

Clean Water Act § 401 Certification Conditions
for the
PacifiCorp
North Umpqua Hydroelectric Project
(FERC No. 1927)
North Umpqua Subbasin,
Douglas County, Oregon

Upon Federal Energy Regulatory Commission (FERC) issuance of a new license for the Project, PacifiCorp shall comply with the following § 401 Certification conditions:

1. Temperature

- a. PacifiCorp shall implement the surface water temperature management plan (TMP) approved by the Oregon Department of Environmental Quality (ODEQ) in conjunction with this § 401 Certification (Certification) and attached as Exhibit A. In accordance with OAR 340-041-0026(3)(a)(D), the TMP identifies those measures that PacifiCorp will undertake to reduce the Project's contribution to exceedances of instream water quality criteria for temperature.
- b. PacifiCorp shall implement the Stream Temperature Monitoring Plan (STMP) approved by ODEQ in conjunction with this Certification and attached as Exhibit B. The STMP specifies the instream temperature monitoring reasonably needed to determine (a) whether the temperature criteria continue to be exceeded in waters of the North Umpqua Subbasin affected by the Project, (b) the success of the TMP in reducing the Project's contribution to any continued exceedances of the criteria, and (c) any additional measures that may be needed to reduce the Project's contribution to exceedances of the criteria.
- c. Upon the U.S. Environmental Protection Agency's (EPA) final approval of a Total Maximum Daily Load (TMDL) for temperature in waters of the North Umpqua Subbasin affected by the Project (or upon any modification to the TMDL that applies to those waters), ODEQ:
 - (1) Will seek to require, in conjunction with designated management agencies and in accordance with applicable law, other anthropogenic sources within the North Umpqua Subbasin to implement measures to reduce their contributions to exceedances of the temperature criteria; and
 - (2) May reevaluate PacifiCorp's TMP in light of information acquired since the certification of the Project. If revised temperature reduction measures are feasible and necessary to meet an allocation for the Project under the approved TMDL (or under any modification to the TMDL approved by EPA), ODEQ may modify the TMP to require the revised measures, subject to the

limits set forth in Exhibit C attached to this Certification. If the TMDL does not include a specific allocation for the Project, references to the "allocation for the Project" shall refer to the allocation that encompasses Project-related thermal contributions to waters in the North Umpqua Subbasin.

- d. At the end of the period determined by ODEQ to be necessary to implement the TMDL for temperature in waters of the North Umpqua Subbasin affected by the Project, ODEQ may:
- (1) Determine whether the TMDL and allocations for the Project have been achieved.
 - (2) If the TMDL and allocations for the Project have been achieved, PacifiCorp shall continue to implement its TMP unless, at PacifiCorp's request, ODEQ approves a modification or termination of the TMP.
 - (3) If the TMDL or an allocation for the Project has not been achieved, ODEQ may reevaluate PacifiCorp's TMP to determine whether additional measures to reduce the Project's contribution to exceedances of the temperature criteria are necessary and feasible. If additional measures are necessary and feasible, ODEQ may modify the TMP to require the additional measures, subject to the limits set forth in Exhibit C. Any modification of the TMP that would require the Project to reduce instream temperatures beyond what would be required by the allocation for the Project shall be effective only upon modification of the allocation to reflect the reductions.
 - (4) If (i) additional measures to reduce the Project's contribution to exceedances of the temperature criteria are necessary to achieve the TMDL, but the measures are not feasible, and (ii) the TMDL has not been achieved for waters affected by the Project, ODEQ shall verify whether all feasible measures have been undertaken within the North Umpqua River Subbasin to achieve the TMDL for waters affected by the Project.
 - (5) If all feasible measures have not been undertaken, DEQ, in conjunction with designated management agencies, shall take steps to ensure that all feasible measures are undertaken.
 - (6) If all feasible measures have been undertaken, ODEQ shall determine whether designated beneficial uses of waters affected by the Project are adversely affected by the failure to achieve the TMDL.
 - (7) If the designated beneficial uses are not adversely affected by the failure to achieve the TMDL, PacifiCorp shall continue to implement its TMP unless, at PacifiCorp's request, ODEQ approves modification or termination of the TMP.
 - (8) If the designated beneficial uses are adversely affected by the failure to achieve the TMDL, ODEQ may modify the TMP to require additional temperature reduction measures, subject to the limits

set forth in Exhibit C. Any modification of the TMP that would require the Project to reduce instream temperatures beyond what would be required by the allocation for the Project shall be effective only upon modification of the allocation to reflect the reductions.

- e. ODEQ may make reasonable and feasible modifications to the STMP if:
- (1) The STMP set forth in Exhibit B proves inadequate to provide the data needed to make determinations described in Paragraph 1.b., or
 - (2) Modifications to the TMP require modifications to the STMP.

PacifiCorp shall implement modifications to the TMP and STMP made or required by ODEQ in accordance with this certification condition and Exhibits A-C. With the written approval of ODEQ, PacifiCorp may cease implementing the TMP or STMP or may implement a modified TMP or STMP. ODEQ may approve cessation or modification if ODEQ determines that it will not impair the achievement of any TMDL or allocation for the Project for temperature and will not contribute to an exceedance of the applicable temperature criteria in waters affected by the Project.

- f. PacifiCorp shall install a fish screen at the Fish Creek Diversion intake in accordance with Section 4.3.2 of the North Umpqua Hydroelectric Settlement Agreement among PacifiCorp, ODEQ, and other state and federal agencies dated June 13, 2001 (North Umpqua Settlement Agreement).
- g. PacifiCorp shall conduct scheduled maintenance in accordance with the North Umpqua Settlement Agreement Section 6.6.

2. Hydrogen Ion Concentration (pH)

- a. Lemolo No. 2 Full-flow Reach.

To address pH criteria exceedances in the Lemolo No. 2 full-flow reach in the North Umpqua River below the Lemolo No. 2 powerhouse, PacifiCorp shall reroute the Lemolo No. 2 powerhouse discharge to Toketee Reservoir in accordance with the North Umpqua Settlement Agreement Section 5.4.

- b. Project Maintenance.

PacifiCorp shall conduct scheduled powerhouse maintenance in accordance with the North Umpqua Settlement Agreement Section 6.6. PacifiCorp shall conduct any ramping associated with Project maintenance in accordance with the requirements of the North Umpqua Settlement Agreement Section 6.6.

- c. Lemolo No. 1 Forebay.

- (1) When the forebay is expanded as set forth in the North Umpqua Settlement Agreement Section 11.5, PacifiCorp shall design the forebay to allow mechanical removal of macrophyte growth without compromising the forebay's liner integrity.
- (2) If aquatic plant growth in the forebay causes a pH criteria exceedance, PacifiCorp shall, at ODEQ's request, develop and submit for ODEQ's approval a plan and schedule to dredge the forebay or to take other measures to address the pH criteria exceedance. Upon ODEQ's approval, PacifiCorp shall implement the plan in accordance with the schedule contained in the plan.

d. Monitoring

Monitoring is required as follows. ODEQ may waive or change the monitoring requirements at the request of PacifiCorp, or ODEQ may change the requirements on its own initiative if the revised requirements are feasible and reasonably necessary to determine whether and to what extent PacifiCorp contributes to an exceedance of applicable pH criteria in waters affected by the Project:

- (1) Monitoring Below Soda Springs Powerhouse.

PacifiCorp shall monitor pH on an hourly basis at the permanent monitoring station located below Soda Springs Powerhouse (BLDG), or at another ODEQ-approved location in the North Umpqua River below the Project. PacifiCorp shall report data to ODEQ by December 31 for the preceding water year (October 1 to September 30). If data capture is less than 90 % on a water year basis or less than 95% during the months of June through September, except due to factors beyond the reasonable control of the operator or PacifiCorp, PacifiCorp shall install and operate a redundant pH monitor at BLDG (or at another ODEQ-approved location) for subsequent years of the new FERC License until PacifiCorp can demonstrate to ODEQ that one pH monitor is sufficient to reliably meet minimum data collection requirements.

- (2) Lemolo No. 1 Forebay.

Following the expansion of the forebay as set forth in the North Umpqua Settlement Agreement Section 11.5, PacifiCorp shall monitor forebay pH in August by making at least one measurement between 1200 and 1800 hours 3 times per week and include a 24-hour diel sampling in August at the forebay inlet and the Lemolo No. 1 Powerhouse tailrace. PacifiCorp shall monitor annually the first and second year after the forebay expansion is completed, and every five years through the remaining term of the new FERC License. This monitoring requirement may be reviewed after the second year of monitoring and may be discontinued or modified with the approval of ODEQ. PacifiCorp shall report monitoring results to ODEQ by December 31 in years when monitoring occurs.

(3) Lemolo No. 2, Fish Creek, and Clearwater No. 1 Powerhouse Tailraces

PacifiCorp shall monitor pH at LEM2P, FISHP, and CLR1P at the completion of annual maintenance for 30 hours, starting 6 hours before generator restart and continuing until 24 hours after restart. Monitoring is to occur in the first year the maintenance schedule in the North Umpqua Settlement Agreement Section 6.6 is in effect. PacifiCorp shall report monitoring data to ODEQ by December 31. These monitoring requirements may be reviewed after the second year of monitoring and may be discontinued or modified with the approval of ODEQ.

3. Biological Criteria, and Protection of Beneficial Uses of Anadromous Fish Passage, Salmonid Spawning, Salmonid Rearing, and Resident Fish & Aquatic Life Under Other Appropriate Laws

a. Minimum Instream Flows

PacifiCorp shall provide in-stream flow in accordance with the North Umpqua Settlement Agreement Sections 5 and 10.4.

b. Flow Measurement and Reporting

- (1) PacifiCorp shall develop a coordinated gauge installation and data reporting plan in accordance with the North Umpqua Settlement Agreement Section 5.5. PacifiCorp shall install and maintain gauge stations as established by the approved gauge installation and data reporting plan.
- (2) By December 31 of each year, PacifiCorp shall submit to the ODEQ-Western Region an annual report with average hourly flows passed and diverted at the Project developments for the previous water year (October 1 to September 30).

c. Fish Passage Facilities

PacifiCorp shall implement fish passage measures in accordance with the North Umpqua Settlement Agreement Section 4.

d. Ramping

PacifiCorp shall implement ramping restrictions and measures in accordance with the North Umpqua Settlement Agreement Section 6.

e. Fluvial Geomorphic Processes

PacifiCorp shall implement fluvial geomorphic restoration measures in accordance with the North Umpqua Settlement Agreement Section 7.

f. Anadromous Fish Spawning Habitat Improvements

PacifiCorp shall implement measures to restore, create, and enhance spawning habitat in accordance with the North Umpqua Settlement Agreement Section 8.1.

g. Lemolo Reservoir Rule Curve

PacifiCorp shall manage the drawdown and reservoir operating level in accordance with the North Umpqua Settlement Agreement Sections 9.3 and 9.4.

h. Reconnecting Aquatic Sites

- (1) PacifiCorp shall implement aquatic connectivity measures in accordance with the North Umpqua Settlement Agreement Sections 10.1, 10.2, 10.3, 10.6, and 15.6.
- (2) PacifiCorp shall breach or alter diversions for Helen, Spotted Owl, Karen, Thorn, Potter, Deer, White Mule, and Mill Creeks in accordance with the North Umpqua Settlement Agreement Section 10.4.

i. Notification of Erosive Events

PacifiCorp shall notify Oregon Emergency Response System (1-800-452-0311) of erosive events and coordinate remedial measures in accordance with the North Umpqua Settlement Agreement Sections 14.3.2 and 14.3.3.

j. Water Quality Monitoring

PacifiCorp shall fund, operate, and maintain a permanent water quality monitoring station below Soda Springs powerhouse (BLDG). Data will be collected under an ODEQ-approved QA/QC plan, and compilations of data for the water year (October 1-September 30) will be provided electronically to ODEQ by December 31, or as soon as the data can be reasonably verified, whichever is later, in a format approved by ODEQ.

The initial parameters to be monitored at this station are specified elsewhere in this Certification. These parameters may be modified from time to time by ODEQ to reflect new regulations or adverse water quality trends in the North Umpqua River that ODEQ reasonably believes to be caused by the Project. The required detection limits in the QA/QC plan may be modified from time to time by ODEQ to reflect feasible new technology. PacifiCorp will have a minimum of six months after ODEQ notice of new or changed monitoring requirements to implement the modifications.

The QA/QC plan shall be developed within 6 months of the new FERC license.

4. Aesthetic Conditions, Turbidity, and Sediment

- a. PacifiCorp shall implement fluvial geomorphic process restoration measures in accordance with the North Umpqua Settlement Agreement Section 7.
- b. PacifiCorp shall implement Project bypass ramping restrictions and maintenance measures in accordance with the North Umpqua Settlement Agreement Sections 6.5 and 6.6, respectively.
- c. PacifiCorp shall install and maintain gauge stations in accordance with the North Umpqua Settlement Agreement Section 5.5.
- d. PacifiCorp shall undertake Project maintenance in accordance with the North Umpqua Settlement Agreement Section 6.6.b.
- e. PacifiCorp shall implement erosion and sediment control measures in accordance with the North Umpqua Settlement Agreement Sections 10.6, 12.1, and 14.
- f. PacifiCorp shall implement transportation management measures in accordance with the North Umpqua Settlement Agreement Sections 15.1 for bridge maintenance, 15.4 for erosion control and abatement, and 15.6 for fishery improvement or erosion control.
- g. PacifiCorp, when conducting ground-disturbing activities greater than one acre, shall comply with applicable provisions of ODEQ's NPDES stormwater permitting program. If the permit program ceases, PacifiCorp shall provide ODEQ with 60 days' written notice and obtain ODEQ approval in advance of ground-disturbing activities greater than one acre, and PacifiCorp shall use Best Management Practices (BMPs) to protect surface water from trace-metals and other toxic constituents, sediment, and turbidity.
- h. PacifiCorp shall provide 60 days' written notice and obtain ODEQ approval of dredging or removal of sediments from Project impoundments. PacifiCorp shall employ BMPs to protect surface water from trace-metals and other toxic constituents, sediment, and turbidity.
- i. PacifiCorp shall monitor turbidity hourly below the Project at BLDG or another ODEQ-approved location for the duration of the new FERC license unless otherwise modified by agreement with ODEQ. PacifiCorp shall prepare a QA/QC plan for ODEQ approval within 6 months of the new FERC license that includes equipment reliability or redundancy to accomplish a 90% or better data capture on a water-year basis. Data loss due to reasons beyond the reasonable control of PacifiCorp or the operator will not be included in determining percent data capture.

- j. PacifiCorp shall manage Lemolo Reservoir levels in accordance with the North Umpqua Settlement Agreement Section 9.3. Erosion and sediment transport into Lemolo Reservoir will be evaluated through the Erosion Control Plan in accordance with the North Umpqua Settlement Agreement Section 14.

5. Bacteria and Bacteria Pollution

- a. PacifiCorp shall verify the proper operation of on-site sewage systems by observing leach fields for signs of surfacing sewage at the time of removal of accumulated sludge from the septic tank at each on-site system.
- b. PacifiCorp shall maintain written records of the on-site system septic tank pumping and of any visual observations of the operation and function of the leach field and other parts of the on-site system at the time of pumping.

6. Dissolved Oxygen (DO)

- a. Maintenance

PacifiCorp shall schedule powerhouse maintenance in accordance with the North Umpqua Settlement Agreement Section 6.6.

- b. Lemolo No. 2 Full-Flow Reach.

During the first year after the Lemolo No. 2 powerhouse flow is rerouted as set forth in the North Umpqua Settlement Agreement Section 5.4, PacifiCorp shall monitor DO at LEM2FF hourly for a minimum of 72 consecutive hours once between July 15 and August 15. PacifiCorp shall report monitoring data to ODEQ by December 31.

- c. Bypass Reaches

PacifiCorp shall monitor DO levels for a minimum of 72 consecutive hours in each bypass reach once during the first July in which the minimum flows set forth in Appendix C, Table 1, of the North Umpqua Settlement Agreement are required. PacifiCorp shall propose sampling locations for ODEQ approval. PacifiCorp shall report data to ODEQ by December 31 of that year. If the DO levels do not meet the applicable DO criterion in any bypass reach, DEQ may require PacifiCorp to undertake additional DO monitoring in that reach that is reasonably necessary to determine the extent of the DO criterion exceedance, and the Project's contribution to the exceedance.

- d. North Umpqua River Below Soda Springs Powerhouse.

PacifiCorp shall monitor DO hourly at BLDG upon issuance of the new FERC License. The minimum acceptable data capture is 95% valid data. Data loss due to reasons beyond the reasonable control of PacifiCorp or the operator will not be included in determining percent data capture.

- e. PacifiCorp shall report data to ODEQ by December 31 for the previous water year.

7. Habitat and Flow Modification; Deleterious Conditions; Taste and Odor

- a. Potter Creek.

PacifiCorp shall breach the diversion and restore riparian habitat in accordance with the North Umpqua Settlement Agreement Sections 10.4 and 10.5, respectively.

- b. Deer Creek.

PacifiCorp shall modify the diversion structure in accordance with the North Umpqua Settlement Agreement Section 10.4 and complete erosion-site remediation to the extent required by, and in accordance with, the North Umpqua Settlement Agreement Section 14.4.

- c. Lemolo No. 1 and Lemolo No. 2 Bypass Reaches.

PacifiCorp shall give priority to performing Lemolo No. 2 maintenance in accordance with the North Umpqua Settlement Agreement Section 6.6.b in order to maximize the potential for natural channel-forming events that will enhance fluvial geomorphology processes and promote the distribution of large wood and gravel.

8. Nuisance Algae

- a. In accordance with a study plan approved by ODEQ, PacifiCorp shall monitor chlorophyll-a in Lemolo Reservoir as follows:

- (1) Sample a minimum of once in each month of July-September in the first, third and fifth year of the new FERC License and every five years thereafter.
- (2) Results of the monitoring shall be reported to ODEQ by December 31 of each year that had a sampling event.
- (3) The monitoring schedule for chlorophyll-a may be changed after year 5 of the new FERC License by agreement between ODEQ and PacifiCorp to add, change, or delete the monitoring and reporting requirements above.

- b. In the event the monitoring demonstrates an exceedance of the average chlorophyll-a action level of 0.015 mg/l (based on a minimum of three samples collected over any three consecutive months at a representative location and from samples integrated from the surface to a depth equal to twice the secchi depth or the bottom, whichever is less), ODEQ may require PacifiCorp to undertake additional studies as reasonably necessary to describe the effects of the algae on water quality and beneficial uses, to determine the probable causes of the exceedance of the action level, and to develop a proposed control strategy, if warranted by adverse effects on beneficial uses.

9. Total Dissolved Gas

PacifiCorp shall implement the following Total Dissolved Gas Management Plan (TDGMP):

a. Lemolo No. 1 Powerhouse Tailrace

- (1) PacifiCorp shall replace the Lemolo No. 1 powerhouse turbine by December 31, 2004, or the issuance of the new FERC License, whichever is later.
- (2) Three months after the new turbine is installed and performance testing is complete and satisfactory (or at any later date approved by ODEQ), PacifiCorp shall study total dissolved gas (TDG) saturation levels in the powerhouse tailrace, in the forebay inlet, and in the North Umpqua River approximately one-quarter mile downstream from the powerhouse for a minimum of 72 hours in accordance with a study plan approved by ODEQ. The study shall measure TDG saturation levels at several power generation levels within the turbine's operating range and with the turbine's air admission system open and closed. PacifiCorp shall report the study results to ODEQ within three months of completing the study. If the study shows tailrace TDG saturation levels in excess of 110 percent, PacifiCorp shall, within three months of the submission of the report, submit to ODEQ proposed powerhouse operational procedures. These procedures shall specify power generation operating levels and associated air admission system operations to eliminate (or, if elimination is not feasible, to minimize) tailrace TDG saturation levels in excess of 110 percent.
- (3) If the measures required in the preceding paragraphs do not provide reasonable assurance that TDG saturation levels will meet the applicable TDG criterion, PacifiCorp will include in the expanded Lemolo No. 1 forebay (to be constructed by the fifth anniversary of the new FERC license under Section 11.5 of the North Umpqua Settlement Agreement) a shallow, rough surface at its entrance (or some other equally effective structure with the approval of ODEQ) to dissipate dissolved gases entering the forebay and powerhouse.

- (4) If the expanded forebay structure is required to reduce TDG saturation levels in the powerhouse tailrace under the preceding paragraph, PacifiCorp shall, three months after the structure is installed and operational (or at any later date approved by ODEQ), study TDG saturation levels in the powerhouse tailrace, in the forebay inlet, in the penstock inlet, and in the North Umpqua River approximately one-quarter mile downstream from the powerhouse for a minimum of 72 hours in accordance with a study plan approved by ODEQ. The study shall measure TDG saturation levels at several power generation levels within the turbine's operating range and with the turbine's air admission system open and closed. PacifiCorp shall report the study results to ODEQ within three months of completing the study. If the study results do not provide reasonable assurance that the TDG criterion will be met, PacifiCorp shall, within six months of the submission of the report, provide a TDG management and compliance plan to ODEQ for approval. Upon ODEQ approval, PacifiCorp shall implement the TDG management and compliance plan.
- b. Lemolo No. 2 Powerhouse Tailrace
- (1) PacifiCorp shall reroute flows from the tailrace to Toketee Lake in accordance with the North Umpqua Settlement Agreement Section 5.4. The design of the water conveyance system to Toketee Lake must dissipate TDG before the tailrace water enters the system and must exclude fish from the tailrace and the system.
 - (2) PacifiCorp shall, within three months after the discharge is rerouted (or at any later date approved by ODEQ), study TDG saturation levels immediately below the discharge from the new water conveyance system and in the penstock inlet for a minimum of 72 hours in accordance with a study plan approved by ODEQ. The study shall measure TDG saturation levels at several power generation levels within the turbine's operating range and with the turbine's air admission system open and closed. PacifiCorp shall report the study results to ODEQ within three months of completing the study. If the study results do not provide reasonable assurance that the TDG criterion will be met, PacifiCorp shall, within six months of the submission of the report, submit to ODEQ additional proposals for addressing the TDG criteria exceedances.
 - (3) As an interim measure, following the issuance of the new FERC License and until the powerhouse discharge is rerouted in accordance with the North Umpqua Settlement Agreement Section 5.4, PacifiCorp will visually assess fish for evidence of gas bubble trauma by examining fish collected in the Lemolo No. 2 full-flow reach. Fish will be collected using a variety of gear types (electrofishing, seining, and angling) to eliminate sampling bias.

Fish sampling will occur during the late summer, but no later than Labor Day, of the first calendar year after the new FERC License is issued for the Project. Sampling will occur during powerhouse operations that, based on previous TDG studies, are likely to cause elevated TDG saturation levels in the tailrace. The sample collection will last until at least 100 fish have been sampled or one week, whichever is shorter.

The visual assessment will follow the same protocols used on the Columbia River to assess gas bubble trauma, or as may be agreed upon by ODEQ and ODFW.

If, based on this monitoring and other available information, TDG saturation levels from the Lemolo No. 2 powerhouse are adversely affecting fish, PacifiCorp shall, following consultation with ODEQ and ODFW, submit a proposal to ODEQ within 3 months of the request to ensure either that the TDG criterion will be met or that adverse TDG effects on fish will be substantially eliminated, and implement measures as approved by ODEQ and ODFW.

c. Clearwater No. 2 Powerhouse Tailrace

- (1) After the issuance of the new FERC License, PacifiCorp shall operate the Clearwater No. 2 powerhouse at a power generation level of at least 2 megawatts (MW) (when the powerhouse is operating) and shall operate at power generation levels of 10 MW or below only with the air admission system closed.
- (2) PacifiCorp shall, within three months after the new FERC License is issued (or at any later date approved by ODEQ), study TDG saturation levels in the tailrace for a minimum of 72 hours in accordance with a study plan approved by ODEQ. The study shall measure TDG saturation levels at several power generation levels within the turbine's operating range and with the turbine's air admission system open and closed. PacifiCorp shall report the study results to ODEQ within three months of completing the study. If the study shows tailrace TDG saturation levels in excess of 110 percent at the required operational levels, PacifiCorp shall within 3 months of the submission of the study report submit to ODEQ additional operational measures to eliminate or, if elimination is not feasible, to minimize tailrace TDG saturation levels in excess of 110 percent. If the proposed measures do not provide reasonable assurance that the TDG criterion will be met, PacifiCorp shall, within six months of the submission of the report, provide a TDG management and compliance plan to ODEQ for approval. Upon ODEQ approval, PacifiCorp shall implement the TDG management and compliance plan.

d. Stump Lake.

PacifiCorp shall monitor TDG saturation levels at the bottom and surface of Stump Lake at the diversion dam during the first annual maintenance event at the Clearwater No. 1 powerhouse that is subject to North Umpqua Settlement Agreement Section 6.6. PacifiCorp shall collect a minimum of four samples, with a minimum of 30 minutes between each sample. PacifiCorp shall report the sample results to ODEQ within 30 days.

e. Fish Creek Development

During the first year of the new FERC License, while the dam is in spill condition (nominally April-June), PacifiCorp shall take spot measurements of TDG above the diversion dam, below the diversion dam, and in the bypass reach approximately every 500 feet below the dam until readings are within the applicable TDG criteria. PacifiCorp shall report the TDG measurements to ODEQ within 30 days of the measurements. If there are exceedances of the applicable TDG criteria, PacifiCorp shall provide a TDG management and compliance plan to ODEQ for approval within 90 days of the monitoring report. Upon ODEQ approval, PacifiCorp shall implement the TDG management and compliance plan.

10. Objectionable Discoloration; Scum and Oily Slick; Spill and Waste Management

- a. PacifiCorp shall implement its Project-specific Oil Spill Prevention, Control and Countermeasure (SPCC) Plan; Chemical Management System; and Waste Management Guidelines. The SPCC Plan, Chemical Management System, and Waste Management Guidelines shall be kept current.
- b. In the event of a spill or release or threatened spill or release to state waters, PacifiCorp shall immediately implement the site's SPCC plan, modified SPCC plan, or other applicable contingency plan and notify the Oregon Emergency Response System (OERS) at 1-800-452-0311.
- c. Project maintenance, including bridge maintenance that is PacifiCorp's responsibility under the North Umpqua Settlement Agreement Section 15.5, that could result in accumulations of solid waste or other residues must comply with ODEQ regulations and permit requirements. PacifiCorp employees and its contractors must receive instruction and training sufficient to notify designated PacifiCorp personnel to implement the applicable prevention and emergency response plans and to respond to situations that could result in unauthorized discharges to waters of the State.
- d. PacifiCorp shall maintain records for the new license term of instances where the site-specific SPCC plan, Chemical Management System, and/or Waste Management Guidelines (or equivalent) is modified

or the emergency response provisions of the plans are invoked. Documentation must include notices and reports of remediation activities and the results of the cleanup efforts or resource damages, if any.

11. Total Dissolved Solids

- a. PacifiCorp shall monitor specific conductance hourly below Soda Springs Powerhouse at monitoring location (BLDG).
- b. PacifiCorp shall report the results of monitoring for specific conductance for each water year to ODEQ by December 31.
- c. PacifiCorp shall consult with ODEQ on the implementation of non-routine measures under the North Umpqua Settlement Agreement and this Certification that may threaten or cause significant short-term turbidity or increased erosion.

12. Toxic Substances

- a. PacifiCorp shall follow the manufacturer’s label instructions when applying herbicides within the Project. The applicator must have a current Pesticide Applicator License from the Oregon Department of Agriculture.
- b. To the extent required by 40 CFR Part 112, PacifiCorp shall have a current Spill Prevention, Control, and Countermeasure Plan in effect at all times that has been prepared in accordance with the requirements of that part.
- c. To the extent required by 40 CFR Part 761, PacifiCorp shall have a current and complete PCB Procedure in effect at all times that has been prepared in accordance with the requirements of that part.

13. § 401 Certification Modification

ODEQ, in accordance with OAR Chapter 340, Division 48, and, as applicable, 33 USC 1341, may modify this Certification to add, delete, or alter Certification conditions as necessary and feasible to address:

- (a) adverse or potentially adverse Project effects on water quality or designated beneficial uses that did not exist or were not reasonably apparent when this Certification was issued;
- (b) TMDLs (not specifically addressed above in these Certification Conditions);
- (c) changes in water quality standards;
- (d) any failure of Certification conditions to protect water quality or designated beneficial uses as expected when the Certification was issued; or

(e) any change in the Project or its operations that was not contemplated by this Certification that might adversely affect water quality or designated beneficial uses.

In accordance with 33 USC 1341, any added or altered condition shall, so long as it is in effect, become a condition of any federal license or permit that is thereafter issued for the Project; further, ODEQ may seek, in accordance with applicable law and procedures, to have any modified Certification condition incorporated into any existing federal license or permit for the Project.

14. Project Changes

PacifiCorp shall obtain ODEQ review and approval before undertaking any change to the Project that might significantly and adversely affect water quality (other than project changes required by or considered in this Certification), including changes to Project structures, operations, and minimum flows.

15. Project Repair or Maintenance

PacifiCorp shall obtain ODEQ review and approval before undertaking Project repair or maintenance activities that might significantly affect water quality (other than repair or maintenance activities required by or considered in this Certification). ODEQ may, at PacifiCorp's request, approve specified repair and maintenance activities on a periodic or ongoing basis.

16. Project Inspection

PacifiCorp shall allow ODEQ such access as necessary to inspect the Project area and Project records required by this Certification at reasonable times as necessary to monitor compliance with Certification conditions.

17. Project Specific Fees

In accordance with ORS 543.080, PacifiCorp shall pay a project-specific fee for ODEQ's costs of overseeing implementation of this Certification. The fee shall be \$10,000 (2002 dollars) annually, made payable to "State of Oregon, Department of Environmental Quality", and due on July 1 of each year after issuance of this Certification beginning on July 1, 2003. ODEQ shall credit against this amount any fee or other compensation paid or payable to ODEQ, directly or through other agencies of the State of Oregon, during the preceding year (July 1 to June 30) for ODEQ's cost of oversight. The fee shall expire five (5) years after the first July 1 following the issuance of the new FERC License, unless ODEQ terminates it earlier because oversight for purposes of §401 certification is no longer necessary. One year before the expiration of the fee, or earlier if mutually agreed, ODEQ and PacifiCorp shall review the need, if any, to modify, extend, or terminate the fee, in accordance with ORS 543.080. PacifiCorp will pay any Project-specific fee required

after such review, including any administrative or judicial review of the fee in accordance with ORS 543.080(6).

18. Monitoring

In undertaking monitoring required by this Certification, PacifiCorp shall exercise reasonable care in the selection, installation, maintenance, and use of monitoring devices. Providing such care is exercised, PacifiCorp shall not be responsible for missing or inaccurate monitoring data. ODEQ, however, may require PacifiCorp to undertake any additional reasonable monitoring that is needed to address the missing or inaccurate data.

References to monitoring locations in these Certification Conditions are identified at page xvii of the July 2, 2001 § 401 Application and in Exhibit D.

19. Posting of § 401 Certification

PacifiCorp shall post a copy of these certification conditions in a prominent location at the Toketee Control Center.

EXHIBIT A

Temperature Management Plan (TMP)

The following TMP has been approved by ODEQ in conjunction with the Certification. Temperature monitoring requirements are in Exhibit B.

1. In accordance with the schedule set forth in Table 1 below, PacifiCorp shall reduce Project diversions to maintain at least the minimum instantaneous instream flows specified in the table within the bypass reaches immediately downstream of the diversion dams:

Table 1, Minimum Bypass Reach Flows, Cubic Feet Per Second (CFS)

	Lemolo No. 1	Lemolo No. 2	Clearwater No. 1	Clearwater No. 2	Toketee	Fish Creek	Slide Creek	Soda Springs	Deer Creek
January			30						Full Flow
February			30						Full Flow
March			30						Full Flow
April									Full Flow
May						50/130	80/240		Full Flow
June	80	70 -145	60			80/130	80/240		Full Flow
July	100	80 -180	40		80	80/130	80/240		Full Flow
August						80/130	80/240		Full Flow
September						80/130	80/240		Full Flow
October			30						Full Flow
November			30						Full Flow
December			30						Full Flow
KEY	x-y means range of minimum flows based on real-time monitoring (see condition 2 of this Exhibit A). x/y means flows before (x) and after (y) anadromous fish passage facilities are provided at Soda Springs Dam.								
	Minimum bypass reach flows are effective December 31, 2005 (if the new FERC License has been issued) or by the first anniversary of the new FERC License, whichever is earlier. Post-passage minimum flows in the Fish Creek and Slide Creek bypass reaches are effective on the seventh anniversary of the new FERC License if fish passage facilities have been provided at Soda Springs Dam in accordance with the North Umpqua Settlement Agreement. No diversion of Deer Creek is allowed after the first anniversary of the new FERC License; except that PacifiCorp may divert water from Deer Creek up to the OWRD water right in Deer Creek in order to aid fish salvage operations in the Lemolo No. 2 power canal when the Lemolo No. 2 powerhouse is shut down, as set forth in the North Umpqua Settlement Agreement Section 9.5.								

2. Lemolo No. 2 Bypass Reach Flows

a. In the Lemolo No. 2 bypass reach, minimum stream flows immediately below the diversion dam shall be 70 cfs in June and 80 cfs in July, except as modified by the following provisions of this condition 2.

b. From May 26 through July 31, PacifiCorp will continuously measure and record stream temperatures at the lower end of the bypass reach (LEM2B) and North Umpqua River above the mouth of Loafer Creek (new site name LEM2LC) in accordance with Exhibit B to this certification. After three (3) years of monitoring, if the temperature at LEM2LC is measurably higher than LEM2B, PacifiCorp will develop a regression equation that will enable the temperature at LEM2LC to be predicted from temperature measurements at LEM2B. If ODEQ approves the equation, PacifiCorp may, with ODEQ's approval, cease monitoring or reduce monitoring at LEM2LC. ODEQ approval may require PacifiCorp to re-validate the regression equation during the License.

c. Once each calendar day from June 1 through July 31, PacifiCorp will review the stream temperature data obtained under paragraph 2.b. from LEM2B since the last review under this paragraph. (For June 1, the review shall encompass temperature data since 12:01 a.m., May 31.) If the stream temperature since the last review has exceeded 12.8°C., PacifiCorp will increase the minimum stream flow released into the bypass reach by 25 cfs within the next 12 hours. After DEQ's approval of the regression equation developed under paragraph 2.b., minimum instream flows will be increased under the preceding sentence whenever the temperature since the last review has exceeded 12.8° C. at LEM2B or whenever the predicted temperature at LEM2LC since the last review has exceeded 12.8° C.

d. After an initial minimum stream flow increase under paragraph 2.c., PacifiCorp will increase the minimum flow by an additional 25 cfs if the stream temperature at LEM2B or the predicted temperature at LEM2LC (when applicable) (i) since the last review under paragraph 2.c. and (ii) more than 12 hours after the previous flow increase was completed has exceeded 12.8°C.

e. Notwithstanding the preceding paragraphs, the minimum stream flow will not be increased to more than 145 cfs in June and 180 cfs in July.

f. If the temperature at LEM2B or the predicted temperature at LEM2LC (when applicable) has remained at or below 12.8°C. for the 48 hours preceding the daily review under paragraph 2.c., PacifiCorp may reduce the minimum stream flow by 25 cfs, provided that the minimum stream flow may not be reduced by more than 25 cfs in any 24-hour period and may not be reduced below 70 cfs in June or 80 cfs in July.

g. An increase in the minimum stream flow under this condition 2, followed by a decrease in the minimum stream flow under condition 2.f., is one "flow adjustment cycle." Following the fourth flow adjustment cycle in any calendar year, PacifiCorp shall consult with ODEQ and the Oregon Department of Fish and Wildlife (ODFW) concerning potential adverse environmental effects of undertaking additional flow adjustment cycles during that year. PacifiCorp shall not initiate the downward portion of another flow adjustment cycle in that year without the written approval of ODEQ.

3. Adaptive Management.

- a. If the temperature monitoring reports submitted by PacifiCorp to ODEQ pursuant to Exhibit B show exceedances of applicable numeric temperature criteria in the Lemolo No. 1, Lemolo No. 2, Clearwater No. 1, or Toketee bypass reach, PacifiCorp shall by the following May 1 prepare and submit to ODEQ a report for the reach that evaluates the additional measures, if any, that PacifiCorp could feasibly implement to achieve the applicable numeric criterion. If, based on the report, ODEQ determines that there are additional, feasible temperature reduction measures that PacifiCorp could implement, PacifiCorp shall, subject to the limits set forth in Exhibit C of this Certification, implement the measures on a feasible schedule approved by ODEQ.
- b. If the temperature monitoring reports submitted by PacifiCorp to ODEQ pursuant to Exhibit B show exceedances of applicable numeric criteria in the Fish Creek, Slide Creek, or Soda Springs bypass reach, PacifiCorp shall by the following May 1 prepare and submit to ODEQ a report for the reach that evaluates the additional measures, if any, that PacifiCorp could feasibly implement to achieve the applicable numeric criterion. If, based on the report, ODEQ determines that there are additional, feasible temperature reduction measures that PacifiCorp could implement, PacifiCorp shall, subject to the limits set forth in Exhibit C of this Certification, implement the measures on a feasible schedule approved by ODEQ. After an initial report under this section, PacifiCorp shall submit this report to ODEQ every fifth year thereafter on May 1 until the applicable numeric criteria have been met within the reach for three consecutive years before the date of the report.

EXHIBIT B**Stream Temperature Monitoring Plan (STMP)**

PacifiCorp shall prepare and implement a STMP by no later than six months prior to the effective date of the initial minimum instream flows identified in Exhibit A. The STMP, which PacifiCorp may modify with the written approval of ODEQ, shall be consistent with the following minimum provisions:

a. Quality Assurance/Quality Control (QA/QC) Plan

The STMP shall include a QA/QC plan that is consistent with applicable ODEQ Laboratory Guidance, unless otherwise approved by ODEQ.

b. Temperature Monitoring Devices.

The accuracy of temperature recorders shall be tested before and after field deployment to insure that they are operating within their designated range of accuracy. In addition to pre- and post-deployment checks, the temperature recorders shall be audited monthly during the field measurement period. The pre- and post-deployment and monthly field audit checks shall be made using an NIST (National Institute of Standards and Technology) traceable (calibrated and maintained) thermometer accurate to $\pm 0.2^{\circ}\text{C}$., or better, that has been checked against an NIST traceable thermometer.

c. Frequency

Hourly measurements of temperature shall be recorded each year during the period indicated at the sites listed below.

d. Monitoring Locations

The site codes used here correspond to those described in the Application for Certification Pursuant to Section 401 of the Federal Clean Water Act, Volume I, page xvii (PacifiCorp July 2, 2001).

- (1) Lemolo No. 1 bypass reach: LEM1B (May 26-July 31)
- (2) Lemolo No. 2 bypass reach: LEM2B, LEM2FF, LEM2LC (new site above mouth of Loafer Creek) (May 26-July 31). Note: After the connection of the Lemolo No. 2 tailrace to Toketee Reservoir as set forth in the North Umpqua Settlement Agreement Section 5.4, PacifiCorp may cease measuring temperature at LEM2FF. If ODEQ approves the regression equation in paragraph 2.b. of Exhibit A, PacifiCorp may, with ODEQ approval, cease or reduce monitoring at LEM2LC.
- (3) Clearwater No. 1 bypass reach: CLR1B (May 26-July 31)

- (4) Clearwater No. 1 bypass reach: CLR1B (December 1-February 28 for the first year of the new FERC license).
- (5) Toketee bypass reach: TOKEB (June 25-July 31)
- (6) Fish Creek bypass reach: FISHT, FISHB (May 1-September 30)
- (7) Slide Creek bypass reach: SLIDT, SLIDB (May 1-September 30)
- (8) Soda Springs bypass reach: SODAB (May 26-September 30)
- (9) Deer Creek mouth: DEERM (June 1-July 31 in the year following modification to the diversion as set forth in the North Umpqua Settlement Agreement Section 10.4).

e. Instream Flow Measurement

Instream flow is to be measured and recorded hourly in accordance with the North Umpqua Settlement Agreement Section 5.5.

f. Temperature Monitoring Reports

PacifiCorp shall provide ODEQ with annual STMP monitoring reports for the preceding water year (October 1-September 30). The annual STMP monitoring reports shall include the required hourly temperature and instream flow data (as applicable), pre- and post-deployment instrument calibration data, and monthly field audit data for the given year. The STMP monitoring reports shall be submitted to ODEQ (Western Region, Medford office) by December 31.

EXHIBIT C

Limitations for Temperature Management Plan

ODEQ may require PacifiCorp to modify the Temperature Management Plan (TMP) to provide additional temperature-reduction measures, subject to the following limitations:

1. ODEQ will not require modification of the TMP for reasons other than to achieve the applicable temperature standard or temperature TMDL allocation to the Project.
2. PacifiCorp's responsibility to fulfill minimum instream flow requirements shall be limited to reducing Project diversions from bypass reaches.
3. ODEQ will not require TMP modifications such that Project-related instream temperature increases would be reduced to less than 0.25° F.
4. ODEQ will not require TMP modifications that are not feasible. In determining whether a modification is feasible, ODEQ will consider a site-specific balance of criteria, including, but not limited to, the incremental protection that the modification would provide to beneficial uses, the appropriateness to local conditions, the extent to which the modification reflects the use of best technologies or management practices or measures, the cost of compliance, and the likelihood of unintended adverse environmental consequences.

EXHIBIT D

Water Quality Monitoring Location Identification

BLDG	North Umpqua River below Soda Springs powerhouse in gaugehouse
CLR1B	Clearwater No. 1 bypass at downstream end.
CLR1P	Clearwater No. 1 powerhouse tailrace
DEERM	Deer Creek near mouth
FISHB	Fish Creek bypass at downstream end.
FISHP	Fish Creek powerhouse tailrace
FISHT	Fish Creek bypass at upstream end.
LEM1B	Lemolo No. 1 bypass at downstream end.
LEM2B	Lemolo No. 2 bypass at downstream end.
LEM2FF	Lemolo No. 2 full flow reach
LEM2LC	New – North Umpqua River above mouth of Loafer Creek
LEM2P	Lemolo No. 2 powerhouse tailrace.
SLIDB	Slide Creek bypass at downstream end.
SLIDT	Slide Creek bypass at upstream end.
SODAB	Soda Springs bypass at downstream end.
TOKEB	Toketee bypass at downstream end.