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Submitted via email

RE: Columbia Riverkeeper and Northwest Environmental Defense Center Public Comment on Draft NPDES Permit for the City of The Dalles Sewage Treatment Plan, Permit No. 101728.

Dear Oregon Department of Environmental Quality:

These comments are submitted on behalf of Columbia Riverkeeper and the Northwest Environmental Defense Center (NEDC) concerning the City of The Dalles' (hereafter "the City") application to renew NPDES Permit No. 101728, which authorizes pollutions discharges for the City's Sewage Treatment Plant. This permit authorizes pollution discharge directly to the Columbia River at River Mile (RM) 185.8 from an outfall that extends 180 feet from the riverbank.

The Columbia River, and the communities who depend on it, face serious threats from water pollution. Everyday thousands of pipes buried under and along the Columbia River

discharge toxic and other pollution from cities, industry, and dirty stormwater run-off.¹ Pesticides and heavy metals also enter the river from non-point source pollution, such as runoff from agricultural lands and air deposition. This public comment is part of Columbia Riverkeeper and NEDC's (collectively "Riverkeeper") effort to improve quality of life in the Columbia River Basin for purposes including public health, recreation, and habitat quality.

Columbia Riverkeeper's mission is to restore and protect the water quality of the Columbia River and all life connected to it, from the headwaters to the Pacific Ocean. NEDC is dedicated to preserving, protecting, and improving the natural environment in the Pacific Northwest. NEDC, based in Portland, Oregon, has worked since 1969 to protect the environment and natural resources of the Pacific Northwest by providing legal support to individuals and grassroots organizations with environmental concerns, and engaging in litigation independently or in conjunction with other environmental groups. Columbia Riverkeeper and NEDC's members and supporters live, recreate, and work throughout the Columbia River Basin, including near and downstream of the City's sewage treatment plant.

A. General Comments.

Riverkeeper commends DEQ for the Permit Evaluation prepared in support of the City's draft permit. In general, the Permit Evaluation was concise, well-written, and contained pertinent information to assist the public in understanding the agency's rationale on specific permit conditions. The Permit Evaluation also contained appendices that were particularly helpful in drafting this comment. Riverkeeper appreciates the time and thought DEQ staff put into preparing the Permit Evaluation.

B. Water Quality Based Effluent Limits.

1. pH.

The Columbia River is water quality impaired (Category 5) for pH at RM 185.8. As DEQ's Reasonable Potential Analysis Internal Management Directive (IMD) acknowledges, for waters that are listed as "water quality impaired" (Cat 5), mixing zones are not permitted for the listed pollutant parameters. *See* DEQ Reasonable Potential Analysis IMD Version 3.1 at 36 (Feb. 13, 2012). DEQ's IMD reflects well-established Clean Water Act precedent on the application of mixing zones to 303(d) listed waterbodies.

Question: What is DEQ's authority for issuing a regulatory mixing zone for pH when the Columbia River is water quality impaired for pH at the point of discharge? Please explain.

¹ Morace, J.L. 2012, *Reconnaissance of Contaminants in Selected Wastewater-Treatment-Plant Effluent and Stormwater Runoff Entering the Columbia River, Columbia River, Washington and Oregon, 2008-10*: U.S. Geological Survey Scientific Investigations Report 2012-5066 (hereafter "USGS Study") (Exhibit 1).

Riverkeeper urges DEQ to revise the draft permit to include a water quality based effluent limit (WQBEL) for pH.

2. Toxics Generally.

In 2011, the State of Oregon adopted some of the most protective water quality standards for toxics in the nation. After decades of research, scientific review, and policy discussions, DEQ made a commitment to reduce toxics that threaten public health. The state's historic decision followed years of hard work by Columbia River tribes and others to convince Oregon to do the right thing for people who rely on our rivers for sustenance. Yet the State of Oregon's landmark decision to reduce toxic pollution is not reflected DEQ's proposed pollution discharge permit for the City. Riverkeeper urges DEQ to revise the permit to ensure that Oregon's new toxic standards are fully integrated in new and revised NDPES permits.

Toxic mixing zones are not authorized by the CWA. Specifically, the CWA requires a strict timeline for compliance with water quality based effluent limits. 33 U.S.C. § 1311(b). The statutory deadline by which point sources were to meet water quality standards was July 1, 1977. 33 U.S.C. § 1311(b)(1)(C). By that date, dischargers were required to meet "any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations . . . or required to implement any applicable water quality standard established pursuant to this Act." *Id.* To protect our nation's waterways from toxic pollutants, Congress expressly required all dischargers to comply with all effluent limitations by March 31, 1989 at the latest. 33 U.S.C. § 1311(b)(2). Nonetheless, EPA and DEQ sanction the use of toxic mixing zones.

Riverkeeper does not support the use of mixing zones for toxic pollutants. This is particularly true for bioaccumulative toxins. *See* U.S. EPA, *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001 at 71 (March 1991) ("[A] State regulatory agency may decide to deny a mixing zone in a site-specific case. For example, denial should be considered when bioaccumulative pollutants are in the discharge."). Riverkeeper urges DEQ to revise the draft permit to include WQBELs for bioaccumulative toxic pollutants.

3. Mercury

The City's self-monitoring results show high mercury levels. In addition, a 2012 the U.S. Geological Survey (USGS) reconnaissance study noted that The Dalles discharges were among the highest of Columbia River sewage treatment plants. The USGS study states:

The highest total mercury concentrations were measured at The Dalles and Vancouver. Both concentrations were greater than 12 ng/L, the chronic criterion for freshwater aquatic life (Washington State Department of Ecology, 2003; Oregon Department of Environmental Quality, 2010b). This chronic criterion is the average 4-day concentration, whereas the acute criterion (1-hour average concentration) of 2,400 ng/L was not exceeded in this study. Methylmercury, the bioavailable form of mercury in the

environment, concentrations were all fairly low (0.40 ng/L or less); the highest concentration was detected at The Dalles.

USGS at 24.

For the reasons explained below, the City's wastewater discharge has reasonable potential to violate Oregon's aquatic life water quality standard for mercury at the edge of the mixing zone. The permit therefore requires a WQBEL for mercury. DEQ's draft permit, however, fails to include a WQBEL for mercury. Specifically, the permit evaluation states:

The aquatic toxicity RPA showed RP at the 'end of pipe' for copper, mercury, silver, and zinc. Ambient samples of these parameters were taken at the time the mixing study was conducted and used in the RPA. Final RPA results indicated that these parameters are not causing toxicity at the edge of the mixing zone.

Permit Evaluation at 12. DEQ's conclusion is in error. First, DEQ failed to follow the agency's policy guidance on implementing the methylmercury criterion in NPDES permits. Under this guidance, the City's discharge has reasonable potential to violate water quality standards and, therefore, requires a WQBEL. Second, while DEQ's guidance directs the permit writer to develop a Methylmercury Minimization Plan, the Clean Water and its implementing regulations require that DEQ either: (1) adopt a WQBEL in the permit or, (2) issue a compliance schedule, including an enforceable final effluent limitation and a date for its achievement, *see* 40 C.F.R. § 122.47(a)(1). A Methylmercury Minimization Plan could be a component of the compliance schedule. Under DEQ's variance rules, the City also has the option of applying for a variance. However, based on available information, it does not appear that the City qualifies for the extreme remedy of a variance.

DEQ's guidance on methylmercury, *Implementation of Methylmercury Criterion in NPDES Permits*, states:

Reasonable Potential Determination: Where quantifiable concentrations of total mercury are identified in a discharge, it is necessary to determine whether fish tissue concentrations of MeHg in the receiving water are close to or exceeding the human health water quality criterion. Normally, EPA recommends that state water quality programs include special permit conditions into their permits that require the permittees to conduct a fish tissue survey of the receiving water body along with a re-opener clause to complete the reasonable potential evaluation once the survey is complete. Recognizing the substantial costs associated with these surveys and the assumption that a majority of the State's waters routinely exceed the water quality criterion for mercury, DEQ has chosen an alternative (although allowable per EPA Guidance) pathway and directs the following:

- Any facility contributing¹² significant and consistent¹³ concentrations of total mercury to the receiving water body is considered to have the reasonable potential to exceed the water quality criterion unless a site-specific survey determines otherwise.

DEQ, *Implementation of Methylmercury Criterion in NPDES Permits, Version 1* at 3 (Jan. 8, 2013). Footnote 12, describing the meaning of "contributing" states: "When determining if a 'contribution' is occurring, the permit writer may consider an Intake Credit pursuant to OAR

340-045-0105 and Appendix F of the RPA IMD (Intake Credit Guidance.” *Id.* at 3. Footnote 13, which describes the meaning of “significant and consistent,” states:

Significant concentrations are those results greater than the Quantitation Level of the method. When determining the ‘consistency’ of the concentrations, the permit writer should consider all of the available sample results (min. of 4) to determine if the presence of total mercury is a chronic condition or a statistical aberration. When reviewing the Tier 1 monitoring data the permit writer should be aware that elemental mercury concentrations are higher in the winter and spring (methylation decreases), while MeHg concentrations are higher in the summer and fall periods (methylation increases).

Id.

The City’s monitoring results demonstrate that the sewage treatment plant is contributing significant and consistent concentrations of total mercury to the Columbia River. Accordingly, the discharge has a reasonable potential to exceed the water quality criterion. Because there is not a site-specific survey that demonstrates otherwise, DEQ must include a WQBEL for mercury in the draft permit.

DEQ’s *Implementation of Methylmercury Criterion in NPDES Permits* guidance directs permit writers to follow three steps if there is reasonable potential to exceed water quality standards. Specifically, DEQ guidance states:

Because the water quality criterion for MeHg is a fish tissue-based concentration rather than a water column concentration, permit limits for MeHg cannot be expressed in terms of a concentration (with out a translation factor). Instead, for facilities where a reasonable potential to exceed the criterion is assumed or determined, the permit writer must:

- As a Schedule D permit condition, require the permittee to develop and implement an MMP (Mercury Minimization Plan) tailored to the facility’s potential to discharge mercury. Depending on the particular facts, the permitting authority may include in the MMP a trigger level, reduction goal, or enforceable numeric level (e.g., existing effluent quality) to further manage mercury discharges.
- Require continued effluent monitoring (total mercury) using a sufficiently sensitive EPA-approved method to enable evaluation of the effectiveness and implementation of the MMP.
- Include a reopener clause to modify the permit conditions if the MMP are not found to be effective or if a water column translation of the fish tissue criterion is developed.

DEQ, *Implementation of Methylmercury Criterion in NPDES Permits* at 3. DEQ failed to follow this three step process in developing the draft permit. In addition, DEQ failed to use a translation factor to develop a WQBEL in the draft permit. Under the Clean Water Act, DEQ cannot exempt a permittee from an otherwise applicable WQBEL absent a variance, compliance schedule, or other compliance off-ramp authorized by the Clean Water Act.

Question: Why did DEQ fail to follow the three step process discussed above?

Question: What is DEQ’s authority for failing to include a WQBEL for mercury in the draft permit?

The importance of reducing mercury pollution from the City's wastewater is highlighted by a recent health advisory for fish caught in the Mid-Columbia. On September 23, 2013, the Oregon Health Authority and Washington Department of Health issued a fish advisory for resident fish in the Mid-Columbia.² This includes the Columbia River at the City's pollution discharge outfall. Because of PCB and mercury (Hg) contamination, the health authorities recommend that people limit their consumption of sturgeon, bass, bluegill, yellow perch, crappie, walleye, catfish, and suckers to one meal per week. The fish advisory applies to the 150 miles of the Mid-Columbia River between Ruckel Creek and McNary Dam. Under DEQ's 2010 303(d) listing methodology, this fish advisory should result in DEQ listing this 150 mile reach of the Columbia River on the 303(d) list for mercury in the near future.

4. Copper.

The growing body of scientific literature indicates that dissolved copper is a potent neurotoxicant that directly damages the sensory capabilities of salmonids at low concentrations. According to the National Marine Fisheries Service, more than three decades of experimental results demonstrate that the sensory systems of salmonids are particularly vulnerable to the neurotoxic effects of dissolved copper. Recent experimental evidence shows that juvenile sensory system-mediated behaviors are also affected by short term exposures to dissolved copper. See Hecht, S.A. *et al.*, An Overview of Sensory Effects on Juvenile Salmonids Exposed to Dissolved Copper: Applying a Benchmark Concentration Approach to Evaluate Sublethal Neurobehavioral Toxicity at xiii (Exhibit 3). NMFS states:

Point and nonpoint source discharges from anthropogenic activities frequently exceed these thresholds by one, two, and sometimes three orders of magnitude, and can occur for hours to days. The U.S. Geological Survey ambient monitoring results for dCu representing 811 sites across the United States detected concentrations ranging 1–51 µg/L, with a median of 1.2 µg/L. Additionally, typical dCu concentrations originating from road runoff from a California study were 3.4–64.5 µg/L, with a mean of 15.8 µg/L. Taken together, the information reviewed and presented herein indicates that impairment of sensory functions important to survival of juvenile salmonids is likely to be widespread in many freshwater aquatic habitats. Impairment of these essential behaviors may manifest within minutes and continue for hours to days depending on concentration and exposure duration. Therefore, dCu has the potential to limit the productivity and intrinsic growth potential of wild salmon populations by reducing the survival and lifetime reproductive success of individual salmonids.

Id. at x.

² See Oregon Health Authority, *Limit consumption of some fish species near Bonneville Dam, middle Columbia River* (Sept. 23, 2013) (<http://www.oregon.gov/oha/news/Documents/2013-0923-mid-columbia-fish-advisory.pdf>) (Exhibit 2).

DEQ's permit evaluation notes that the aquatic toxicity reasonable potential analysis showed reasonable potential to exceed the water quality criterion for copper at the "end of pipe." DEQ concluded that that a WQBEL for copper is not required because final reasonable potential analysis results indicated that copper is not causing toxicity at the edge of the mixing zone.

In addition to numeric criteria, DEQ must ensure the permit complies with the state's narrative water quality standards. OAR 340-041-0007(1) states:

Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, **toxic materials**, radioactivity, turbidities, color, odor, and other deleterious factors **at the lowest possible levels**.

Question: How does the draft permit ensure that the highest and best practicable treatment is provided to maintain overall water quality at the highest possible levels and toxic materials, in this case copper, at the lowest possible levels?

Riverkeeper urges DEQ to include a WQBEL for copper based on the overwhelming science demonstrating harm to salmonids from copper.

5. Silver.

Silver is one of the most toxic of the heavy metals to freshwater micro-organisms. Water hardness, length of exposure, size of the organism and life stage of the organism all affect the toxicity values. Invertebrates and embryos of fish are generally much more sensitive than juvenile and adult fish. Silver is most toxic to microscopic organisms or larval forms of aquatic animals.

Question: How does the draft permit ensure compliance with OAR 340-041-0007(1)? Specifically, how does the draft permit ensure that the highest and best practicable treatment is provided to maintain overall water quality at the highest possible levels and toxic materials, in this case silver, at the lowest possible levels?

Riverkeeper urges DEQ to require a WQBEL for silver because the RPA demonstrates that the City's discharge violates the water quality criterion for silver at the end of pipe.

6. Zinc.

Zinc binds with silt and can harm or suffocate fish. In high enough concentrations, zinc can kill many adult fish species. Adverse effects of dissolved zinc, including altered behavior,

blood and serum chemistry, impaired reproduction, and reduced growth, occur to salmon at very low levels (5.6 µg/L in freshwater).

Question: How does the draft permit ensure compliance with OAR 340-041-0007(1)? Specifically, how does the draft permit ensure that the highest and best practicable treatment is provided to maintain overall water quality at the highest possible levels and toxic materials, in this case zinc, at the lowest possible levels?

Riverkeeper urges DEQ to require a WQBEL for zinc because the RPA demonstrates that the City's discharge violates the water quality criterion for silver at the end of pipe.

7. Phthalates (Bis (2-ethylhexyl) phthalate).

Bis (2-ethylhexyl) phthalate (DEHP) samples exceeds the state's water quality criterion at the end of pipe. The Permit Evaluation states that "[t]he human health RPA showed RP at the 'end of pipe' for . . . bis (2-ethylhexyl) phthalate." DEQ, however, did not complete a reasonable potential analysis for bis (2-ethylhexyl) phthalate. Instead, the Permit Evaluation states "[a]mbient samples and possibly effluent samples for bis (2-ethylhexyl) phthalate will need to be taken to finalize the RPA . . . In approximately 2 year the Department will complete the RPA and determine potential effluent limits for phthalates." DEQ fails to explain: (1) why the agency could not obtain additional samples during the permit evaluation period, (2) why additional samples are necessary to complete the reasonable potential analysis, and (3) the agency's authority to waive compliance with water quality standards for two years (absent a variance, compliance schedule, or other off-ramp authorized by law).

The U.S. Environmental Protection Agency (EPA) classifies bis(2-ethylhexyl) phthalate (DEHP) as a Group B2, probable human carcinogen.³ It exhibits low toxicity from acute (short-term) and chronic (long-term) exposures. Animal studies have reported increased lung weights and increased liver weights from chronic inhalation exposure to DEHP. Given the serious human health impacts from this toxic pollutant, Riverkeeper urges DEQ to use its full authority to protect people who eat fish caught near and downstream of the City's outfall.

C. Responses to Permit Violations.

The Permit Evaluation describes compliance history during the previous permit cycle.

Question: Is DEQ aware of any raw sewage discharges in 2013?

Question: Did DEQ investigate the cause of past exceedances?

³ U.S. EPA, Hazard Summary, Bis (2-ethylhexyl) phthalate, available at <http://www.epa.gov/ttnatw01/hlthef/eth-phth.html>.

Question: Did DEQ require measures to ensure that similar exceedances will not occur in the future? If so, what are these measures?

D. Request for Meeting.

Riverkeeper and NEDC request a meeting with DEQ to discuss the concerns raised in this public comment. Please contact Riverkeeper's Staff Attorney, Lauren Goldberg, at lauren@columbiariverkeeper.org or 541-965-0985, to schedule a meeting to discuss issues raised in this comment.

Thank you in advance for considering Columbia Riverkeeper and the Northwest Environmental Defense Center's input on the draft NPDES permit for the City of The Dalles.

Sincerely,

A handwritten signature in cursive script that reads "Lauren Goldberg".

Lauren Goldberg
Staff Attorney
Columbia Riverkeeper

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