condition 4.4.1 the following text:

“Lewis River. The Project shall not cause any violation of the temperature and dissolved oxygen water quality criteria as specified for Class ‘A’ waters, WAC 173-201A-030(2)(c)(ii) and (iv) in and below Merwin Dam. The Licensee shall not cause these waters to exceed 18°C nor dissolved oxygen concentrations to go below 8 mg/L. If the presence or operation of the dam causes violation of these criteria, the Licensee shall modify its operation to the extent necessary to ensure that the Project does not cause such exceedance.” **shall be removed and replaced with the following:**

“The Project shall not cause any violation of Core Summer Salmonid Habitat criteria for temperature and dissolved oxygen in the Lewis River in and below Merwin Dam as listed in WAC 173-201A-200(1)(c) and WAC 173-201A-200(1)(d), respectively. The Licensee shall not cause these waters to exceed 16°C 7-DADMax temperature nor dissolved oxygen concentrations to go below 9.5 mg/L as a 1-day minimum. Additionally, the Project shall not cause designated Salmon and Trout Spawning waters in Lewis River below Merwin Dam to exceed the 13°C 7-DADMax temperature criteria during the applicable dates shown in WAC 173-201, Supplemental Spawning/Incubation, WRIA 27 map.”

7. Condition 4.4.2 the following text:

“Lake Merwin. The Project shall not cause any violation of the temperature or dissolved oxygen water quality criteria as specified for Lake Class waters in WAC 173-201A-030(5)(c)(ii) and (iv)

in Lake Merwin. If the presence or operation of the Merwin Dam causes violation of these criteria, the Licensee shall modify its operation to the extent necessary following the compliance schedule outlined below to ensure that the Project does not cause such exceedance. The Lake Class temperature and dissolved oxygen criteria that applies to the reservoir mandates no measurable change from natural conditions. The Merwin Dam has created artificial lake conditions over which the project has some control. In such circumstances, Ecology requires the Licensee to use all reasonable and feasible measures to achieve conditions that best protect the designated or characteristic uses for fish and shellfish (WAC 173-201A(2)(b)(iii)) within the reservoir.” shall be removed and replaced with the following:

“Lake Merwin. The Project shall not cause any violation of the fresh water Lake designated criteria for temperature and dissolved oxygen in Merwin Lake, listed in WAC 173-201A-200(1)(c)(v) and WAC 173-201A-200(1)(d)(ii), respectively. If the presence or operation of the Merwin Dam causes violation of these criteria, the Licensee shall modify its operation to the extent necessary following the compliance schedule outlined below to ensure that the Project does not cause such exceedance. The Lake water quality criteria that apply to the reservoir mandates that human actions considered cumulatively may not increase the 7-day average daily maximum (7-DADMax) temperature more than 0.3°C above natural conditions and may not decrease dissolved oxygen concentrations more than 0.2 mg/L below natural conditions. The Merwin Dam has created artificial lake conditions over which the project has some control. In such circumstances, Ecology requires the Licensee to use all reasonable and feasible measures to achieve conditions that best protect the designated or characteristic uses for fish and shellfish within the reservoir.”

8. Condition 4.4.3 the following text:

“The Licensee shall develop a Temperature Water Quality Attainment Plan (TWQAP) for the Lake Merwin canyon (Canyon). A draft of the TWQAP shall be submitted for Ecology review and approval. This draft shall be submitted within one (1) year of license issuance.

The purpose of this TWQAP is to identify and maintain the highest attainable water quality conditions to provide a temperature fluctuation regime that is reasonable and feasible to achieve and which will best protect the cold-water biota. The TWQAP must include a reasonable compliance schedule for carrying out an adaptive process within ten (10) years of license renewal for evaluating feasible technical and operational changes to improve temperature for cold water biota using the steps outlined below:

- a. Identify the Canyon’s species of fish and macroinvertebrates (identified to the lowest practical level) and determine where they are found in the water column at different life stages and different times of day;*
- b. evaluate the temperature requirements of those organisms that use the upper water column;*
- c. evaluate the effects of the project-related temperature fluctuations on these organisms;*
- d. If necessary to protect the most sensitive beneficial uses, identify the target temperatures in the Canyon which will protect the organisms in the upper water column, lower water column and the benthos;*
- e. If necessary to protect the most sensitive beneficial uses, identify all reasonable and feasible methods to ensure that the water temperature fluctuation regime in the Canyon remain below levels which would harm the aquatic biota or limit the potential healthy cold water habitat; and.*

- f. *Identify adaptive management strategies to further improve the temperature fluctuation regime for cold-water biota in the event that target temperatures are not achieved.*” **shall be removed and replaced with the following:**

“The Licensee shall develop a Temperature and Dissolved Oxygen Water Quality Attainment Plan (TDOWQAP) for the Project. The TDOWQAP shall contain a detailed strategy for achieving compliance with temperature and dissolved oxygen water quality criteria in the Lewis River downstream of Merwin Dam to the river’s confluence with Houghton Creek and include temperature and dissolved oxygen monitoring in the forebay and tailrace of Merwin Dam. The TDOWQAP shall follow the requirements of the compliance schedule for dams (WAC 173-201A-510(5)).”

9. Condition 4.4.4 **shall be removed**

10. Condition 4.4.5 **shall be renumbered to: 4.4.4**

11. Condition 4.5.2(b) In-Water-Work Protection Plan (IWWPP) the following text:

“(as defined in WAC 173 201A-110(3)(a-d))” **shall be removed and replaced with the following:**

“(as defined in WAC 173-201A-200 (1) (d) (e) and 201A-400 Mixing Zones)”

12. Condition 4.5.4 Maintain Turbidity Standards the following text:

- “a. Certification of this Project does not authorize the Licensee to exceed the turbidity standard beyond the mixing zone described in (b), (c), (d), and (e) below. Turbidity in Class A waters in and below Merwin Dam shall not exceed 5 NTU over background turbidity when turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU. Turbidity in Lake Class waters of Lake Merwin shall not exceed 5 NTU over background turbidity.*
- b. For Class A waters, a mixing zone is established, consistent with WAC 173-201A-100(7) and –110(3), within which the turbidity standard is waived. The mixing zone is established to allow only temporary exceedances of the turbidity criteria during and immediately after in-water work. The temporary turbidity mixing zone shall be as follows:*
- i. For waters up to 10 cfs flow at the time of construction, the point of compliance shall be 100 feet downstream from activity causing the turbidity exceedance.*
 - ii. For waters above 10 cfs up to 100 cfs flow at the time of construction, the point of compliance shall be 200 feet downstream from activity causing the turbidity exceedance.*
 - iii. For waters above 100 cfs flow at the time of construction, the point of compliance shall be 300 feet downstream from activity causing the turbidity exceedance.*
- c. For Lake Class waters, certification of this Project does not authorize the Licensee to exceed the turbidity standard beyond the mixing zone described in (d) and (e) below.*
- d. Step 1. Mixing zones shall not be allowed unless it can be demonstrated to the satisfaction of Ecology that:*
- i. Other siting, technological, and managerial options that would avoid the need for a lake mixing zone are not reasonably achievable;*
 - ii. Overriding considerations of the public interest will be served; and*

- iii. *All technological and managerial methods available for pollution reduction and removal that are economically achievable would be implemented prior to discharge*
- e. *Step 2. Mixing zones, singularly or in combination with other mixing zones, shall comply with the most restrictive combination of the following:*
 - i. *Not exceed ten percent of the waterbody volume;*
 - ii. *Not exceed ten percent of the waterbody surface area (maximum radial extent of the plume regardless of whether it reaches the surface); and*
 - iii. *Not extend beyond fifteen percent of the width of the waterbody.” shall be removed and replaced with the following:*
- “a. Certification of this project does not authorize the Licensee to exceed the turbidity standard beyond the mixing zone described below. The Aquatic life turbidity criteria for the use category of Core summer salmonid habitat listed in WAC 173-201A-200 (1)(e) applies downstream of Merwin Dam to the Lewis River confluence with Houghton Creek. Salmonid spawning, rearing, and migration applies downstream of confluence with Houghton Creek to the Columbia River. In both Core summer salmonid habitat and Salmonid spawning, rearing, and migration waters turbidity shall not exceed 5 NTU over background turbidity when turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU. Fresh water use designations for the Lewis River watershed are listed in WAC 173-201A-600, 173-201A-602 and the supplemental spawning and incubation map for WRIA 27 (Ecology publication #06-10-038). (See Table Below.)

Table 200 (1)(e) Aquatic Life Turbidity Criteria in Fresh

Water Category	NTUs
Char Spawning and Rearing	Turbidity shall not exceed: • 5 NTU over background when the background is 50 NTU or less; or • A 10 percent increase in turbidity when the background turbidity is more than 50 NTU.
Core Summer Salmonid Habitat	Same as above.
Salmonid Spawning, Rearing, and Migration	Same as above.

(i) The turbidity criteria established under WAC 173-201A-200 (1)(e) shall be modified, without specific written authorization from the department, to allow a temporary area of mixing during and immediately after necessary in-water construction activities that result in the disturbance of in-place sediments. This temporary area of mixing can occur only after the activity has received all other necessary local and state permits and approvals, and after the implementation of appropriate best management practices to avoid or minimize disturbance of in-place sediments and exceedances of the turbidity criteria. A temporary area of mixing is also subject to the constraints of WAC 173-201A-400 (4) and (6) listed below:

(4) No mixing zone shall be granted unless the supporting information clearly indicates the mixing zone would not have a reasonable potential to cause a loss of sensitive or important habitat, substantially interfere with the existing or characteristic uses of the water body, result in damage to the ecosystem, or adversely affect public health as determined by the department.

(6) The size of a mixing zone and the concentrations of pollutants present shall be minimized. A temporary area of mixing shall be as follows:

- i. For waters up to 10 cfs flow at the time of construction, the point of compliance shall be 100 feet downstream from activity causing the turbidity exceedance.
 - ii. For waters above 10 cfs up to 100 cfs flow at the time of construction, the point of compliance shall be 200 feet downstream from activity causing the turbidity exceedance.
 - iii. For waters above 100 cfs flow at the time of construction, the point of compliance shall be 300 feet downstream from activity causing the turbidity exceedance.
 - iv. For projects working within or along lakes, ponds, wetlands, or other nonflowing waters, the point of compliance shall be at a radius of one hundred fifty feet from the activity causing the turbidity exceedance.
- b. Water quality exceedances beyond the temporary area of mixing listed above, that are predicted as being unavoidable during construction or maintenance of a project, will be subject to all criteria listed in WAC 173-201A-400 Mixing zones. A request for an alternative mixing zone that meets the criteria listed in WAC 173-201A-400 may be submitted to Ecology for approval as part of the project-specific In-Water Work Protection Plan required by Section 4.5 of Certification (Order No 3678)."

13. All references to Washington Surface Water Quality Standards of Chapter 173-201A WAC shall be followed according to the dispositions now listed in the 2006 codified version of this Chapter and subsequent versions.

No other condition or requirement of this Certification (Order No. 3678) is affected by this amendment.

Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if it appears necessary to protect the public interest.

FAILURE TO COMPLY WITH THIS ORDER

Failure to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this Order:

1. File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
2. Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Your appeal alone will not stay the effectiveness of this Order. Stay requests must be submitted in accordance with RCW 43.21B.320.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel Rd SW STE 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

Deborah Cornett
Department of Ecology
Southwest Regional Office
PO Box 47775, Olympia, WA 98504-7775
Phone: (360) 407-7269

MORE INFORMATION

Pollution Control Hearings Board Website: www.eho.wa.gov/Boards_PCHB.aspx

Chapter 43.21B RCW - Environmental Hearings Office – Pollution Control Hearings Board:
<http://apps.leg.wa.gov/RCW/default.aspx?cite=43.21B>

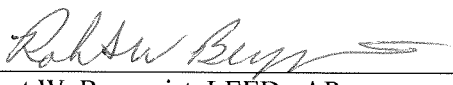
Chapter 371-08 WAC – Practice And Procedure:
<http://apps.leg.wa.gov/WAC/default.aspx?cite=371-08>

Chapter 34.05 RCW – Administrative Procedure Act:
<http://apps.leg.wa.gov/RCW/default.aspx?cite=34.05>

Laws: www.ecy.wa.gov/laws-rules/ecyrcw.html

Rules: www.ecy.wa.gov/laws-rules/ecywac.html

SIGNATURE


Robert W. Bergquist, LEED® AP
Southwest Region Manager
Water Quality Program

11/7/2011
Date