Oregon
Tina Kotek, Governor

Department of Environmental Quality
Northwest Region Portland Office/Water Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5696
FAX (503) 229-6124
TTY 711

March 7, 2024

Amanda Haney
City of Portland
1120 SW 5th Ave Rm 613
Portland, OR 97204-1912

Re: NPDES Permit Public Notice Period
Comments Due: April 11, 2024, 5 p.m.
File no. 70735
Permit no. 101614
EPA no. OR0026891
Facility: Tyron Creek WWTP, 195 Foothills Rd., Lake Oswego
Clackamas County

Enclosed please find the Public Notice drafts for your proposed National Pollutant Discharge Elimination System permit including a copy of the public notice, draft permit, and draft fact sheet. Please be aware that the City of Portland may provide additional comment on the permit during this time and submit to:

Trinh Hansen, Water Quality Permit Coordinator
DEQ Western Region
4026 Fairview Industrial Way Dr. SE
Salem, OR 97302
trinh.hansen@deq.oregon.gov

Your comments **must be received by 5 p.m. on April 11, 2024**. DEQ will hold a public hearing if DEQ receives written requests for a hearing during the public comment period from at least 10 people, or from an organization representing 10 or more people. DEQ gives equal weight to written and oral comments. When the public participation period has ended, DEQ will take final action on your application.

Please contact me at 503-378-5055 with any questions about permitting processing.

Sincerely,

Trinh Hansen

Trinh Hansen
Water Quality Permit Coordinator
Western Region, Salem Office

ec: Source File, Portland Office, DEQ
Mike Pinney, Portland, DEQ
ORMS

PUBLIC NOTICE

Date posted: 3/7/24

DEQ Requests Comments on Proposed Tryon Creek WWTP Water Quality Permit Renewal

HOW TO PROVIDE PUBLIC COMMENT

Facility name: City of Portland Tryon Creek Wastewater Treatment Plant

Permit type: National Pollutant Discharge Elimination System permit

Comments due by: Thursday, April 11, 2024 at 5 p.m.

Send written comments to: Trinh Hansen, DEQ Water Quality Permit Coordinator

By mail: 4026 Fairview Industrial Drive SE Salem, OR 97302

By email: trinh.hansen@deq.oregon.gov

The Oregon Department of Environmental Quality invites the public to provide written comments on the conditions of Tryon Creek Wastewater Treatment Plant's proposed water quality permit, known officially as a National Pollutant Discharge Elimination System permit.

Summary

Subject to public review and comment, DEQ intends to renew the proposed water quality permit, which allows Tryon Creek Wastewater Treatment Plant to discharge wastewater to the Willamette River.

About the facility

The City of Portland has applied for a water quality permit renewal for Tryon Creek Wastewater Treatment Plant located at 195 Foothills Rd. in Lake Oswego. DEQ last renewed this permit on Oct. 20, 2004. The facility treats domestic wastewater from Lake Oswego and areas of southwest Portland.

The facility discharges to the Willamette River near Foothills Park in Lake Oswego. The Willamette River is listed as impaired (category 4 or 5) for several pollutants according to the most recent U.S. Environmental Protection Agency-approved integrated report for Oregon. The proposed permit reflects effluent limits established through reasonable potential analysis, technology based effluent limits and/or the Willamette River Total Maximum Daily Load, or TMDL, for biochemical oxygen demand, total suspended solids, total residual chlorine, pH, *e. coli*, and temperature.

The most recent DEQ inspection of the Tryon Creek wastewater treatment plant was on Aug. 5, 2015. DEQ did not identify violations during this inspection. The facility has had no water quality violations in the past permit term.

The facility holds no other permits from DEQ.

Translation or other formats

Español | 한국어 | 繁體中文 | Русский | Tiếng Việt | العربية

800-452-4011 | TTY: 711 | deqinfo@deq.oregon.gov

State of Oregon DEQ Department of Environmental Quality

What types of pollutants does the permit regulate?

This permit sets conditions for how the facility deals with the following pollutants: biochemical oxygen demand, total suspended solids, total residual chlorine, pH, *e. coli*, and temperature.

Would the draft permit change the amount of pollution the facility is allowed to release?

Yes. The draft permit proposes to decrease the effluent limit for total residual chlorine and establish new limits for excess thermal load (temperature).

Pollutant	Change
Total Residual Chlorine	Decrease
Excess Thermal Load (Temperature)	New

How did DEQ determine permit requirements?

DEQ evaluates types and amounts of pollutants and the water quality of the surface water or groundwater where the pollutants are proposed to be discharged. DEQ determines permit requirements to ensure the proposed discharges will meet applicable statutes, rules, regulations and effluent guidelines of Oregon and the Clean Water Act.

For this proposed permit action, DEQ reviewed the renewal application, all previous permits and fact sheets and associated administrative records, regional water quality data and research, discharge monitoring reports and attachments submitted by the permittee, all available mixing zone studies and memos, the current biosolids management plan, all available compliance and enforcement documents in the administrative record, records of communications with the permitee, and other documents contained within the administrative record. DEQ relied solely on these documents and made no other discretionary decisions for the permit action.

How does DEQ monitor compliance with the permit requirements?

This permit will require the facility to monitor pollutants discharged using approved monitoring practices and standards. DEQ reviews the facility's discharge monitoring reports to check for compliance with permit limits.

What happens next?

Submit comments by sending an email or letter addressed to the permit coordinator listed in the "how to provide public comment" box above.

DEQ will hold a public hearing if it receives written requests for a hearing during the public comment period from at least 10 people or from an organization representing at least 10 people.

DEQ will consider and respond to all comments received and may modify the proposed permit based on comments.

For more information

Find more information by reviewing draft permit documents attached to this notice, or contact Trinh Hansen at 503-378-5055, 800-349-7677 or trinh.hansen@deq.oregon.gov with questions or to view documents in person at a DEQ office.

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age or sex in administration of its programs or activities. Visit DEQ's Civil Rights and Environmental Justice page.

State of Oregon Department of Environmental Quality

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM WASTE DISCHARGE PERMIT

Oregon Department of Environmental Quality
Northwest Region – Portland Office
700 NE Multnomah St., Suite 600
Portland, OR 97232
Telephone: 503-229-5263

Issued pursuant to ORS 468B.050 and the federal Clean Water Act.

ISSUED TO:

City of Portland
1120 SE 5th Ave Rm 613
Portland, OR, 97204

SOURCES COVERED BY THIS PERMIT:

Type of Waste	Outfall Number	Outfall Location
Treated Wastewater	001	45.423081, -122.656392

FACILITY LOCATION:

Tryon Creek WWTP
195 Foothills Rd.
Lake Oswego, OR, 97034
County: Clackamas
EPA Permit Type: Major

RECEIVING STREAM INFORMATION:

Receiving stream/NHD name: Willamette River
USGS 12-Digit HUC: 170900120104
OWRD Administrative Basin: Willamette
NHD Reach Code & % along reach: 17090012006672; 79.35%
ODEQ LLID & RM: 1227618456580, RM 20.03
Integrated Report AU ID: OR_SR_1709001201_88_104019

Issued in response to Application No. 971987 received March 30, 2009. This permit is issued based on the land use findings in the permit record.

DRAFT	DRAFT	DRAFT
Tiffany Yelton-Bram Water Quality Manager Northwest Region	Issuance Date	Effective Date

PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the permittee is authorized to: 1) operate a wastewater collection, treatment, control and disposal system; and 2) discharge treated wastewater to waters of the state only from the authorized discharge point or points in Schedule A in conformance with the requirements, limits, and conditions set forth in this permit.

Unless specifically authorized by this permit, by another NPDES or Water Pollution Control Facility permit, or by Oregon statute or administrative rule, any other direct or indirect discharge of pollutants to waters of the state is prohibited.

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Note: Schedule E (Pretreatment Activities) is not part of this permit.

LIST OF TABLES

SCHEDULE A: WASTE DISCHARGE LIMITS

1. Outfall 001 – Permit Limits

During the term of this permit, the permittee must comply with the limits in the following table:

Table A1: Permit Limits

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD_5 (May 1 – October 31) (See note e.)	mg/L	20	30	-
	lb/day	1400	2100	2800
	% removal	85	-	-
TSS (May 1 – October 31) (See note e.)	mg/L	20	30	-
	lb/day	1400	2100	2800
	% removal	85	-	-
BOD_5 (November 1 – April 30) (See note e.)	mg/L	30	45	-
	lb/day	3100	4600	6100
	% removal	85	-	-
TSS (November 1 – April 30) (See note e.)	mg/L	30	45	-
	lb/day	3100	4600	6100
	% removal	85	-	-
Chlorine, Total Residual (Final) (See note a.)	mg/L	0.16	-	0.42
Chlorine, Total Residual (Interim) (See note a.)	mg/L	0.61	-	1.41
pH	SU	Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 9.0		
E. coli (See note b.)	#/100 mL	Must not exceed a monthly geometric mean of 126, no single sample may exceed 406		
Excess Thermal Load (June 1 – September 30) (See notes c and d.)	Mkcals/day	Option A: 74 (as a 7-day rolling average)		
		Option B: $(0.0027 \cdot Q_R) + 52$ (as a 7-day rolling average)		

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum

Notes:

a. The interim Total Residual Chlorine limits are effective upon permit effective date. The final Total Residual Chlorine limits are effective after completion of the compliance schedule in Schedule C.

b. If a single sample exceeds 406 organisms/100 mL, the permittee may take at least 5 consecutive re-samples at 4-hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample was taken. A geometric mean of the 5 re-samples that is less than or equal to 126 *E. coli* organisms/100 mL demonstrates compliance with the limit.

c. The permittee must select either Option A or Option B as the applicable 7-day rolling average ETL limit (ETLL). If the permittee selects Option B, the permittee must then calculate the 7-day rolling average ETLL using the equation for each day that the Option B limit is selected. The 7-day rolling average for any day is the average of the daily ETL limit values for that day and the preceding six (6) days. Q_R = daily average Willamette River flow, as measured in cfs at USGS gaging station ID#14211720. The minimum river flow value to be used is 6290 cfs, the 7Q10 low flow used in the TMDL. (If the permittee wishes to use another measurement method for Willamette River flow, then that method must be approved by DEQ prior to use).

d. To calculate the discharged excess thermal load for comparison against the effluent limit, see Schedule B, Table B2.

e. On any day that the daily flow to a sewage treatment facility exceeds the lesser hydraulic capacity of the secondary treatment portion of the facility or twice the design average dry weather flow, the daily mass load limit does not apply. The permittee must operate the treatment facility at highest and best practicable treatment and control.

2. Regulatory Mixing Zone

Pursuant to OAR 340-041-0053, the permittee is granted a regulatory mixing zone as described below:

The regulatory mixing zone is a rectangular portion of the Willamette River centered on the diffuser mid-point and oriented to true north and south. The regulatory mixing zone has a 400-foot total length (200 feet north (downstream) and south (upstream)), and a 240-foot width (120 feet east and 120 feet west centered on the diffuser mid-point). The zone of immediate dilution is the area within 20 feet of all diffuser ports.

3. Mercury Minimization Plan

a. By the date listed in Table B1, the permittee must submit an MMP (Mercury Minimization Plan) to DEQ for review and approval.

b. The permittee must use DEQ MMP template for final plans and modifications unless authorized in writing by DEQ to use an alternative.

c. If DEQ comments on the MMP, the permittee must respond to DEQ's comments in writing within 30 calendar days by submitting an updated MMP.

d. After resolving comments (if any) on the plan, DEQ will post the MMP to solicit public comment for a minimum of 35 days.

e. The permittee must begin implementation of the plan within 90 calendar days after being notified in writing that the public comment period has ended and DEQ has approved the plan.

f. The MMP must include:

i. Facility name and permit number

ii. Name and signature of party responsible for developing or reviewing the plan

iii. Plan submittal date

iv. Identification and evaluation of current and potential mercury sources, including industrial, commercial, and residential sources

v. An implementation plan that includes specific methods for reducing mercury

vi. Mercury sample results for samples collected during the past five years

vii. Annual average effluent mercury concentrations and mass loads

viii. Annual average biosolids concentrations and mass loads (This information is not required to be included if the biosolids are processed at the Columbia Blvd. WWTP (Permit No. 101505) and the information is continually reported as part of the MMP developed for that facility.)

g. If DEQ determines that the MMP is not effective at reducing mercury concentrations, DEQ may require further changes to the MMP and may reopen the permit to modify the permit conditions.

SCHEDULE B: MINIMUM MONITORING AND REPORTING REQUIREMENTS

1. Reporting Requirements

The permittee must submit to DEQ monitoring results and reports as listed below.

Table B1: Reporting Requirements and Due Dates

Reporting Requirement	Frequency	Due Date (See note a.)	Report Form (See note b.)	Submit To:
Mercury Minimization Plan (see Schedule A)	One time	Submit by 06/15/2026 [The 15th day 24 months after permit effective date]	One electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ
Tables B2, and B3, Influent Monitoring and Effluent Monitoring	Monthly	By the 15th of the following month	Specified in Schedule B. Section 2 of this permit	Electronic reporting as directed by DEQ
Table B5: Copper Biotic Ligand Model and Aluminum Sampling Requirements	Monthly between January 2027 through October 2027 [starting the third year of the permit cycle].	By the 15th of the following month	Electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ
Tables B4, and B6 – B9: Effluent Toxics Characterization	Quarterly for 3 years starting Q4 (Oct) of 2025 until 12 samples are collected [same start date as WET] (See note c.)	By the 15th of the month following each quarter	Electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ
Table B10: WET Test Monitoring	Every 3rd quarter starting Q4 (Oct) of 2025 until 4 samples are collected [same start date as toxics] (See note c.)	With the first DMR submittal after receipt of the test results	Electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ
Inflow and infiltration report (see Schedule D)	Annually	February 15	Electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ
Wastewater solids annual report (see Schedule D)	Annually	By February 19 of the following year	Electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ Electronic copy to DEQ Biosolids Program Coordinator

Reporting Requirement	Frequency	Due Date (See note a.)	Report Form (See note b.)	Submit To:
Outfall Inspection Report (see Schedule D)	Once per permit cycle	Submit by 11/15/2027 [In the 3rd year of the permit.]	Electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ

Notes:

a. For submittals that are provided to DEQ by mail, the postmarked date must not be later than the due date.

b. All reporting requirements are to be submitted in a DEQ-approved format, unless otherwise specified in writing.

c. Quarters are defined as: Q1: Jan – Mar, Q2: Apr – June, Q3: Jul – Sept, Q4: Oct – Dec. If no discharge occurs during the quarter, continue sampling quarterly until 4 sets of samples have been collected. WET tests and toxics characterization testing must be collected on the same day.

2. Monitoring and Reporting Protocols

a. Electronic Submissions

The permittee must submit to DEQ the results of monitoring indicated in Schedule B in an electronic format as specified below.

i. The permittee must submit monitoring results required by this permit via DEQ-approved web-based Discharge Monitoring Report (DMR) forms to DEQ via electronic reporting. Any data used to calculate summary statistics must be submitted as a separate attachment approved by DEQ via electronic reporting.

ii. The reporting period is the calendar month.

iii. The permittee must submit monitoring data and other information required by this permit for all compliance points by the 15th day of the month following the reporting period unless specified otherwise in this permit or as specified in writing by DEQ.

b. Test Methods

The permittee must conduct monitoring according to test procedures in 40 CFR 136 and 40 CFR 503 for biosolids or other approved procedures as per Schedule F.

c. Detection and Quantitation Limits

i. Detection Level (DL) – The DL is defined as the minimum measured concentration of a substance that can be distinguished from method blank results with 99% confidence. The DL is derived using the procedure in 40 CFR 136 Appendix B and evaluated for reasonableness relative to method blank concentrations to ensure results reported above the DL are not a result of routine background contamination. The DL is also known as the Method Detection Limit (MDL) or Limit of Detection (LOD).

ii. Quantitation Limits (QLs) – The QL is the minimum level, concentration or quantity of a target analyte that can be reported with a specified degree of confidence. It is the lowest level at which the entire analytical system gives a recognizable signal and acceptable calibration for the analyte. It is normally equivalent to the concentration of the lowest calibration standard adjusted for sample weights, volumes, preparation, and cleanup procedures employed. The QL as reported by a laboratory is also sometimes referred to as the Method Reporting Limit (MRL) or Limit of Quantitation (LOQ).

d. Sufficient Sensitivity of Quantitation Limits

i. The Laboratory QLs (adjusted for any dilutions) for analyses performed to demonstrate compliance with permit limits or as part of effluent characterization, must meet at least one of the requirements below:

(A) The QL is at or below the level of the water quality criterion for the measured parameter.

(B) The QL is above the water quality criterion but the amount of the pollutant in a facility's discharge is high enough that the method detects and quantifies the level of the parameter in the discharge.

(C) The QL has the lowest sensitivity of the analytical methods procedure specified in 40 CFR 136.

(D) The QL is at or below those defined in Oregon DEQ list of quantitation limits posted online at DEQ permitting website.

ii. Matrix effects are present that prevent the attainment of QLs and these matrix effects are demonstrated according to procedures described in EPA's "*Solutions to Analytical Chemistry Problems with Clean Water Act Methods*", March 2007. If using alternative methods and taking appropriate steps to eliminate matrix effects does not eliminate the matrix problems, DEQ may authorize in writing re-sampling or allow a higher QL to be reported.

e. Quality Assurance and Quality Control

i. Quality Assurance Plan – The permittee must develop and implement a written Quality Assurance Plan that details the facility sampling procedures, equipment calibration and maintenance, analytical methods, quality control activities and laboratory data handling and reporting. The QA/QC program must conform to the requirements of 40 CFR 136.7.

ii. If QA/QC requirements are not met for any analysis, the permittee must re-analyze the sample. If the sample cannot be re-analyzed, the permittee must re-sample and analyze at the earliest opportunity. If the permittee is unable to collect a sample that meets QA/QC requirements, then the permittee must include the result in the discharge monitoring report (DMR) along with a notation (data qualifier). In addition, the permittee must explain how the sample does not meet QA/QC requirements. The permittee may not use the result that failed the QA/QC requirements in any calculation required by the permit unless authorized in writing by DEQ. If these method criteria are not met for BOD_5, the permittee must: 1) report the daily BOD_5 values with data qualifiers; 2) include these BOD_5 values in the summary statistic calculations (e.g., weekly averages, monthly averages, % removal); and 3) report the BOD_5 summary statistics with data qualifiers.

iii. Flow measurement, field measurement, and continuous monitoring devices - The permittee must:

(A) Establish verification and calibration frequency for each device or instrument in the quality assurance plan that conforms to the frequencies recommended by the manufacturer.

(B) Verify at least once per year that flow-monitoring devices are functioning properly according to manufacturer's recommendation. Calibrate as needed according to manufacturer's recommendations.

(C) Verify at least weekly that the continuous monitoring instruments are functioning properly according to manufacturer's recommendation unless the permittee demonstrates a longer period is sufficient and such longer period is approved by DEQ in writing.

iv. The permittee must develop a receiving water sampling and analysis plan that incorporates QA/QC prior to sampling. This plan must be kept at the facility and made available to DEQ upon request.

f. Reporting Sample Results

i. The permittee must report the laboratory DL and QL as defined above for each analyte, with the following exceptions: pH, temperature, BOD, CBOD, TSS, Oil & Grease, hardness, alkalinity, bacteria, and nitrate-nitrite. For temperature and pH, neither the QL nor the DL need to be reported. For the other parameters listed above, the permittee is only required to report the QL and only when the result is ND.

ii. The permittee must report the same number of significant digits as the permit limit for a given parameter.

iii. Chemical Abstracts Service (CAS) Numbers. CAS numbers (where available) must be reported along with monitoring results.

iv. (For Discharge Monitoring Reports) If a sample result is above the DL but below the QL, the permittee must report the result as the DL preceded by DEQ's data code "E". For example, if the DL is 1.0 µg/l, the QL is 3.0 µg/L and the result is estimated to be between the DL and QL, the permittee must report "E1.0 µg/L" on the DMR. This requirement does not apply in the case of parameters for which the DL does not have to be reported.

v. (For Discharge Monitoring Reports) If the sample result is below the DL, the permittee must report the result as less than the specified DL. For example, if the DL is 1.0 µg/L and the result is ND, report "<1.0" on the discharge monitoring report (DMR). This requirement does not apply in the case of parameters for which the DL does not have to be reported.

g. Calculating and Reporting Mass Loads

The permittee must calculate mass loads on each day the parameter is monitored using the following equation:

Example calculation: Flow (in MGD) X Concentration (in mg/L) X 8.34 = Pounds per day

i. Mass load limits all have two significant figures unless otherwise noted.

ii. When concentration data are below the DL: To calculate the mass load from this result, use the DL. Report the mass load as less than the calculated mass load. For example, if flow is 2 MGD and the reported sample result is <1.0 µg/L, report "<0.017 lb/day" for mass load on the DMR (1.0 µg/L x 2 MGD x conversion factor = 0.017 lb/day).

iii. When concentration data are above the DL, but below the QL: To calculate the mass load from this result, use the DL. Report the mass load as the calculated mass load preceded by "e". For example, if flow is 2 MGD, the DL is 1.0 µg/L, the QL is 5 µg/L and the reported sample result is e3.5 µg/L, report "e0.017 lb/day" for mass load on the DMR (1.0 µg/L x 2 MGD x conversion factor = 0.017 lb/day,).

3. Monitoring and Reporting Requirements

a. The permittee must monitor influent between the inflow to the bar screens and the inflow to the primary clarifiers and report results in accordance with Table B1 and the table below.

Table B2: Influent Monitoring Requirements

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type / Required Action (See note a.)	Report Statistic (See note b.)
Flow (50050)	MGD	Year-round	Daily	Metered	1. Monthly Average 2. Daily Maximum
BOD_5 (00310)	mg/L	Year-round	3/week	24-hour composite	Monthly Average
TSS (00530)	mg/L	Year-round	3/week	24-hour composite	Monthly Average
pH (00400)	SU	Year-round	Daily	Grab	1. Monthly Maximum 2. Monthly Minimum

Notes:

a. In the event of equipment failure or loss, the permittee must notify DEQ and deploy new equipment to minimize interruption of data collection. If new equipment cannot be immediately deployed, the permittee must perform grab measurements.

b. When submitting DMRs electronically, the permittee must submit all data used to determine summary statistics in a DEQ-approved format as a spreadsheet via electronic reporting unless otherwise directed by DEQ.

b. The permittee must monitor effluent at Outfall 001 after the chlorine contact chamber and prior to discharge and report results in accordance with Table B1 and the table below:

Table B3: Effluent Monitoring Requirements

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type/ Required Action (See note a.)	Report Statistic (See note b.)
Flow (50050)	MGD	Year-round	Daily	Metered	1. Monthly Average 2. Daily Maximum
BOD_5 (00310)	mg/L	Year-round	3/week	24-hour composite	1. Monthly Average 2. Maximum Weekly Average
BOD_5 (00310)	lb/day	Year-round	3/week	Calculation	1. Daily Maximum 2. Monthly Average 3. Maximum Weekly Average
BOD_5 percent removal (See note c.) (81010)	%	Year-round	Monthly	Calculation based on monthly average BOD_5 concentration values	Monthly Average
TSS (00530)	mg/L	Year-round	3/week	24-hour composite	1. Monthly Average 2. Maximum Weekly Average
TSS (00530)	lb/day	Year-round	3/week	Calculation	1. Daily Maximum 2. Monthly Average 3. Maximum Weekly Average
TSS percent removal (81011) (See note c.)	%	Year-round	Monthly	Calculation based on monthly average TSS concentration values	Monthly Average

pH (00400)	SU	Year-round	Daily	Grab	1. Daily Maximum 2. Daily Minimum
Chlorine, Total Residual (50060)	mg/L	Year-round	Daily	Grab	1. Daily Maximum 2. Monthly Average
Mercury, Total Recoverable (MMP) (71901) (See note d.)	µg/L	First year of the permit cycle and every third year thereafter	Quarterly	24-hour composite	Quarterly Value
Temperature (00010) (See notes e, f, g, h, and i.)	ºC	Year-round	Daily	Continuous	1. Daily Maximum 2. Monthly Average 3. 7-day Rolling Average of Daily Maximum
Excess Thermal Load (See notes e, f, g, h, and i.) (51405)	Million kcal/day	June 1 - Sept. 30	Daily	Calculation	Maximum 7-day Rolling Average
Excess Thermal Load Limit (See notes e, f, g, h and i.)	Million kcal/day	June 1 - Sept. 30	Daily	Calculation	Maximum 7-day Rolling Average
E. coli (51040)	#/100 mL	Year-round	3/week	Grab	1. Daily Maximum 2. Monthly Geometric Mean
Total ammonia (as N) (00610)	mg/L	Year-round	1/month	24-hour composite	Monthly Maximum
Chlorine used (81400)	lb/day	Year-round	Daily	Scale reading	Maintain records on-site
Dissolved Oxygen (see note j.) (00300)	mg/L	Third year of permit cycle [year]	Quarterly	24-hour composite	Quarterly Minimum
Total Kjeldahl Nitrogen (TKN) (00625)	mg/L	Third year of permit cycle [year]	Quarterly	24-hour composite	Quarterly Maximum

Nitrate (NO_3) Plus Nitrite (NO_2) Nitrogen (00630)	mg/L	Third year of permit cycle [year]	Quarterly	24-hour composite	Quarterly Maximum
Oil and Grease (00556)	mg/L	Third year of permit cycle [year]	Quarterly	Grab	Quarterly Maximum
Total Phosphorus (00665)	mg/L	Third year of permit cycle [year]	Quarterly	24-hour composite	Quarterly Maximum
Total Dissolved Solids (70295)	mg/L	Third year of permit cycle [year]	Quarterly	24-hour composite	Quarterly Maximum

Notes:

a. In the event of equipment failure or loss, the permittee must notify DEQ and deploy new equipment to minimize interruption of data collection. If new equipment cannot be immediately deployed, the permittee must perform grab measurements. If the failure or loss is for continuous temperature monitoring equipment, the permittee must collect one grab sample daily between 12 PM and 5 PM until continuous monitoring equipment is redeployed.

b. When submitting DMRs electronically, all data used to determine summary statistics must be submitted in a DEQ-approved format as a spreadsheet via electronic reporting unless otherwise directed by DEQ.

c. Percent Removal must be calculated on a monthly basis using the following formula:

$$Percent\ Removal = \frac{[Influent\ Concentration] - [Effluent\ Concentration]}{[Influent\ Concentration]} \times 100$$

Where:

Influent Concentration = Corresponding Monthly average influent concentration based on the analytical results of the reporting period.

Effluent Concentration = Corresponding Monthly average effluent concentration based on the analytical results of the reporting period.

d. Example: If permit effective date is March 1, 2021; Monitoring is required quarterly from April 1, 2021 to March 31, 2022; and quarterly from April 1, 2025 to March 31, 2026; and continuing every three years until permit renewal.

e. The daily excess thermal load (ETL) discharged must be calculated using the daily maximum effluent temperature and the corresponding daily effluent flow using the formula below.

The 7-day rolling average is then calculated from the daily ETLs.

The daily ETL is calculated as follows: $ETL = 3.785 * Q_e * \Delta T$

Where:

ETL = Excess Thermal Load (million kcal/day)

Q_e = Daily effluent flow (MGD)

ΔT = Daily maximum effluent temperature (°C) minus ambient criterion (20°C)

f. If the permittee selects Excess Thermal Load Limit (ETLL) Option B from Table A1, then the permittee must calculate the ETLL (million kcal/day) each day the permittee uses this option. The permittee must use the equation and procedure noted in Table A1.

g. The 7-day Rolling Average for any day is the average of the daily values for that day and the preceding six (6) days. The maximum 7-day Rolling Average is the maximum value from this series of 7-day averages.

h. If temperature monitoring is performed at intervals smaller than hourly (for example, 15 or 30 minutes intervals) the permittee may summarize those values for reporting on the electronic attachment by first calculating the average temperature value for each hour using all data collected during that hour; the daily maximum temperature would then be the highest hourly average temperature during the calendar day. The 7-day average of daily maximums may also be calculated using a daily maximum temperature that is the highest of hourly averages.

i. For Dissolved Oxygen, the permittee must collect and analyze at least four discrete grab samples over the operating day with samples collected no less than one hour apart. The analytical results for all samples in a day must be averaged for reporting purposes.

c. The permittee must monitor the Willamette River upstream and outside of the influence of Outfall 001 and report the results in accordance with Table B1 and the table below. The permittee must collect samples such that the effluent does not impact the samples (e.g., upstream for riverine discharges).

Table B4: Receiving Stream Monitoring (Willamette River)

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type/Action Required	Report Statistic (See note a.)
Hardness, total (as $CaCO_3$) (00900)	mg/L	Year-round	Quarterly	Grab	Quarterly Maximum
Lead, total (01051)	µg/L	Year-round	Quarterly	Grab	Quarterly Maximum
Lead, dissolved (01049)	µg/L	Year-round	Quarterly	Grab	Quarterly Maximum
Cyanide, free (00717) (See note b.)	µg/L	Year-round	Quarterly	Grab	Quarterly Maximum
Cyanide, total (00720)	µg/L	Year-round	Quarterly	Grab	Quarterly Maximum
Zinc, total (01092)	µg/L	Year-round	Quarterly	Grab	Quarterly Maximum
Zinc, dissolved (01090)	µg/L	Year-round	Quarterly	Grab	Quarterly Maximum
2,4,6-trichlorophenol (34621)	µg/L	Year-round	Quarterly	Grab	Quarterly Maximum

Notes:

a. Submit all receiving stream data as an attachment with in a DEQ-approved format as a spreadsheet via electronic reporting unless otherwise directed by DEQ.

b. There are multiple approved methods for testing for free cyanide. For more information, refer to DEQ's analytical memo on the subject of cyanide monitoring at https://www.oregon.gov/deq/FilterDocs/sToxicscyanide.pdf.

4. Copper Biotic Ligand Model and Aluminum Parameters

The permittee must monitor the Willamette River upstream of Outfall 001 and the effluent for Outfall 001 for copper biotic ligand model and aluminum parameters per Table B5 below. Samples must be collected monthly for a period of 10 months beginning in January of [the third year of the permit cycle]. Effluent and ambient monitoring must be conducted concurrently.

Upstream/Ambient samples must be taken in a location outside of the influence of the effluent using appropriate sampling techniques and procedures. It is the responsibility of the permittee to ensure safe and practical sampling techniques and procedures are used. DEQ recommends that these procedures be included in a sample and analysis plan that can be reviewed by DEQ when necessary.

Table B5: Copper Biotic Ligand Model and Aluminum Sampling Requirements

Parameter (See note b.)	**CAS** (See note d.)	**Units**	**Sampling Frequency** (See note c.)	**Sampling Location** (See note a.)
Copper, total and dissolved	7440508	µg/L	1/month	Upstream and Effluent
Aluminum, total	7429905	µg/L	1/month	Upstream and Effluent
Hardness (as $CaCO_3$)	–	mg/L	1/month	Upstream and Effluent
Dissolved organic carbon	–	mg/L	1/month	Upstream and Effluent
pH	–	S.U.	1/month	Upstream and Effluent
Temperature	–	°C	1/month	Upstream and Effluent
Calcium, dissolved	7440702	mg/L	1/month	Upstream and Effluent
Magnesium, dissolved	7439954	mg/L	1/month	Upstream and Effluent
Sodium, dissolved	7440235	mg/L	1/month	Upstream and Effluent
Potassium, dissolved	7440097	mg/L	1/month	Upstream and Effluent
Sulfate, dissolved	14808798	mg/L	1/month	Upstream and Effluent
Chloride, dissolved	16887006	mg/L	1/month	Upstream and Effluent
Alkalinity, dissolved	–	mg/L	1/month	Upstream and Effluent

Notes:

a. Samples must be collected upstream (outside the influence of the effluent) and from the effluent on the same day.

b. All effluent samples must be 24-hr composite samples except grab samples must be collected for pH, alkalinity, and temperature. All receiving stream samples must be grab samples.

c. Samples must be collected monthly for a period of 10 months beginning in [January YYYY]

d. Chemical Abstract Service

5. Effluent Toxics Characterization Monitoring (Tier 1 Monitoring)

The permittee must collect and analyze effluent samples for the parameters listed in the tables below. The permittee must collect effluent samples after the chlorine contact chamber and prior to discharge.

Samples must be 24-hour composites, except as noted in the tables below for total cyanide, free cyanide, and volatile organic compounds. Sample results must be reported in µg/L unless otherwise specified and submitted to DEQ using an approved electronic format.

Table B6: Metals, Cyanide, and Hardness

Pollutant (See note a.)	**CAS** (See note b.)	**Pollutant** (See note a.)	**CAS** (See note b.)
Antimony, total	7440360	Mercury, total	7439976
Arsenic, total	7440382	Nickel, total and dissolved	7440020
Arsenic, total inorganic	7440382	Selenium, total and dissolved	7782492
Arsenic, total inorganic dissolved	7440382	Silver, total and dissolved	7440224
Beryllium, total	7440417	Thallium, total	7440280
Cadmium, total and dissolved	7440439	Zinc, total and dissolved	7440666
Chromium, total and dissolved	7440473	Cyanide, free (See note c and d.)	57125
Chromium III, total and dissolved (See note e.)	16065831	Cyanide, total (See note d.)	57125
Chromium VI, dissolved	18540299	Hardness (total as CaCO3)	
Lead, total and dissolved	7439921	Iron, total	7439896

Notes:

a. The term "total" used in reference to metals is intended to cover all EPA-accepted standard digestion methods and is considered to be equivalent to the term "total recoverable."

b. Chemical Abstract Service

c. There are multiple approved methods for testing for free cyanide. For more information, refer to DEQ's analytical memo on the subject of cyanide monitoring at https://www.oregon.gov/deq/FilterDocs/sToxicscyanide.pdf

d. Cyanide (free and total) must be collected as a grab sample according to 40 CFR 122. Twenty-four-hour composite samples are not required for this analyte. If the result for Total Cyanide exceeds 5.0 µg/L, the permittee must monitor for Free Cyanide as part of the Tier 2 monitoring.

e. There is no analytical method to test for Chromium III, results are obtained by subtracting dissolved Chromium VI from Chromium.

Table B7: Volatile Organic Compounds

Pollutant (See note a.)	CAS	Pollutant (See note a.)	CAS
Acrolein (See note k.)	107028	1,2-trans-dichloroethylene (See note d.)	156605
Acrylonitrile (See note k.)	107131	1,1-dichloroethylene (See note e.)	75354
Benzene	71432	1,2-dichloropropane	78875
Bromoform	75252	1,3-dichloropropylene (See note f.)	542756
Carbon tetrachloride	56235	Ethylbenzene	100414
Chlorobenzene	108907	Methyl Bromide (See note g.)	74839
Chlorodibromomethane (See note b.)	124481	Methyl Chloride (See note h.)	74873
Chloroethane	75003	Methylene chloride	75092
2-Chloroethylvinyl ether (See note k.)	110758	1,1,2,2-tetrachloroethane	79345
Chloroform	67663	Tetrachloroethylene (See note i.)	127184
Dichlorobromomethane (See note c.)	75274	Toluene	108883
1,2-Dichlorobenzene (o)	95501	1,1,1-trichloroethane	71556
1,3-Dichlorobenzene (m)	541731	1,1,2-trichloroethane	79005
1,4-Dichlorobenzene (p)	106467	Trichloroethylene (See note j.)	79016
1,1-dichloroethane	75343	Vinyl chloride	75014
1,2-dichloroethane	107062		

Notes:

a. VOC's must be collected as a grab sample according to 40 CFR 122. Twenty-four-hour composite samples are not required for this analyte.
b. Chlorodibromomethane is identified as Dibromochloromethane in 40 CFR 136.3, Table 1C.
c. Dichlorobromomethane is identified as Bromodichloromethane in 40 CFR 136.3, Table 1C.
d. 1,2-Trans-dichloroethylene is identified as Trans-1,2-dichloroethene in 40 CFR 136.3, Table 1C.
e. 1,1-Dichloroethylene is identified as 1,1-Dichloroethene in 40 CFR 136.3, Table 1C.
f. 1,3-Dichloropropylene consists of both cis-1,3-Dichloropropene and Trans-1,3-dichloropropene. Both must be reported individually.
g. Methyl bromide is identified as Bromomethane in 40 CFR 136.3, Table 1C.
h. Methyl chloride is identified as Chloromethane in 40 CFR 136.3, Table 1C.
i. Tetrachloroethylene is identified as Tetrachloroethene in 40 CFR 136.3, Table 1C.
j. Trichloroethylene is identified as Trichloroethene in 40 CFR 136.3, Table 1C.
k. Acrolein, Acrylonitrile, and 2-Chloroethylvinyl ether must be tested from an unacidified sample.

Table B8: Acid-Extractable Compounds

Pollutant	CAS	Pollutant	CAS
p-chloro-m-cresol (See note a.)	59507	2-nitrophenol	88755
2-chlorophenol	95578	4-nitrophenol	100027
2,4-dichlorophenol	120832	Pentachlorophenol	87865
2,4-dimethylphenol	105679	Phenol	108952
4,6-dinitro-o-cresol (See note b.)	534521	2,4,5-trichlorophenol (See note c.)	95954
2,4-dinitrophenol	51285	2,4,6-trichlorophenol	88062

Notes:

a. p-chloro-m-cresol is identified as 4-Chloro-3-methylphenol in 40 CFR 136.3, Table 1C.

b. 4,6-dinitro-o-cresol is identified as 2-Methyl-4,6-dinitrophenol in 40 CFR 136.3, Table 1C.

c. To monitor for 2,4,5-trichlorophenol, use EPA Method 625.1.

Table B9: Base-Neutral Compounds

Pollutant	CAS	Pollutant	CAS
Acenaphthene	83329	Dimethyl phthalate	131113
Acenaphthylene	208968	2,4-dinitrotoluene	121142
Anthracene	120127	2,6-dinitrotoluene	606202
Benzidine	92875	1,2-diphenylhydrazine (See note c.)	122667
Benzo(a)anthracene	56553	Fluoranthene	206440
Benzo(a)pyrene	50328	Fluorene	86737
3,4-benzofluoranthene (See note a.)	205992	Hexachlorobenzene	118741
Benzo(ghi)perylene	191242	Hexachlorobutadiene	87683
Benzo(k)fluoranthene	207089	Hexachlorocyclopentadiene	77474
Bis(2-chloroethoxy)methane	111911	Hexachloroethane	67721
Bis(2-chloroethyl)ether	111444	Indeno(1,2,3-cd)pyrene	193395
Bis(2-chloroisopropyl)ether (See note b.)	108601	Isophorone	78591
Bis (2-ethylhexyl)phthalate	117817	Napthalene	91203
4-bromophenyl phenyl ether	101553	Nitrobenzene	98953
Butylbenzyl phthalate	85687	N-nitrosodi-n-propylamine	621647
2-chloronaphthalene	91587	N-nitrosodimethylamine	62759
4-chlorophenyl phenyl ether	7005723	N-nitrosodiphenylamine	86306
Chrysene	218019	Pentachlorobenzene (See note d.)	608935
Di-n-butyl phthalate	84742	Phenanthrene	85018
Di-n-octyl phthalate	117840	Pyrene	129000
Dibenzo(a,h)anthracene	53703	1,2,4-trichlorobenzene	120821
3,3-Dichlorobenzidine	91941	Tetrachlorobenzene,1,2,4,5 (See note d.)	95943
Diethyl phthalate	84662		

Notes:

a. 3,4-benzofluoranthene is listed as Benzo(b)fluoranthene in 40 CFR 136.

b. Also known as Chloroisopropyl Ether bis 2, and 2,2'-oxybis(2-chloro-propane) Bis(2-chloroisopropyl)ether is listed as 2,2'-oxybis(1-chloropropane) in 40 CFR 136.

c. 1,2-diphenylhydrazine is difficult to analyze given its rapid decomposition rate in water. Azobenzene (a decomposition product of 1,2-diphenylhydrazine), must be analyzed as an estimate of this chemical.

d. To analyze for Pentachlorobenzene and Tetrachlorobenzene 1,2,4,5, use EPA 625.1.

6. Additional Receiving Stream and Effluent Characterization Monitoring (Tier 2 Monitoring)

If additional ambient or effluent monitoring is needed, DEQ will notify the permittee through a request for supplemental information/data. The need for additional monitoring will be determined after DEQ's evaluation of the effluent toxics characterization (Tier 1 monitoring in Tables B6-9) results.

7. Whole Effluent Toxicity (WET) Requirements

The permittee must monitor final effluent for whole effluent toxicity as described in the table below using the testing protocols specified in Schedule D, Whole Effluent Toxicity Testing for Freshwater. Samples for Outfall 001 must be collected at the location specified below.

Table B10: WET Test Monitoring

Parameter	Sample Type/Location	Minimum Frequency	Report
Acute toxicity	For acute toxicity: 24-hr composite, after the chlorine contact chamber and prior to discharge.	See table B1	Report must include test results and backup information such as bench sheets sufficient to demonstrate compliance with permit requirements. Report must include a statement certifying that the results do or do not show toxicity.
Chronic toxicity	For chronic toxicity: 24-hr composite, after the chlorine contact chamber and prior to discharge		

SCHEDULE C: COMPLIANCE SCHEDULE

1. Compliance Schedule to Meet Final Effluent Limits

The permittee must comply with the following schedule:

Table C1: Compliance Schedule

Compliance Date:	Requirement:
By XX/XX/XXXX (12/1/2024) Within 8 months of permit effective date	The permittee must submit to DEQ an optimization study outlining feasible operational changes that can be made to the current treatment process at Tryon Creek WWTP to maximize reductions of total residual chlorine.
By XX/XX/XXXX (4/1/2025) Within 12 months of permit effective date	The permittee must submit to DEQ a written progress report outlining the status of the new Lake Oswego wastewater treatment facility as well as progress made towards achieving final effluent limits. The permittee must also submit a design memorandum for dechlorination in order to achieve final effluent limits for Total Residual Chlorine.
By XX/XX/XXXX (6/1/2025) Within 14 months of permit effective date	The permittee must begin implementation of the planned changes outlined in the optimization study.
By XX/XX/XXXX (4/1/2026) Within 2 years of permit effective date	The permittee must submit to DEQ a written progress report outlining the status of the new Lake Oswego wastewater treatment facility as well as progress made towards achieving final effluent limitations. The permittee must include in the report a draft plan and timeline for achieving final effluent limits based on the results of the implementations of the optimization study, design memorandum, and status of Lake Oswego wastewater treatment facility. Permittee must revise draft plan and timeline in accordance with DEQ comments within 60 days of receiving DEQ comments.
By XX/XX/XXXX (4/1/2027) Within 3 years of permit effective date	The permittee must begin implementation of the final plan for achieving final effluent limits.
By XX/XX/XXXX (4/1/2028) Within 4 years of permit effective date	The permittee must achieve compliance with the final effluent limits for Total Residual Chlorine in Schedule A of this permit.

2. Responsibility to Meet Compliance Dates

No later than 14 days following each compliance date listed in the table above, the permittee must notify DEQ in writing of its compliance or noncompliance with the requirements. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and a discussion of the likelihood of meeting the next scheduled requirement(s).

SCHEDULE D: SPECIAL CONDITIONS

1. Inflow and Infiltration

The permittee must submit to DEQ an annual inflow and infiltration report on a DEQ-approved form as directed in Table B1. The report must include the following:

a. An assessment of the facility's I/I issues based on a comparison of summer and winter flows to the plant.

b. Details of activities performed in the previous year to identify and reduce inflow and infiltration.

c. Details of activities planned for the following year to identify and reduce inflow and infiltration.

d. A summary of sanitary sewer overflows that occurred during the previous year. This should include the following: date of the SSO, location, estimated volume, cause, follow-up actions and if performed, the results of receiving stream monitoring.

2. Emergency Response and Public Notification Plan

The permittee must develop an Emergency Response and Public Notification Plan ("plan"), or ensure the facility's existing plan is current and accurate, per Schedule F, Section B, and Condition 8 within 6 months of permit effective date. The permittee must update the plan annually to ensure all information contained in the plan, including telephone and email contact information for applicable public agencies, is current and accurate. An updated copy of the plan must be kept on file at the facility for DEQ review. The latest plan revision date must be listed on the plan cover along with the reviewer's initials or signature.

3. Exempt Wastewater Reuse at the Treatment System

Recycled water used for landscape irrigation within the property boundary or in-plant processes at the wastewater treatment system is exempt from the requirements of OAR 340-055 if all of the following conditions are met:

a. The recycled water is an oxidized and disinfected wastewater.

b. The recycled water is used at the wastewater treatment system site where it is generated or at an auxiliary wastewater or sludge treatment facility that is subject to the same NPDES or WPCF permit as the wastewater treatment system.

c. Spray and/or drift from the use does not migrate off the site.

d. Public access to the site is restricted.

4. Wastewater Solids Annual Report

The permittee must submit a Wastewater Solids Annual Report by February 19 each year documenting removal of wastewater solids from the facility during the previous calendar year. The permittee must use DEQ-approved wastewater solids annual report form. This report must include the volume of material removed and the name of the permitted facility that received the solids.

5. Wastewater Solids Transfers

a. *Within state.* The permittee may transfer wastewater solids including Class A and Class B biosolids, to another facility permitted to process or dispose of wastewater solids, including but not limited to: another wastewater treatment facility, landfill, or incinerator. The permittee must satisfy the requirements of the receiving facility. The permittee must report the name of the receiving facility and the quantity of material transferred in the wastewater solids or biosolids annual report identified in Schedule B.

b. *Out of state.* If wastewater solids, including Class A and Class B biosolids, are transferred out of state for use or disposal, the permittee must obtain written authorization from DEQ, meet Oregon requirements for the use or disposal of wastewater solids, notify in writing the receiving state of the proposed use or disposal of wastewater solids, and satisfy the requirements of the receiving state.

6. Whole Effluent Toxicity Testing for Freshwater

a. The permittee must conduct whole effluent toxicity (WET) tests as specified here and in Schedule B of this permit.

b. Acute Toxicity Testing - Organisms and Protocols

i. The permittee must conduct 48-hour static renewal tests with *Ceriodaphnia dubia* (water flea) and 96-hour static renewal tests with *Pimephales promelas* (fathead minnow).

ii. All test methods and procedures must be in accordance with *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002*, or the most recent version of this publication if such edition is available. If the permittee wants to deviate from the bioassay procedures outlined in this method, the permittee must submit a written request to DEQ for review and approval prior to use.

iii. Treatments to the final effluent samples (for example, dechlorination, ammonia removal), except those included as part of the methodology, may not be performed by the laboratory unless approved by DEQ in writing prior to analysis.

iv. WET acute testing must be conducted using a dilution series based upon the effluent percentage at the ZID (EPZID) in the following manner: 100%; 52%; 4.6%; 2.3%; and 1.1% and a control (0% effluent).

v. An acute WET test shows toxicity if there is a statistically significant difference in survival between the control and 4.6% effluent reported as the NOEC < 4.6% effluent.

c. Chronic Toxicity Testing - Organisms and Protocols

i. The permittee must conduct tests with *Ceriodaphnia dubia* (water flea) for reproduction and survival test endpoint, *Pimephales promelas* (fathead minnow) for growth and survival test endpoint, and *Raphidocelis subcapitata* (green alga formerly known as *Selanastrum capricornutum*) for growth test endpoint.

ii. All test methods and procedures must be in accordance with *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002*, or the most recent version of this publication if such edition is available. If the permittee wants to deviate from the bioassay procedures outlined in the applicable method, the permittee must submit a written request to DEQ for review and approval prior to use.

iii. Treatments to the final effluent samples (for example, dechlorination, ammonia removal), except those included as part of the methodology, may not be performed by the laboratory unless approved by DEQ in writing prior to analysis.

iv. WET chronic testing must be conducted using a dilution series based upon the effluent percentage at the RMZ (EPRMZ) in the following manner: 100% effluent; 50% 0.43%; 0.21%; and 0.11% and a control (0% effluent).

v. A chronic WET test shows toxicity if the IC25 (25% inhibition concentration) occurs at dilutions equal to or less than the dilution that is known to occur at the edge of the mixing zone, that is, IC25 ≤ 0.43%.

d. Dual End-Point Tests

i. WET tests may be dual end-point tests in which both acute and chronic end-points can be determined from the results of a single chronic test. The acute end-point will be based on 48-hours for the *Ceriodaphnia dubia* (water flea) and 96-hours for the *Pimephales promelas* (fathead minnow).

ii. All test methods and procedures must be in accordance with *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002*, or the most recent version of this publication if such edition is available. If the permittee wants to deviate from the bioassay procedures outlined in this method, the permittee must submit a written request to DEQ for review and approval prior to use.

iii. Tests run as dual end-point tests must be conducted on a control (0%) and the following dilution series: 0.21%, 0.43%, 2.3%, 4.6%, and 100% effluent.

iv. Toxicity determinations for dual end-point tests must correspond to the acute and chronic tests described in conditions 8.b.v and 8.c.v above.

e. Sampling Requirements

At the time of WET sampling, the permittee must collect and analyze effluent samples for those parameters listed in Tables B6-B9.

f. Evaluation of Causes and Exceedances

i. If any test exhibits toxicity as described in conditions 8.b.v. and 8.c.v. above, the permittee must conduct another toxicity test using the same species and DEQ-approved methodology within two weeks unless an extension is granted by DEQ in writing.

ii. If two consecutive WET test results indicate acute or chronic toxicity as described in conditions 8.b.v. and 8.c.v. above, the permittee must immediately notify DEQ of the results. DEQ will work with the permittee to determine the appropriate course of action to evaluate and address the toxicity.

g. Quality Assurance and Reporting

i. Quality assurance criteria, statistical analyses, and data reporting for the WET tests must be in accordance with the EPA documents stated in this condition.

ii. For each test, the permittee must provide a bioassay laboratory report according to the EPA method documents referenced in this Schedule. The report must include all QA/QC documentation, statistical analysis for each test performed, standard reference toxicant test (SRT) conducted on each species required for the toxicity tests, and completed Chain of Custody forms for the samples including time of sample collection and receipt. The permittee must submit reports to DEQ within 60 days of test completion.

iii. The report must include all endpoints measured in the test: NOEC (No Observed Effects Concentration), LOEC (Lowest Observed Effects Concentration), and IC_{25} (chronic effect 25% inhibition concentration).

iv. The permittee must make available to DEQ upon request the written standard operating procedures they, or the laboratory performing the WET tests, use for all toxicity tests required by DEQ.

h. Reopener

DEQ may reopen and modify this permit to include new limits, monitoring requirements, and/or conditions as determined by DEQ to be appropriate, and in accordance with procedures outlined in OAR Chapter 340, Division 45 if:

i. WET testing data indicate acute and/or chronic toxicity.

ii. The facility undergoes any process changes.

iii. Discharge monitoring data indicate a change in the reasonable potential to cause or contribute to an exceedance of a water quality standard.

i. Circumstances not addressed in this section, or that require deviation from the requirements of this section, must be approved in writing by DEQ before changes are implemented.

7. Operator Certification

a. Definitions

i. "Supervise" means to have full and active responsibility for the daily on site technical operation of a wastewater treatment system or wastewater collection system.

ii. "Supervisor" or "designated operator", means the operator delegated authority by the permittee for establishing and executing the specific practice and procedures for operating the wastewater treatment system or wastewater collection system in accordance with the policies of the owner of the system and any permit requirements.

iii. "Shift Supervisor" means the operator delegated authority by the permittee for executing the specific practice and procedures for operating the wastewater treatment system or wastewater collection system when the system is operated on more than one daily shift.

iv. "System" includes both the collection system and the treatment systems.

b. The permittee must comply with OAR Chapter 340, Division 49, "Regulations Pertaining to Certification of Wastewater System Operator Personnel" and designate a supervisor whose certification corresponds with the classification of the collection and/or treatment system as specified in DEQ Supervisory Wastewater Operator Status Report. DEQ may revise the permittee's classification in writing at any time to reflect changes in the collection or treatment system. This reclassification is not considered a permit modification and may be made after the permit expiration date provided the permit has been administratively extended by DEQ. If a facility is re-classified, a certified letter will be mailed to the system owner from DEQ Operator Certification Program. Current system classifications are publicized on DEQ Supervisory Wastewater Operator Status Report found on DEQ Wastewater Operator Certification Homepage.

c. The permittee must have its system supervised full-time by one or more operators who hold a valid certificate for the type of wastewater treatment or wastewater collection system, and at a grade equal to or greater than the wastewater system's classification.

When compliance with this section is not possible or practicable because the system supervisor is not available or the position is vacated unexpectedly, and another certified operator is not qualified to assume supervisory responsibility, the Director may grant a time extension for compliance with the requirements in response to a written request from the system owner. The Director will not grant an extension longer than 120 days unless the system owner documents the existence of extraordinary circumstances.

d. The permittee's wastewater system may be without the designated supervisor for up to 30 consecutive days if another person supervises the system, who is certified at no more than one grade lower than the classification of the wastewater system. The permittee must delegate authority to this operator to supervise the operation of the system.

e. If the wastewater system has more than one daily shift, the permittee must have another properly certified operator available to supervise operation of the system. Each shift supervisor must be certified at no more than one grade lower than the system classification.

f. The permittee is not required to have a supervisor on site at all times; however, the supervisor must be available to the permittee and operator at all times.

g. The permittee must notify DEQ in writing of the name of the system supervisor by completing and submitting the Supervisory Wastewater System Operator Designation Form. The most recent version of this form may be found on DEQ Wastewater Operator Certification homepage *NOTE: This form is different from the Delegated Authority form. The permittee may replace or re-designate the system supervisor with another properly certified operator at any time and must notify DEQ in writing within 30 days of replacement or re-designation of the operator in charge. As of this writing, the notice of replacement or re-designation must be sent to Water Quality Division, Operator Certification Program, 700 NE Multnomah St, Suite 600, Portland, OR 97232-4100. This address may be updated in writing by DEQ during the term of this permit.

8. Outfall Inspection

The permittee must inspect Outfall 001 including the submerged portion of the outfall line and diffuser to document its integrity and to determine whether it is functioning as designed. The inspection must determine whether diffuser ports are intact, clear, and fully functional. The inspection must verify the latitude and longitude of the diffuser. The permittee must submit a written report to DEQ regarding the results of the outfall inspection by the date in Table B1. The report must include a description of the outfall as originally constructed, the condition of the current outfall and identify any repairs needed to return the outfall to satisfactory condition.

SCHEDULE E: PRETREATMENT ACTIVITIES

A pretreatment program is not part of this permit.

SCHEDULE F: NPDES GENERAL CONDITIONS

October 1, 2015 Version

SECTION A. STANDARD CONDITIONS

A1. Duty to Comply with Permit

The permittee must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of Oregon Revised Statutes (ORS) 468B.025 and the federal Clean Water Act and is grounds for an enforcement action. Failure to comply is also grounds for DEQ to terminate, modify and reissue, revoke, or deny renewal of a permit.

A2. Penalties for Water Pollution and Permit Condition Violations

The permit is enforceable by DEQ or EPA, and in some circumstances also by third-parties under the citizen suit provisions of 33 USC § 1365. DEQ enforcement is generally based on provisions of state statutes and Environmental Quality Commission (EQC) rules, and EPA enforcement is generally based on provisions of federal statutes and EPA regulations.

ORS 468.140 allows DEQ to impose civil penalties up to $25,000 per day for violation of a term, condition, or requirement of a permit.

Under ORS 468.943, unlawful water pollution in the second degree, is a Class A misdemeanor and is punishable by a fine of up to $25,000, imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense.

Under ORS 468.946, unlawful water pollution in the first degree is a Class B felony and is punishable by a fine of up to $250,000, imprisonment for not more than 10 years, or both.

The Clean Water Act provides that any person who violates permit condition, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation.

The Clean Water Act provides that any person who negligently violates any condition, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both.

In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both.

Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both.

In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

Any person who knowingly violates section any permit condition, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both.

In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both.

An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

Any person may be assessed an administrative penalty by the Administrator for violating any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act.

Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000.

Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

A3. Duty to Mitigate

The permittee must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit. In addition, upon request of DEQ, the permittee must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

A4. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit.

DEQ may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

A5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

a. Violation of any term, condition, or requirement of this permit, a rule, or a statute.
b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts.
c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
d. The permittee is identified as a Designated Management Agency or allocated a wasteload under a total maximum daily load (TMDL).
e. New information or regulations.
f. Modification of compliance schedules.
g. Requirements of permit reopener conditions
h. Correction of technical mistakes made in determining permit conditions.
i. Determination that the permitted activity endangers human health or the environment.
j. Other causes as specified in 40 CFR §§ 122.62, 122.64, and 124.5.
k. For communities with combined sewer overflows (CSOs):
    (1) To comply with any state or federal law regulation for CSOs that is adopted or promulgated subsequent to the effective date of this permit.
    (2) If new information that was not available at the time of permit issuance indicates that CSO controls imposed under this permit have failed to ensure attainment of water quality standards, including protection of designated uses.

(3) Resulting from implementation of the permittee's long-term control plan and/or permit conditions related to CSOs.

The filing of a request by the permittee for a permit modification, revocation or reissuance, termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

A6. Toxic Pollutants
The permittee must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rule (OAR) 340-041-0033 and section 307(a) of the federal Clean Water Act for toxic pollutants, and with standards for sewage sludge use or disposal established under section 405(d) of the federal Clean Water Act, within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

A7. Property Rights and Other Legal Requirements
The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, or authorize any injury to persons or property or invasion of any other private rights, or any infringement of federal, tribal, state, or local laws or regulations.

A8. Permit References
Except for effluent standards or prohibitions established under section 307(a) of the federal Clean Water Act and OAR 340-041-0033 for toxic pollutants, and standards for sewage sludge use or disposal established under section 405(d) of the federal Clean Water Act, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

A9. Permit Fees
The permittee must pay the fees required by OAR.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

B1. Proper Operation and Maintenance
The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B2. Need to Halt or Reduce Activity Not a Defense
For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permittee must, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B3. Bypass of Treatment Facilities
a. Definitions
(1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs b and c of this section.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Prohibition of bypass.
   (1) Bypass is prohibited and DEQ may take enforcement action against a permittee for bypass unless:
      i. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventative maintenance; and
      iii. The permittee submitted notices and requests as required under General Condition B3.c.
   (2) DEQ may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, if DEQ determines that it will meet the three conditions listed above in General Condition B3.b.(1).

c. Notice and request for bypass.
   (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, a written notice must be submitted to DEQ at least ten days before the date of the bypass.
   (2) Unanticipated bypass. The permittee must submit notice of an unanticipated bypass as required in General Condition D5.

B4. Upset

a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of General Condition B4.c are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   (1) An upset occurred and that the permittee can identify the causes(s) of the upset;
   (2) The permitted facility was at the time being properly operated;
   (3) The permittee submitted notice of the upset as required in General Condition D5, hereof (24-hour notice); and
   (4) The permittee complied with any remedial measures required under General Condition A3 hereof.

d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

B5. Treatment of Single Operational Upset

For purposes of this permit, a single operational upset that leads to simultaneous violations of more than one pollutant parameter will be treated as a single violation. A single operational upset is an exceptional incident that causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one federal Clean Water Act effluent discharge pollutant parameter. A single operational upset does not include federal Clean Water Act violations involving discharge without a NPDES

permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational upset is a violation.

B6. Overflows from Wastewater Conveyance Systems and Associated Pump Stations

a. Definition. "Overflow" means any spill, release or diversion of sewage including:
   (1) An overflow that results in a discharge to waters of the United States; and
   (2) An overflow of wastewater, including a wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building lateral), even if that overflow does not reach waters of the United States.

b. Reporting required. All overflows must be reported orally to DEQ within 24 hours from the time the permittee becomes aware of the overflow. Reporting procedures are described in more detail in General Condition D5.

B7. Public Notification of Effluent Violation or Overflow

If effluent limitations specified in this permit are exceeded or an overflow occurs that threatens public health, the permittee must take such steps as are necessary to alert the public, health agencies and other affected entities (for example, public water systems) about the extent and nature of the discharge in accordance with the notification procedures developed under General Condition B8. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

B8. Emergency Response and Public Notification Plan

The permittee must develop and implement an emergency response and public notification plan that identifies measures to protect public health from overflows, bypasses, or upsets that may endanger public health. At a minimum the plan must include mechanisms to:

a. Ensure that the permittee is aware (to the greatest extent possible) of such events;
b. Ensure notification of appropriate personnel and ensure that they are immediately dispatched for investigation and response;
c. Ensure immediate notification to the public, health agencies, and other affected public entities (including public water systems). The overflow response plan must identify the public health and other officials who will receive immediate notification;
d. Ensure that appropriate personnel are aware of and follow the plan and are appropriately trained;
e. Provide emergency operations; and
f. Ensure that DEQ is notified of the public notification steps taken.

B9. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

C1. Representative Sampling

Sampling and measurements taken as required herein must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and must be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points must not be changed without notification to and the approval of DEQ. Samples must be collected in accordance with requirements in 40 CFR part 122.21 and 40 CFR part 403 Appendix E.

C2. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.

C3. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR part 136 or, in the case of sludge (biosolids) use and disposal, approved under 40 CFR part 503 unless other test procedures have been specified in this permit.

For monitoring of recycled water with no discharge to waters of the state, monitoring must be conducted according to test procedures approved under 40 CFR part 136 or as specified in the most recent edition of Standard Methods for the Examination of Water and Wastewater unless other test procedures have been specified in this permit or approved in writing by DEQ.

C4. Penalties for Tampering

The federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than $10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both.

C5. Reporting of Monitoring Results

Monitoring results must be summarized each month on a discharge monitoring report form approved by DEQ. The reports must be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

C6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR part 136 or, in the case of sludge (biosolids) use and disposal, approved under 40 CFR part 503, or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the discharge monitoring report. Such increased frequency must also be indicated. For a pollutant parameter that may be sampled more than once per day (for example, total residual chlorine), only the average daily value must be recorded unless otherwise specified in this permit.

C7. Averaging of Measurements

Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean, except for bacteria which must be averaged as specified in this permit.

C8. Retention of Records

Records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities must be retained for a period of at least 5 years (or longer as required by 40 CFR part 503). Records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit must be retained for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of DEQ at any time.

C9. Records Contents

Records of monitoring information must include:

a. The date, exact place, time, and methods of sampling or measurements;
b. The individual(s) who performed the sampling or measurements;
c. The date(s) analyses were performed;
d. The individual(s) who performed the analyses;
e. The analytical techniques or methods used; and
f. The results of such analyses.

C10. Inspection and Entry

The permittee must allow DEQ or EPA upon the presentation of credentials to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

C11. Confidentiality of Information

Any information relating to this permit that is submitted to or obtained by DEQ is available to the public unless classified as confidential by the Director of DEQ under ORS 468.095. The permittee may request that information be classified as confidential if it is a trade secret as defined by that statute. The name and address of the permittee, permit applications, permits, effluent data, and information required by NPDES application forms under 40 CFR § 122.21 are not classified as confidential [40 CFR § 122.7(b)].

SECTION D. REPORTING REQUIREMENTS

D1. Planned Changes

The permittee must comply with OAR 340-052, "Review of Plans and Specifications" and 40 CFR § 122.41(l)(1). Except where exempted under OAR 340-052, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by DEQ. The permittee must give notice to DEQ as soon as possible of any planned physical alternations or additions to the permitted facility.

D2. Anticipated Noncompliance

The permittee must give advance notice to DEQ of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

D3. Transfers

This permit may be transferred to a new permittee provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and EQC rules. No permit may be transferred to a third party without prior written approval from DEQ. DEQ may require modification, revocation, and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under 40 CFR § 122.61. The permittee must notify DEQ when a transfer of property interest takes place.

D4. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each

schedule date. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

D5. Twenty-Four Hour Reporting

The permittee must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) to the DEQ regional office or Oregon Emergency Response System (1-800-452-0311) as specified below within 24 hours from the time the permittee becomes aware of the circumstances.

a. Overflows.
   (1) Oral Reporting within 24 hours.
      i. For overflows other than basement backups, the following information must be reported to the Oregon Emergency Response System (OERS) at 1-800-452-0311. For basement backups, this information should be reported directly to the DEQ regional office.
         (a) The location of the overflow;
         (b) The receiving water (if there is one);
         (c) An estimate of the volume of the overflow;
         (d) A description of the sewer system component from which the release occurred (for example, manhole, constructed overflow pipe, crack in pipe); and
         (e) The estimated date and time when the overflow began and stopped or will be stopped.
      ii. The following information must be reported to the DEQ regional office within 24 hours, or during normal business hours, whichever is earlier:
         (a) The OERS incident number (if applicable); and
         (b) A brief description of the event.
   (2) Written reporting postmarked within 5 days.
      i. The following information must be provided in writing to the DEQ regional office within 5 days of the time the permittee becomes aware of the overflow:
         (a) The OERS incident number (if applicable);
         (b) The cause or suspected cause of the overflow;
         (c) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
         (d) Steps taken or planned to mitigate the impact(s) of the overflow and a schedule of major milestones for those steps; and
         (e) For storm-related overflows, the rainfall intensity (inches/hour) and duration of the storm associated with the overflow.

      DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

b. Other instances of noncompliance.
   (1) The following instances of noncompliance must be reported:
      i. Any unanticipated bypass that exceeds any effluent limitation in this permit;
      ii. Any upset that exceeds any effluent limitation in this permit;
      iii. Violation of maximum daily discharge limitation for any of the pollutants listed by DEQ in this permit; and
      iv. Any noncompliance that may endanger human health or the environment.
   (2) During normal business hours, the DEQ regional office must be called. Outside of normal business hours, DEQ must be contacted at 1-800-452-0311 (Oregon Emergency Response System).
   (3) A written submission must be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission must contain:
      i. A description of the noncompliance and its cause;
      ii. The period of noncompliance, including exact dates and times;
      iii. The estimated time noncompliance is expected to continue if it has not been corrected;

iv. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
v. Public notification steps taken, pursuant to General Condition B**7.**

(4) DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

D6. Other Noncompliance
The permittee must report all instances of noncompliance not reported under General Condition D4 or D5 at the time monitoring reports are submitted. The reports must contain:
a. A description of the noncompliance and its cause;
b. The period of noncompliance, including exact dates and times;
c. The estimated time noncompliance is expected to continue if it has not been corrected; and
d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

D7. Duty to Provide Information
The permittee must furnish to DEQ within a reasonable time any information that DEQ may request to determine compliance with the permit or to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit. The permittee must also furnish to DEQ, upon request, copies of records required to be kept by this permit.

Other Information: When the permittee becomes aware that it has failed to submit any relevant facts or has submitted incorrect information in a permit application or any report to DEQ, it must promptly submit such facts or information.

D8. Signatory Requirements
All applications, reports or information submitted to DEQ must be signed and certified in accordance with 40 CFR § 122.22.

D9. Falsification of Information
Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed $125,000 per violation and up to 5 years in prison per ORS chapter 161. Additionally, according to 40 CFR § 122.41(k)(2), any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or non-compliance will, upon conviction, be punished by a federal civil penalty not to exceed $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

D10. Changes to Indirect Dischargers
The permittee must provide adequate notice to DEQ of the following:
a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the federal Clean Water Act if it were directly discharging those pollutants and;
b. Any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
c. For the purposes of this paragraph, adequate notice must include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

SECTION E. DEFINITIONS

E1. *BOD* or *BOD_5* means five-day biochemical oxygen demand.

E2. *CBOD* or *$CBOD_5$* means five-day carbonaceous biochemical oxygen demand.
E3. *TSS* means total suspended solids.
E4. *Bacteria* means but is not limited to fecal coliform bacteria, total coliform bacteria, *Escherichia coli* (*E. coli*) bacteria, and *Enterococcus* bacteria.
E5. *FC* means fecal coliform bacteria.
E6. *Total residual chlorine* means combined chlorine forms plus free residual chlorine
E7. *Technology based permit effluent limitations* means technology-based treatment requirements as defined in 40 CFR § 125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR 340-041.
E8. *mg/l* means milligrams per liter.
E9. *µg/l* means microgram per liter.
E10. *kg* means kilograms.
E11. *m^3/d* means cubic meters per day.
E12. *MGD* means million gallons per day.
E13. *Average monthly effluent limitation* as defined at 40 CFR § 122.2 means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
E14. *Average weekly effluent limitation* as defined at 40 CFR § 122.2 means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.
E15. *Daily discharge* as defined at 40 CFR § 122.2 means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge must be calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge must be calculated as the average measurement of the pollutant over the day.
E16. *24-hour composite sample* means a sample formed by collecting and mixing discrete samples taken periodically and based on time or flow.
E17. *Grab sample* means an individual discrete sample collected over a period of time not to exceed 15 minutes.
E18. *Quarter* means January through March, April through June, July through September, or October through December.
E19. *Month* means calendar month.
E20. *Week* means a calendar week of Sunday through Saturday.
E21. *POTW* means a publicly-owned treatment works.

State of Oregon
Department of
Environmental
Quality

National Pollutant Discharge Elimination System
Permit Fact Sheet
Tryon Creek Wastewater Treatment Plant

Permittee	City of Portland Tryon Creek WWTP 195 Foothills Rd. Lake Oswego, OR, 97034
Existing Permit Information	File Number: 70735 Permit Number: 101614 EPA Reference Number: OR0026891 Category: Domestic Class: Major Expiration Date: September 30, 2009
Permittee Contact	Amanda Haney Treatment Plant Permit Compliance 503-823-8555 1120 SW 5th Ave. Rm 613 Portland, OR, 97204
Receiving Water Information	Receiving stream/NHD name: Willamette River NHD Reach Code & % along reach: 17090012006672; 79.35% USGS 12-digit HUC: 170900120104 OWRD Administrative Basin: Willamette ODEQ LLID & River Mile: 1227618456580, RM 20.03 Assessment Unit ID: OR_SR_1709001201_88_104019
Proposed Action	Permit Renewal Application Number: 971987 Date Application Received: March 30, 2009
Permit Writer	Emma Prichard 503-875-7301 Date Prepared: March 6, 2024

NPDES Permit Fact Sheet
Tryon Creek Wastewater Treatment Plant

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NPDES Permit Renewal Fact Sheet
Tryon Creek Wastewater Treatment Plant

1. Introduction

As required by Oregon Administrative Rule 340-045-0035, this fact sheet describes the basis and methodology used in developing the permit. The permit is divided into several sections:

Schedule A – Waste discharge limitations
Schedule B – Minimum monitoring and report requirements
Schedule C – Compliance conditions and schedules
Schedule D – Special conditions
Schedule E – Pretreatment conditions – Not applicable
Schedule F – General conditions

A summary of the major changes to the permit are listed below:

- More stringent total residual chlorine effluent limit and compliance schedule for Total Residual Chlorine
- New Excess Thermal Load limit

2. Facility Description

2.1 Wastewater Facility

The Tryon Creek Wastewater Treatment Plant (WWTP) is operated by the City of Portland's Bureau of Environmental Services and serves approximately 91,000 individuals living in the area of Southwest Portland and City of Lake Oswego. The wastewater treatment facility at this site was originally placed into operation in 1964. The treatment system was largely modified in 1976, including the last expansion of design flows at the facility. Though no facility expansion has occurred since 1976, the facility has had a number of changes in the last several years that did not include any changes in design flow. In 2004, the aeration basins were modified from four complete mix basins with surface aerators to two large plug flow basins with fine bubble diffused aeration to allow for better process control. An aeration basin blower building with upgraded blowers was also constructed as part of this modification. A Facilities Plan was submitted June 2014. The city of Lake Oswego is planning to replace the Tryon Creek WWTP with a new facility at a new location but using the same outfall.

The major treatment process used is activated sludge. The average dry weather design flow (ADWDF) for the plant is 8.3 million gallons per day (MGD). This is the estimated average flow during May 1 to October 31 (expressed as a daily average flow) at which the design engineer expects the treatment facility can still consistently meet all summer effluent limits.

The design dry weather flows are used mostly to estimate how much treatment capacity there is for organic loads and may not represent actual flows at the facility. The actual dry weather flow between 2017 and June 2023 averaged 3.86 MGD, with a max monthly average dry weather flow of 6.21 MGD and a minimum monthly average dry weather flow of 3.14 MGD. Based on this flow, the facility operates at about 57% of the dry weather hydraulic capacity. The average wet weather design flow (AWWDF) is 12.3 MGD.

Finished biosolids are not produced at this plant. Instead, thickened wastewater solids from the primary clarifiers, secondary clarifiers, and the anaerobic digesters are trucked to the Columbia Boulevard Wastewater Treatment Plant in North Portland for further processing and beneficial reuse under the biosolids management plan for that facility. The facility does not accept hauled waste and does not plan to in the upcoming permit cycle. The facility does not have a recycled water application plan as discharge occurs year-round. The facility has one outfall that discharges into the Willamette River at the coordinates in Table 2-1.

Table 2-1: List of Outfalls

Outfall Number	Type of Waste	Lat/Long	Design Flow[1] (mgd)	Existing Flow[2] (mgd)
001	Treated domestic wastewater	45.423081, -122.656392	8.3	3.86

1. Design Flow = design average dry weather flow
2. Existing Flow = existing average monthly dry weather flow

Figure 2-1: Site Map

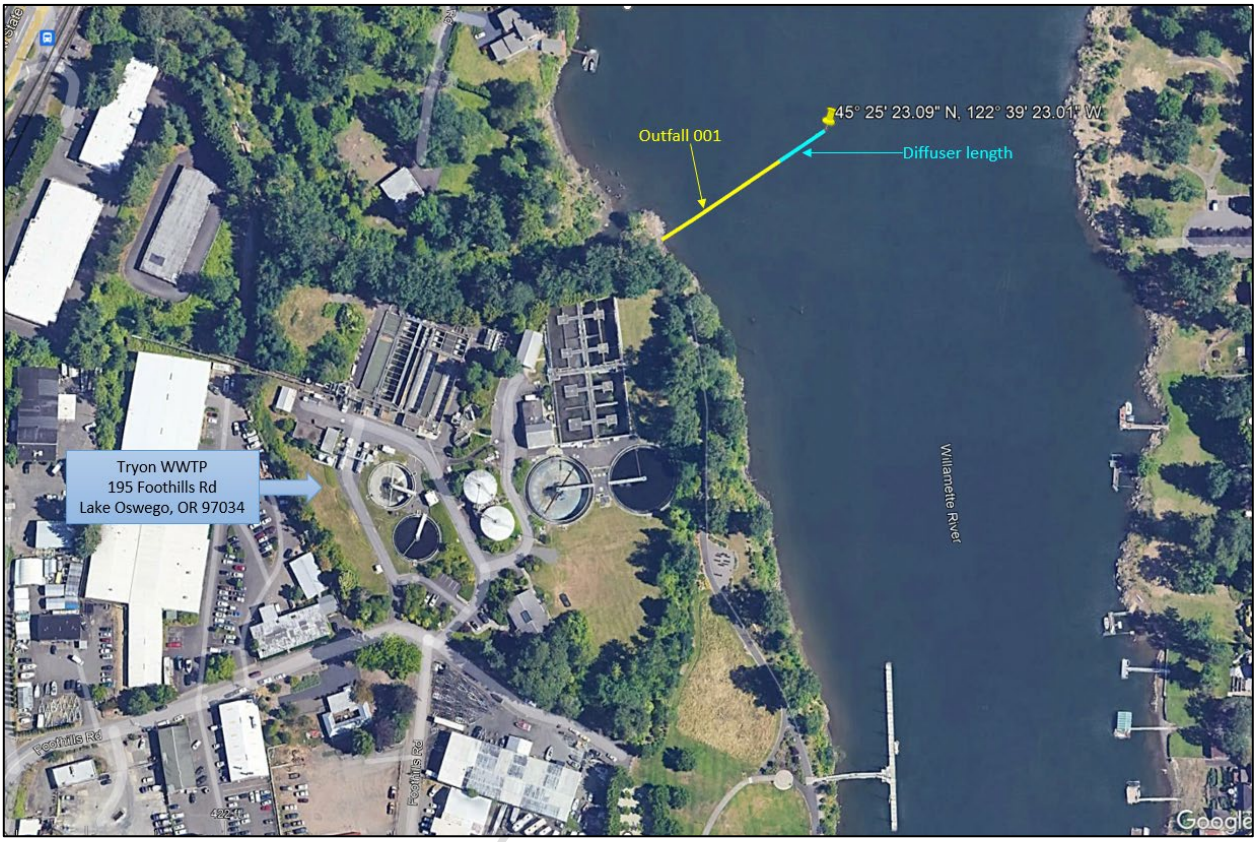
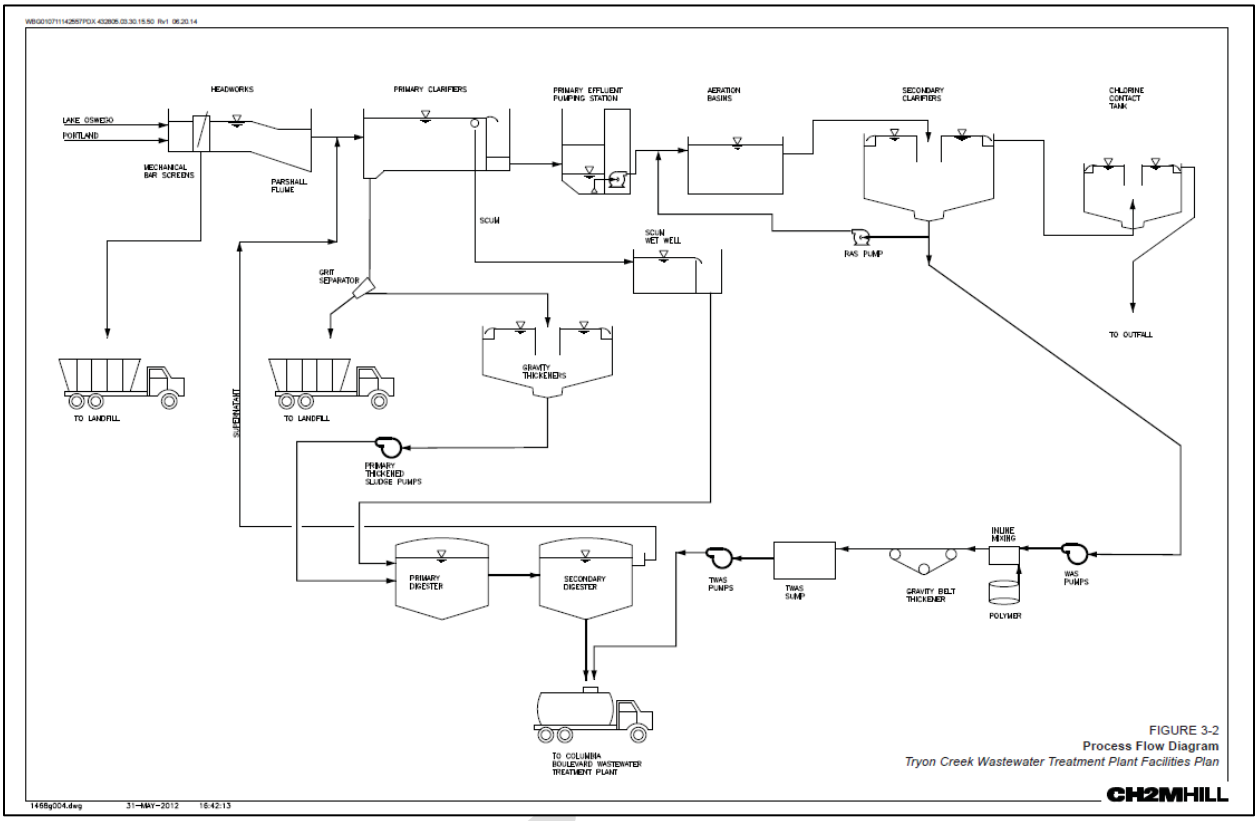


Figure 2-2: Process Diagram



2.2 Stormwater

General NPDES permits for stormwater are not required for wastewater treatment facilities with a design flow of greater than 1 MGD when stormwater is collected, treated, and discharged as part of its treated wastewater.

2.3 Industrial Pretreatment

The City of Portland implements an industrial pretreatment program that was approved by DEQ through the Columbia Boulevard Wastewater Treatment Plant NPDES Permit. The current Columbia Boulevard Wastewater Treatment Plant (CBWTP) NPDES permit includes federal and state pretreatment requirements. If a categorical industrial user is identified in the service area, the pretreatment requirements as identified in the CBWTP will apply. Additionally, an Industrial User Survey requirement will not be included in the proposed permit, as the pretreatment requirements under the CBWTP permit cover the Industrial User Survey needs of the Tryon Creek WWTP. There are currently no significant industrial users (SIUs) in the Tryon Creek WWTP service area. The City of Portland has submitted annual pretreatment program reports including updated industrial waste surveys.

2.4 Wastewater Classification

OAR 340-049 requires all permitted municipal wastewater collection and treatment facilities receive a classification based on the size and complexity of the systems. DEQ evaluated the classifications for the treatment and collection system, which are publicly available at: https://www.deq.state.or.us/wq/opcert/Docs/OpcertReport.pdf.

3. Schedule A: Effluent Limit Development

Effluent limits serve as the primary mechanism in NPDES permits for controlling discharges of pollutants to receiving waters. Effluent limitations can be based on either the technology available to control the pollutants or limits that are protecting the water quality standards for the receiving water. DEQ refers to these two types of permit limits as technology-based effluent limitations (TBELs) and water quality-based effluent limits (WQBELs) respectively. When a TBEL is not restrictive enough to protect the receiving stream, DEQ must include a WQBEL in the permit.

3.1 Existing Effluent Limits

The table below show the limits contained in the existing permit.

Table 3-1: Existing Effluent Limits

a. May 1 - October 31:

Parameter	Average Effluent Concentrations		Monthly* Average lb/day	Weekly* Average lb/day	Daily* Maximum lbs
	Monthly	Weekly			
BOD_5	20 mg/L	30 mg/L	1400	2100	2800
TSS	20 mg/L	30 mg/L	1400	2100	2800

b. November 1 - April 30:

Parameter	Average Effluent Concentrations		Monthly* Average lb/day	Weekly* Average lb/day	Daily* Maximum lbs
	Monthly	Weekly			
BOD_5	30 mg/L	45 mg/L	3100	4600	6100
TSS	30 mg/L	45 mg/L	3100	4600	6100

c.

Other parameters (year-round)	Limitations
E. coli Bacteria	Shall not exceed 126 organisms per 100 mL monthly geometric mean. No single sample shall exceed 406 organisms per 100 mL.
pH	Shall be within the range of 6.0 - 9.0
Total Residual Chlorine	Shall not exceed a daily maximum of 1.7 mg/L or a monthly average of 0.7 mg/L
BOD_5 and TSS Removal Efficiency	Shall not be less than 85% as a monthly average

3.2 Technology-Based Effluent Limit Development

40 CFR 122.44(a)(1) requires publicly owned treatment works (POTW) to meet technology-based effluent limits, for five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS) and pH (i.e., federal secondary treatment standards). Substitution of 5-day carbonaceous oxygen demand ($CBOD_5$) for BOD_5 is allowed. The numeric standards for these pollutants are contained in 40 CFR 133.102. In addition, DEQ has developed minimum design criteria for BOD_5 and TSS that apply to specific watershed basins in Oregon. These are listed in the basin-specific criteria sections under OAR 340-041-0101 to 0350. During the summer low flow months as defined by OAR, these design criteria are more stringent than the federal secondary treatment standards. The basin-specific criteria are not effluent limits, but are implemented as design criteria for new or expanded wastewater treatment plants. The table below shows a comparison of the federal secondary treatment standards and the basin-specific design criteria for the Willamette basin.

Table 3-2: Comparison of TBELs for Federal Secondary Treatment Standards and Oregon Basin-Specific Design Criteria

Parameter	Federal Secondary Treatment Standards		Willamette Basin-Specific Design Criteria (OAR 340-041-0345)	Previous Permit
	30-Day Average	7-Day Average	Monthly Average	Monthly Average
BOD_5 (mg/L)	30	45	May 1 – Oct 31: 10 mg/L Nov 1 – Apr 30: secondary treatment (same as federal)	May 1 – Oct 31: 20 mg/L Nov 1 – Apr 30: secondary treatment (same as federal)
TSS (mg/L)	30	45	May 1 – Oct 31: 10 mg/L Nov 1 – Apr 30: secondary treatment (same as federal)	May 1 – Oct 31: 20 mg/L Nov 1 – Apr 30: Secondary treatment (same as federal)
pH (S.U.)	6.0 – 9.0. (instantaneous)		Not applicable	Not applicable
BOD_5 and TSS % Removal	85%	Not applicable	Not applicable	Not applicable

The limits for BOD_5 and TSS shown in the table above are concentration-based limits. Mass-based limits are required in addition to the concentration-based limits per OAR 340-041-0061(9). The basin-specific design criteria included in the table above apply to new or expanded facilities (after June 30, 1992). This facility is not new or expanded, so these criteria do not apply. For the period of May 1 through October 31, the previous permit contains monthly average BOD_5 and TSS concentration limit of 20 mg/L with a weekly average limit of 30 mg/L. In accordance with

OAR 340-041-0061(3)(c), compliance with the minimum design criteria have been deferred for this facility until such time as the facility needs to expand or otherwise modify or replace the existing facilities. The proposed permit contains a May 1 – Oct 31 monthly average concentration limit of 20 mg/L with a weekly average limit of 30 mg/L.

For any facility that has not expanded their average dry weather treatment capacity after June 30, 1992, OAR 340-041-0061(9)(a) requires that the mass load limits be calculated using the following equations:

Monthly Avg Mass Load = Design Flow* x Monthly Concentration Limit x Unit Conversion factor

Weekly Average Mass Load = 1.5 x Monthly Average Mass Load Limit

Daily Maximum Mass Load = 2 x Monthly Average Mass Load Limit

* Design flow is the design average dry weather flow (DADWF) or the design average wet weather flow (DAWWF)

OAR 340-041-0061(9)(a)(C) allows an exception to the daily maximum mass load when the daily flow exceeds the lesser hydraulic capacity of the secondary treatment portion of the facility or twice the design average dry weather flow, the daily mass load limit does not apply.

The following table lists the effluent flows and concentration limits used for the calculations.

Table 3-3: Design Flows and Concentrations Limits

Season	Design Flow (mgd)	Monthly BOD_5 Concentration Limit (mg/L)	Monthly TSS Concentration Limit (mg/L)
Dry Weather (May 1 – Oct 31)	ADWDF = 8.3 MGD	20 mg/L	20 mg/L
Wet Weather (Nov 1- Apr 30)	AWWDF = 12.3 MGD	30 mg/L	30 mg/L
Design flow comments: ADWDF = Average Dry Weather Design Flow. AWWDF = Average Wet Weather Design Flow.			

Mass Load Calculations:

<u>May 1 – Oct 31 BOD_5 and TSS</u>

Monthly Average: 8.3 MGD x 20 mg/L x 8.34 = 1384.44 lbs/day which rounds to 1400 lbs/day (Two significant figures)

Weekly Average: 1400 lbs/day monthly average x 1.5 = 2100 lbs/day (already 2 sig figs)

Daily Maximum: 1400 lbs/day monthly x 2 = 2800 lbs/day (already 2 sig figs)

Nov 1 – Apr 30 BOD_5 and TSS

Monthly Average: 12.3 MGD x 30 mg/L x 8.34 = 3077.46 lbs/day which rounds to 3100 lbs/day (Two significant figures)

Weekly Average: 3100 lbs/day monthly average x 1.5 = 4650 lbs/day which rounds to 4700 lbs/day (two sig figs) [Note: the previous permit rounded to 4600 lbs/day, this limit will be maintained in the proposed permit to comply with antibacksliding and antidegradation requirements.]

Daily Maximum: 3100 lbs/day monthly x 2 = 6200 lbs/day (already two sig figs) [Note: the previous permit rounded to 6100 lbs/day, this limit will be maintained in the proposed permit to comply with antibacksliding and antidegradation requirements.]

The proposed BOD_5 and TSS limits are listed in the following table:

Table 3-4: Technology Based Effluent Limits

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD_5 (May 1 – October 31)	mg/L	20	30	NA
	lbs/day	1400	2100	2800
	% removal	85	NA	NA
TSS (May 1 – October 31)	mg/L	20	30	NA
	lbs/day	1400	2100	2800
	% removal	85	NA	NA
BOD_5 (November 1 – April 1)	mg/L	30	45	NA
	lbs/day	3100	4600	6100
	% removal	85	NA	NA
TSS (November 1 – April 1)	mg/L	30	45	NA
	lbs/day	3100	4600	6100
	% removal	85	NA	NA

3.3 Water Quality-Based Effluent Limit Development

40 CFR 122.44(d) requires that permits include limitations more stringent than technology-based requirements where necessary to meet water quality standards. Water quality-based effluent limits may be in the form of a wasteload allocation required as part of a Total Maximum Daily Load (TMDL). They may also be required if a site specific analysis indicates the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality criterion. DEQ establishes effluent limits for pollutants that have a reasonable potential to exceed a criterion. The analyses are discussed below.

3.3.1 Designated Beneficial Uses

NPDES permits issued by DEQ must protect the following designated beneficial uses of the Willamette River. These uses are listed in OAR-340-041-0340 for the Willamette Basin.

- Public and private domestic water supply
- Industrial water supply
- Irrigation and livestock watering
- Fish and aquatic life (including salmonid migration)
- Wildlife and hunting
- Fishing
- Boating
- Water contact recreation (not to conflict with commercial activities in Portland Harbor)
- Aesthetic quality
- Hydro power
- Commercial navigation and transportation

3.3.2 303d Listed Parameters and Total Maximum Daily Loads

The following table lists the parameters that are on the 2022 303(d) list (Category 5) within the discharge's stream reach. If a parameter is listed under Category 5, the data in the assessment unit (or nearby assessment unit) indicates a designated use is not supported or a water quality standard is not attained and a TMDL is needed. This category constitutes the Section 303(d) list that EPA will approve or disapprove under the Clean Water Act. The table also lists any parameters with a TMDL wasteload allocation assigned to the facility (Category 4A). If a parameter is listed under Category 4A, TMDLs that will result in attainment of water quality standards and beneficial use support have been approved.

Table 3-5: Category 5 and Category 4A Parameters

Water Quality Limited Parameters (Category 5)	
AU ID:	OR_SR_1709001201_88_104019
AU Name:	Willamette River
AU Status:	Impaired
Year Listed	1998
Year Last Assessed	2022
Category 5 Parameters	BioCriteria, Cyanide, Aldrin, DDE 4,4', DDT 4,4', Dieldrin, Ethylbenzene, Hexachlorobenzene, Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs)
Category 4A parameters	
Dioxin (2,3,7,8-TCDD), Temperature (see section 3.3.7)	

During permit renewal, it was determined that the Category 5 listing for Cyanide in this assessment unit (OR_SR_1709001201_88_104019) was listed in error and will be delisted in the 2024 cycle. As a result, assimilative capacity was available for cyanide. There was no reasonable potential for cyanide to exceed the water quality criteria at the edge of the ZID and RMZ (See

section 3.3.9.3). The memo discussing the listing is included in Appendix C. The remaining category 5 listings are addressed in section 3.8.10.

3.3.3 TMDL Wasteload Allocations

DEQ issued a TMDL for the Willamette Basin. WLAs from this TMDL that are applicable to the permittees are listed in the following table.

Table 3-6: Applicable WLAs

Parameter	WLA	Time Period
Temperature	52 million kilocalories/day	June - September
Bacteria	126 *E. coli* organisms/100 ml as a log-mean based on a minimum of 5 samples in a 30-day period and not to exceed 406 *E. coli* organisms/100 ml in any single sample	Year-round
Note: The WLA under the temperature TMDL may also be expressed as a flow-based limit as noted in Section 3.3.7.		

The application of the temperature and bacteria WLAs are discussed in sections 3.3.7 and 3.3.8 below. The Dioxin TMDL is discussed in section 3.3.10.

3.3.4 Pollutants of Concern

To ensure that a permit is protecting water quality, DEQ must identify pollutants of concern. These are pollutants that are expected to be present in the effluent at concentrations that could adversely impact water quality. DEQ uses the following information to identify pollutants of concern:

- Effluent monitoring data.
- Knowledge about the permittee's processes.
- Knowledge about the receiving stream water quality.
- Pollutants identified by applicable federal effluent limitation guidelines.

Based on EPA's NPDES permit application requirements, toxic pollutants of concern for domestic facilities are listed in the following table.

Table 3-7: Domestic Toxic Pollutants of Concern

Flow Rate	Pollutants
≥ 1.0 mgd	Total Residual Chlorine, Total Ammonia Nitrogen, Metals, Volatile Organic Compounds, Acid Extractable Compounds, Base Neutral Compounds

DEQ identified the following pollutants of concern for this facility listed in the following table.

Table 3-8: Pollutants of Concern

Pollutant	How was pollutant identified?
pH	Effluent Monitoring
Temperature	Effluent Monitoring
E. coli	Effluent Monitoring
Total Residual Chlorine	Effluent Monitoring
Total Ammonia Nitrogen	Application Requirement
Metals	Application Requirement
Volatile Organic Compounds	Application Requirement
Acid Extractable Compounds	Application Requirement
Base-Neutral Compounds	Application Requirement
Mercury	TMDL

The sections below discuss the analyses that were conducted for the pollutants of concern to determine if water quality based effluent limits are needed to meet water quality standards.

3.3.5 Regulatory Mixing Zone

The proposed permit contains a mixing zone as allowed per OAR 340-041-0053. The mixing zone from the previous permit is described as:

> *The allowable mixing zone is that portion of the Willamette River extending two hundred (200) feet downstream from the outfall. The Zone of Immediate Dilution (ZID) shall be defined as that portion of the allowable mixing zone that is within twenty (20) feet of the point of discharge.*

To account for tidal reversals and mixing, DEQ proposes changing the mixing zone and ZID to be described as:

> *The regulatory mixing zone is a rectangular portion of the Willamette River centered on the diffuser mid-point and oriented to true north and south. The regulatory mixing zone has a 400-foot total length (200 feet north (downstream) and south (upstream)), and a 240-foot width (120 feet east and 120 feet west centered on the diffuser mid-point). The zone of immediate dilution is the area within 20 feet of all diffuser ports.*

Dilution estimates from modeling are based on the RMZ 200-foot boundary north and south or the 20-foot ZID boundary to the north and south.

The new mixing zone is shown below for clarity:

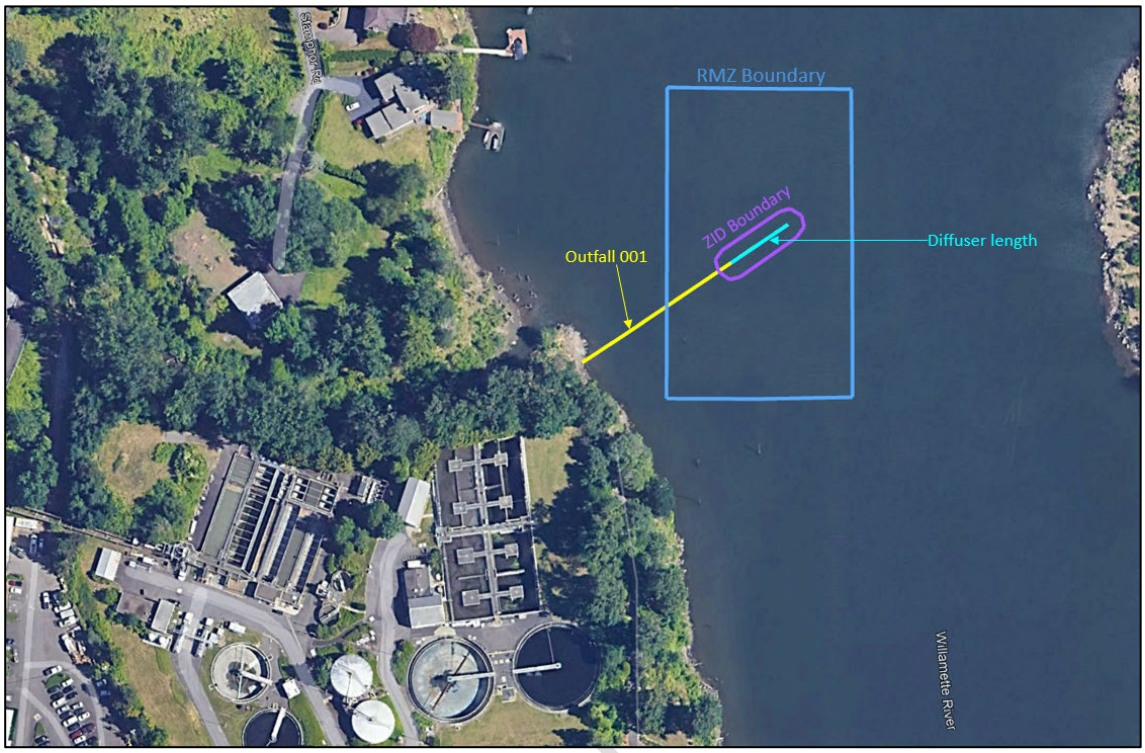


Figure 3-1: Mixing Zone

The dilutions at the edge of the zone of initial dilution and mixing zone are shown in Table 3-9. These dilutions are based on a 2023 mixing zone memo by DEQ which reviewed a mixing zone study submitted September 25, 2017. The memo is part of the administrative record.

Table 3-9: Mixing Zone Dilution Summary

Dilution Summary – Year-Round						
Water Quality Standard	**Stream Flow (cfs)**		**Effluent Flow (mgd)**		**Dilution**	**Location**
	Statistic	**Flow**	**Statistic**	**Flow**		
Aquatic Life, Acute	1Q10	6108	☐ ADWDF x PF ☒ Max Daily Avg ☐ Other	9.44	22	ZID (20 ft)
Aquatic Life, Chronic	7Q10	6146	☐ ADWDF ☒ Max Monthly Avg ☐ Other	4.70	235	MZ (200 ft)
Human Health, Non-Carcinogen	30Q5	7431	☐ ADWDF ☒ Max Monthly Avg ☐ Other	4.70	134	MZ (200 ft)
Human Health, Carcinogen	Harmonic Mean	16966	☐ Annual Avg Design ☒ Annual Avg ☐ Other	4.97	157	MZ (200 ft)
ADWDF = Average dry weather design flow *PF = Peaking factor (1.5)*						

3.3.6 pH

The pH criterion for this basin is 6.5 – 8.5 per OAR 340-041-0345. The previous permit included a TBEL of 6.0 – 9.0. DEQ determined there is no reasonable potential for the discharge to exceed the pH criterion of 6.5 – 8.5 at the edge of the mixing zone. The proposed pH limit is 6.0 – 9.0 and is a TBEL. The following provides a summary of the data used for the analysis.

Table 3-10: pH Reasonable Potential Analysis

INPUT	Lower pH Criteria	Upper pH Criteria
1. Dilution at mixing zone boundary	235.0	235.0
2. Upstream characteristics		
a. Temperature (deg C)	22.1	7.0
b. pH	6.7	7.6
c. Alkalinity (mg CaCO3/L)	21.8	21.8
3. Effluent characteristics		
a. Temperature (° C)	21.5	12.1
b. pH (S.U.)	6.0	9.0
c. Alkalinity (mg CaCO3/L)	112.8	112.8
4. Applicable pH criteria	6.5	8.5
pH at mixing zone boundary	6.6	7.6
Is there reasonable potential?	No	No
Proposed effluent limits	6.0	9.0
Effluent data source: PDX_BES-CL2EF; Date 2017-01-25 to 2018-12-19 and ICIS statistics for temperature		
Ambient data source: PDX_BES-WRUS; Date 2017-01-25 to 2018-12-19		

3.3.7 Temperature

3.3.7.1 Temperature Criteria OAR 340-041-0028

The following table summarizes the temperature criteria that apply at the discharge location along with whether the receiving stream is water quality-limited for temperature and whether a TMDL wasteload allocation has been assigned. Using this information, DEQ performed several analyses to determine if effluent limits were needed to comply with the temperature criteria.

Table 3-11: Temperature Criteria Information

Applicable Temperature Criterion	Migration Corridor 20ºC (OAR 340-041-0028(4)(d)
Applicable dates: Year-round	
Salmon/Steelhead Spawning 13 °C? OAR 340-041-0028(4)(a)	☐Yes ☒No
Applicable dates: N/A	
WQ-limited?	☒Yes ☐No
TMDL wasteload allocation assigned?	☒Yes ☐No
Applicable dates: June - September	
Cold water summer protection criterion applies?	☐Yes ☒No
Cold water spawning protection applies?	☐Yes ☒No
Comments: Summer WLA = 74 million kilocalories/day. Assessment Unit OR_SR_1709001201_88_104019 lists temperature as Category 5 and was last assessed in 2010. Because a temperature TMDL now applies, it is expected that this listing will be changed to Category 4A during the next assessment.	

The current permit does not contain an excess thermal load limit as it was issued prior to the development of the Willamette River TMDL. In the 2006 Willamette River TMDL, the facility was assigned a static wasteload allocation (WLA) of 52 million kilocalories/day (Mkcal/day). The TMDL also allows for a river flow based WLA.[1] In addition to these WLAs, DEQ has allocated a portion of the TMDL's reserve capacity to the Tryon Creek facility, expressed as a WLA multiplier of 1.418.[2] The resulting static WLA with reserve capacity is 74 million kcals/day. According to the TMDL, the critical period for temperature in this segment of river is June 1 through September 30 and the WLAs for Tryon Creek WWTP apply during this period (TMDL, p.4-69). For the remainder of the year (October 1 – May 31), the TMDL determined that no WLA, and no associated limit, was necessary for the facility during this period.

[1] The TMDL also includes an option where the WLA is based on the measured river flow and river temperature. While not included in this permit renewal, this alternate WLA may be included in future permit renewals or modifications.

[2] 2010 *Mainstem Willamette River Reserve Capacity Analysis*, DEQ April 2010, Table 5.

As noted above, the TMDL includes a WLA for Tryon Creek WWTP that may be expressed as a static limit, 74 million kcals/day (with the multiplier), or as a river flow-based limit. The river flow-based limit is equal to $0.0027 \cdot Q_R + 52$ million kcals/day (where Q_R is the river flow in cfs). The derivation of the flow-based limit is described in Appendix A.

Final effluent limits are listed in the following table.

Table 3-12: Temperature Criterion Effluent Limits

Effluent limit needed? ☒Yes ☐No
TMDL WLA Limit: 74 million kcals/day or $WLA = 0.0027Q_R + 52$ million kilocalories/day
Applicable time period: June – September ☐NA
Temperature Criterion Limit: N/A
Applicable time period: Dates ☒NA
Comments:

All temperature data from June – September 2022 was analyzed against the new thermal load limit to determine if the facility is expected to be able to meet the limit upon issuance.

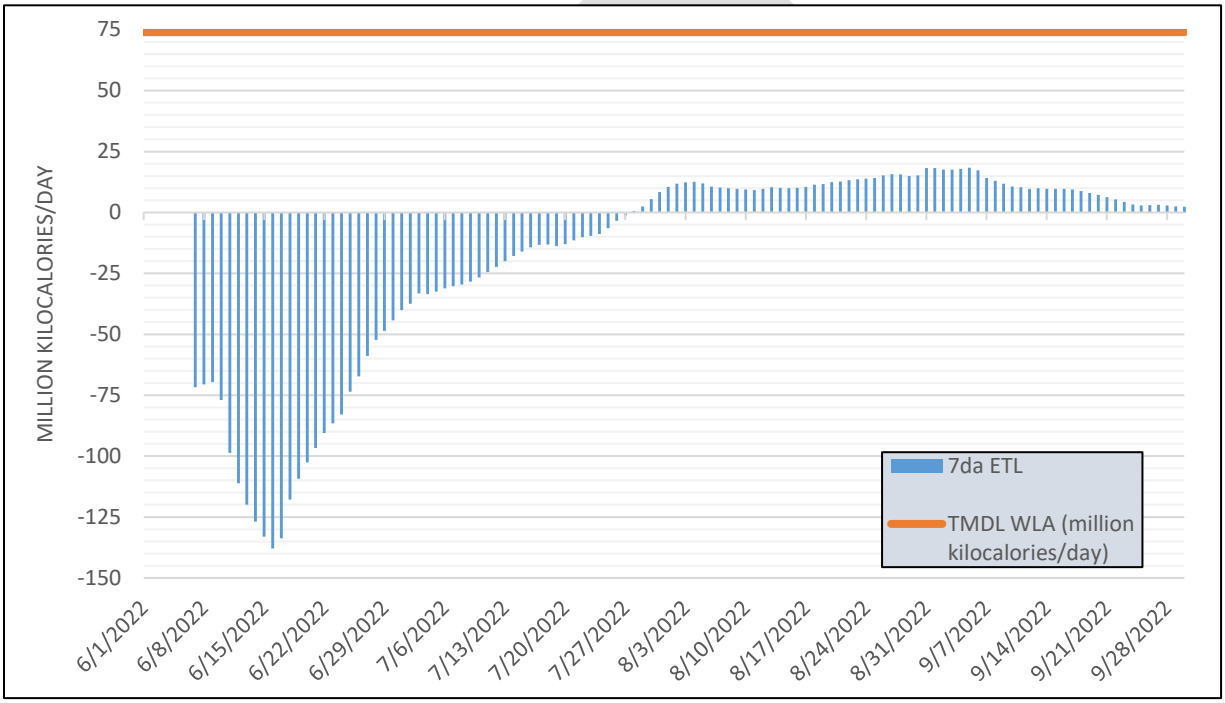


Figure 3-2: 2022 discharged thermal load vs. new limit

The maximum single day excess thermal load for June – September 2022 was 35.4 million kilocalories/day. The maximum 7-day average excess thermal load for June – September 2022 was 18.4 million kilocalories/day. As a result, the permittee is expected to be able to meet the limit upon issuance.

3.3.7.2 Thermal Plume OAR 340-041-0053(2)(d)

In addition to compliance with the temperature criteria, OAR 340-041-0053(2)(d) contains thermal plume limitation provisions designed to prevent or minimize adverse effects to salmonids that may result from thermal plumes. The discharge was evaluated for compliance with these provisions as follows:

- OAR 340-041-0053(2)(d)(A): Impairment of an active salmonid spawning area where spawning redds are located or likely to be located. This adverse effect is prevented or minimized by limiting potential fish exposure to temperatures of 13 ºC or more for salmon and steelhead, and 9 ºC or more for bull trout.

  Spawning is not a designated beneficial use in the segment of the river; therefore this is not applicable.

- OAR 340-041-0053(2)(d)(B): Acute impairment or instantaneous lethality is prevented or minimized by limiting potential fish exposure to temperatures of 32 ºC or more to less than 2 seconds.

  The maximum effluent temperature for the permittee is 24.2 °C, therefore there is no reasonable potential for acute impairment.

- OAR 340-041-0053(2)(d)(C): Thermal shock caused by a sudden increase in water temperature is prevented or minimized by limiting potential fish exposure to temperatures of 25 ºC or more to less than 5% of the cross-section of 100% of the 7Q10 flow of the water body.

  The maximum effluent temperature for the permittee is 24.2 °C, therefore there is no reasonable potential for thermal shock.

- OAR 340-041-0053(2)(d)(D): Unless ambient temperature is 21 ºC or greater, migration blockage is prevented or minimized by limiting potential fish exposure to temperatures of 21 ºC or more to less than 25% of the cross-section of 100% of the 7Q10 flow of the water body.

  The migration blockage portion of the rule is based primarily on the USEPA guidance document, *EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards* (April 2003). Section V.3. of the document gives guidance on protecting salmonids from the thermal plume impacts and provides this discussion on migration blockage:

  > *Adult migration blockage conditions can occur at 21ºC… Therefore, EPA suggests that the cross-sectional area of a river at or above 21ºC be limited to less than 25% or, if upstream temperature exceeds 21ºC, the thermal plume be limited such that 75% of the cross-sectional area of the river has less than a de minimis (e.g., 0.25ºC) temperature increase.*

The maximum recorded receiving water temperature upstream of the discharge locations is 23.5 °C (maximum instantaneous value as no continuous temperature loggers in region). An analysis related to migration blockage indicates that when the receiving water temperature is 21 °C and the effluent temperature is at the maximum measured effluent temperature (24.2 °C), the effluent plume when it reaches 25% of the receiving stream's cross-sectional area will be 21.0 °C which prevents or minimizes migration blockage.

Effluent limits needed to comply with the thermal plume requirements are shown in the following table.

Table 3-13: Thermal Plume Effluent Limit

Effluent limit needed? ☐Yes ☒No
Calculated limit: N/A
Applicable timeframe: N/A
Comments: N/A

3.3.7.3 Cold Water Refugia

OAR 340-041-0028(4)(d) requires that water bodies subject to the salmonid migration criterion of 20°C must also have cold water refugia that are sufficiently distributed so as to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the water body. The location of the cold water refugia nearest to the Tryon Creek WWTP outfall were identified using the conclusions of the March 2020 report by DEQ titled *Lower Willamette River Cold-Water Refuge Narrative Criterion Interpretation Study.*

The Tryon Creek WWTP outfall is located at river mile 20.03 based on DEQ's LLID layer and river mile 20.3 when referencing USGS topographic maps in the Lower Willamette River. The nearest upstream cold water refugia is Oswego Creek, located at river mile 21.1, which is far outside the influence of Tryon Creek WWTP's effluent. The nearest downstream cold water refugia is Tryon Creek, a high-quality cold water refugia which is located at river mile 20.1. Tryon Creek has relatively low flow as well as a narrow channel, so that cold-water plume is minimal and extends only a few meters past the banks into the main channel. Additionally, the nearshore area is shallow and warmer than the remainder of the channel.[3] An analysis was conducted to determine the increase in temperature at the edge of the RMZ boundary which is shown in the table below:

[3] Oregon Dept. of Env. Quality. (2020). *Lower Willamette River Cold-Water Refuge Narrative Criterion Interpretation Study*. www.oregon.gov/DEQ

Table 3-14: Temperature change at edge of the regulatory mixing zone

Input	Value	Source
Chronic Aquatic Life Dilution	235	2023 MZ Memo
7Q10	6,146 CFS	2023 MZ Memo
Effluent Flow	12.45 MGD	ADWDF x 1.5
Applicable Temperature Criterion	20 °C	
Effluent Temperature	24.2 °C	Max effluent temp for May - Oct period, years = Jan 2017 - Jun 2023
Allowable increase	0.3 °C	
ΔT at edge of RMZ	**0.0179 °C**	

As a result, it is unlikely that Tryon Creek WWTP's effluent would have an impact on the Tryon Creek cold water refugia. The minimal change in temperature at the edge of the RMZ, which still lies outside of the range of the cold water refugia minimizes the potential impact. The location of Tryon Creek WWTP's mixing zone to the Tryon Creek cold water refugia is shown in the figure below.

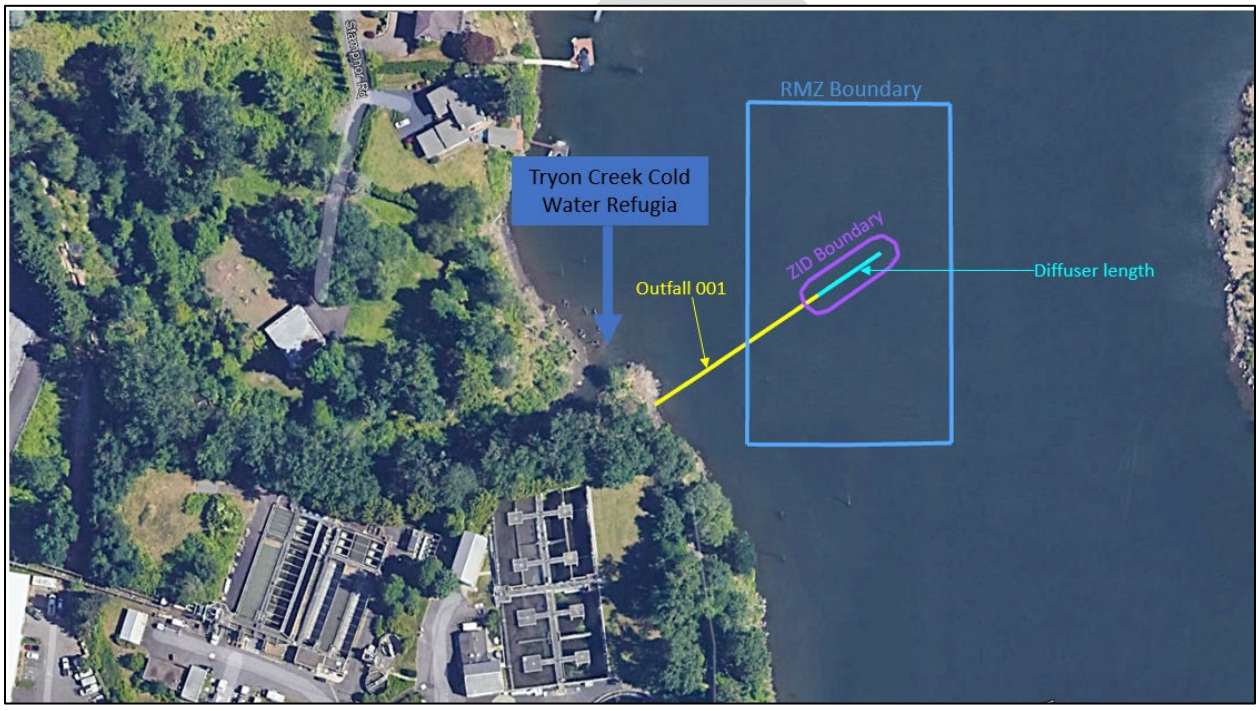


Figure 3-3: Tryon Creek cold water refugia and WWTP mixing zone

3.3.8 Bacteria

OAR 340-041-0009(6)(b) requires discharges of bacteria into freshwaters meet a monthly geometric mean of 126 *E. coli* per 100 mL, with no single sample exceeding 406 *E. coli* per 100 mL. If a single sample exceeds 406 *E. coli* per 100 mL, then the permittee may take five consecutive re-samples. If the geometric mean of the five re-samples is less than or equal to 126, a violation is not triggered. The re-sampling must be taken at four-hour intervals beginning within 28 hours after the original sample was taken. These limits are the same as those prescribed by the Willamette River TMDL. The following table includes the proposed permit limits and apply year-round.

Table 3-15: Proposed *E. coli* Limits

E. coli **(#/100 ml)**	**Geometric Mean**	**Maximum**
Existing Limit	126	406
Proposed Limit	126	406

3.3.9 Toxic Pollutants

DEQ typically performs the reasonable potential analysis for toxics according to EPA guidance provided in the Technical Support Document for Water Quality-Based Toxics Control (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991). The factors incorporated into this analysis include:

1. Effluent concentrations and variability
2. Water quality criteria for aquatic life and human health
3. Receiving water concentrations
4. Receiving water dilution (if applicable)

DEQ performs these analyses using spreadsheets that incorporate EPA's statistical methodology. The following sections describe the analyses for various toxic pollutants below.

3.3.9.1 Total Residual Chlorine

The existing permit contains chlorine limits. New chlorine limits were calculated based on updated information. The newly calculated limits are more stringent than the existing limits, so the new limits are being proposed. Proposed limits are listed in the following table.

Table 3-16: Proposed Chlorine Limits

	Chronic (mg/L)	Acute (mg/L)
Chlorine Criteria	0.011	0.019
	Average Monthly Limit (mg/L)	**Maximum Daily Limit (mg/L)**
Existing Limit	0.7 mg/L	1.7 mg/L
Calculated Limit	0.16 mg/L	0.42 mg/L
Proposed Limit	**0.16 mg/L**	**0.42 mg/L**
Effluent data source: Existing total residual chlorine limits		
Receiving water data source: Assumed to be zero		

Total Residual Chlorine daily monitoring data between November 2019 and July 2023 were compared against previous and proposed limits in the graph below:

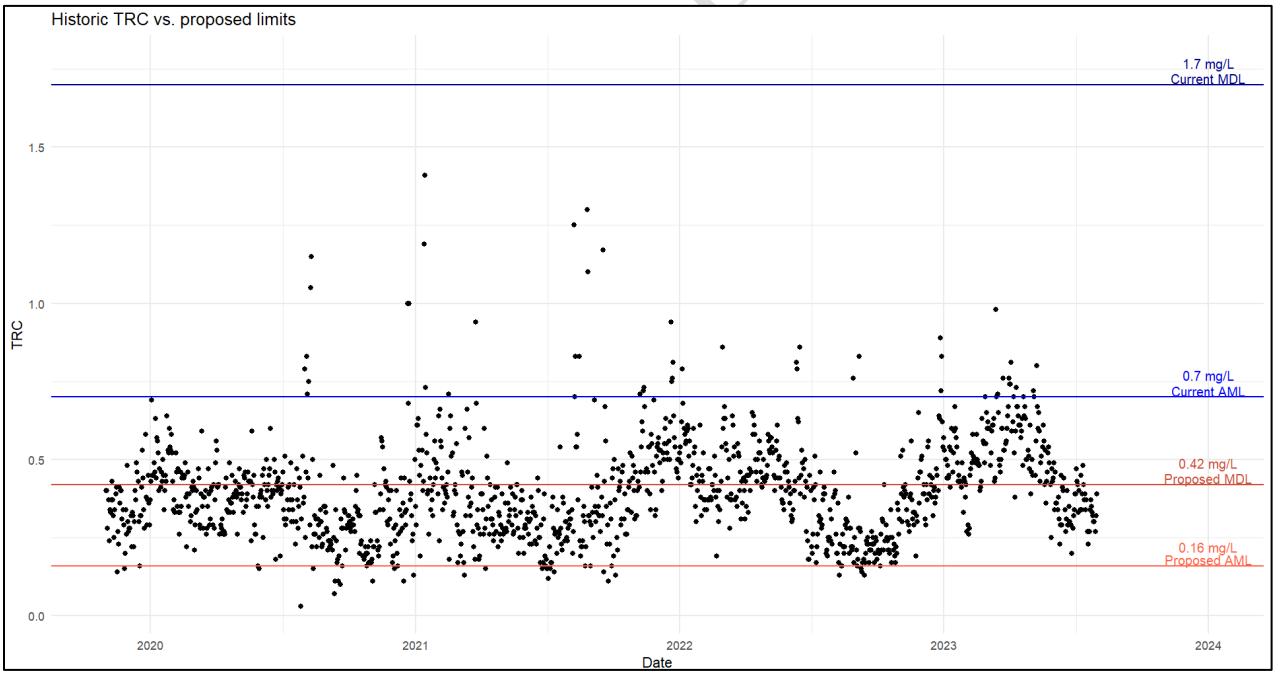


Figure 3-4: Total Residual Chlorine monitoring data vs. proposed limits

The proposed limits are outside of the range currently achieved by the facility. A compliance schedule has been added to the proposed permit (see Schedule C of Fact Sheet and Permit).

3.3.9.2 Total Ammonia Nitrogen

DEQ's ammonia criteria vary with changes in pH and temperature. DEQ performed a reasonable potential analysis that accounts for changes in the effluent and receiving water pH and temperature to determine the appropriate ammonia criteria. The following table provides a summary of the data used for the ammonia analysis and the results of the analysis. There is no existing permit limit for ammonia at this facility. The results of the ammonia reasonable potential analysis (RPA) do not indicate reasonable potential to exceed water quality criteria in summer discharge season (Nov – Apr) or winter discharge season (May – Oct). As a result, no effluent limit for ammonia is included in the proposed permit.

Table 3-17: Ammonia Analysis Information - Summer

	Acute	Chronic	
		4-day	30-day
Dilution	22	235	134
Ammonia Criteria (mg/L)	6.2	2.6	1.1
Effluent Data Used			
Ammonia (mg/L)	35.2	35.2	
pH (SU)	7.7	7.7	
Temperature (ºC)	22.2	22.2	
Alkalinity (mg/L CaCO3)	118.0	118.0	
Receiving Stream Data Used			
Ammonia (mg/L)	0.1	0.1	
pH (SU)	7.6	7.6	
Temperature (ºC)	23.4	23.4	
Alkalinity (mg/L CaCO3)	24.7	24.7	
Ammonia Limit Needed?	**No**		
Calculated Limits	AML	MDL	
Ammonia (mg/L)	N/A	N/A	
Effluent data source			
Effluent ammonia from all DMR attachments submitted between May 2020 and July 2023. Temperature and pH from ICIS statistics May 2017 to June 2023. Alkalinity from 1/25/20–7 - 12/19/2018 Copper BLM and Al Effluent Monitoring data.			
Ambient data source			
PDX_BES-WRUS; Date 2017-01-25 to 2022-02-02			

Table 3-18: Ammonia Analysis Information - Winter

	Acute	Chronic	
		4-day	30-day
Dilution	22	235	134
Ammonia Criteria (mg/L)	10.4	6.1	2.4
Effluent Data Used			
Ammonia (mg/L)	23.6	23.6	
pH (SU)	8.0	8.0	
Temperature (ºC)	17.5	17.5	
Alkalinity (mg/L CaCO3)	109.7	109.7	
Receiving Stream Data Used			
Ammonia (mg/L)	0.1	0.1	
pH (SU)	7.6	7.6	
Temperature (ºC)	9.7	9.7	
Alkalinity (mg/L CaCO3)	21.1	21.1	
Ammonia Limit Needed?	**No**		
Calculated Limits	AML	MDL	
Ammonia (mg/L)	N/A	N/A	
Effluent data source			
Effluent ammonia from all DMR attachments submitted between May 2020 and July 2023. Temperature and pH from ICIS statistics May 2017 to June 2023. Alkalinity from 1/25/20–7 - 12/19/2018 Copper BLM and Al Effluent Monitoring data.			
Ambient data source			
PDX_BES-WRUS; Date 2017-01-25 to 2022-02-02			

3.3.9.3 Priority Pollutant Toxics

DEQ conducted a reasonable potential analysis for the group of toxics listed in the following table. A complete list of the pollutants is located in the reasonable potential spreadsheet located in Appendix B. There was no reasonable potential at the edge of the ZID or RMZ for any parameter analyzed, and thus no limits for priority pollutant toxics are included in the proposed permit.

Table 3-19: Toxic Pollutants Analyzed

Toxic Group
Metals, cyanide, and total phenols
Volatile Organic Compounds
Acid Extractable Compounds
Base-Neutral Compounds
Pesticides
Effluent data source: PDX_BES-CL2EF between 1/25/2017 and 5/4/2023
Receiving water data source: PDX_BES-WRUS between 10/05/2016 and 2/2/2022

3.3.9.4 Copper Biotic Ligand Model

Monthly paired effluent and ambient copper BLM input data was collected by City of Portland Bureau of Environmental Services staff for Tryon Creek Permit #101614 and analyzed by various labs starting in January 2017 through December 2018. Further analysis of nearby pH data revealed that the pH data point for the February 2/23/2017 sampling event was likely biased low. As a result, the pH data taken by USGS the Morrison Bridge (14211720) from the same date was used in the analysis. For the RPAs, the mixed concentrations of each input parameter were then entered into the BLM model to calculate the instantaneous water quality criteria (IWQC) for each paired data set. Each IWQC was compared to the corresponding copper concentration of the effluent or the calculated value at complete mix. Table 3-20 below shows the sample date, calculated criterion, calculated copper value, and toxic unit (copper concentration divided by the instantaneous criterion). A toxic unit greater than one indicates there is a potential for the discharge to exceed the criterion. A toxic unit of NA indicates that either the effluent data was below the calculated criteria, the effluent data was non-detect, or the copper data was in the total recoverable instead of dissolved fraction. There is no reasonable potential since there are no data sets with a TU greater than one.

Table 3-20: Copper Biotic Ligand Model

Date	Effluent Cu ug/L	Ambient Cu ug/L	ZID Cu ug/L	BLM CMC ug/L	Toxic Units	RMZ Cu ug/L	BLM CCC ug/L	Toxic Units	100% mix Cu ug/L	BLM CCC Cu ug/L	Toxic Units
1/25/2017	2.36	0.61	0.69	5.36	NA	0.62	3.13	NA	0.61	3.13	NA
2/23/2017	2.12	0.80	0.86	3.24	NA	0.81	2.35	NA	0.80	2.35	NA
3/7/2017	2.48	0.58	0.67	4.72	NA	0.59	2.75	NA	0.58	2.75	NA
4/5/2017	4.36	0.38	0.56	3.64	0.15	0.40	1.95	0.20	0.39	1.80	0.22
5/3/2017	4.81	0.38	0.58	3.81	0.15	0.40	1.90	0.21	0.39	1.90	0.20
6/15/2017	3.01	0.33	0.46	3.12	NA	0.35	1.58	0.22	0.34	1.58	0.22
7/12/2017	8.09	0.36	0.71	6.11	0.12	0.40	3.94	0.10	0.38	3.94	0.10
8/2/2017	5.14	0.42	0.64	5.77	NA	0.44	3.34	0.13	0.43	3.34	0.13
9/6/2017	4.98	0.35	0.56	4.30	0.13	0.37	2.18	0.17	0.36	2.17	0.17
10/3/2017	3.41	0.32	0.46	3.44	NA	0.33	1.72	0.19	0.32	1.72	0.19
11/14/2017	3.74	0.53	0.67	6.10	NA	0.54	4.32	NA	0.53	4.32	NA
12/6/2017	5.07	0.48	0.69	1.97	0.35	0.50	0.89	0.57	0.49	0.89	0.56
1/18/2018	3.88	0.50	0.66	7.32	NA	0.52	4.23	NA	0.51	4.23	NA
2/1/2018	3.99	0.57	0.72	6.12	NA	0.58	3.78	0.15	0.57	3.77	0.15
3/15/2018	7.35	0.91	1.20	2.73	NA	0.94	1.35	0.70	0.92	1.35	0.69
4/12/2018	3.16	1.68	1.75	6.38	NA	1.69	4.26	NA	1.68	4.26	NA
5/10/2018	5.87	0.47	0.72	4.82	NA	0.50	2.27	NA	0.48	2.27	NA
6/6/2018	8.73	0.53	0.90	5.27	NA	0.56	3.00	NA	0.54	2.99	NA
7/2/2018	6.18	0.59	0.85	6.16	NA	0.61	3.25	NA	0.60	3.25	NA
8/9/2018	5.92	0.55	0.79	5.14	NA	0.57	3.10	NA	0.56	3.09	NA
9/24/2018	7.32	0.51	0.82	4.94	NA	0.54	2.85	NA	0.53	2.85	NA
10/10/2018	6.18	0.64	0.89	5.28	NA	0.66	2.63	NA	0.65	2.47	NA
11/19/2018	8.15	0.50	0.85	4.09	NA	0.54	1.98	NA	0.52	1.98	NA
12/19/2018	2.73	2.79	2.79	2.76	NA	2.79	1.64	NA	2.79	1.64	NA

3.3.9.5 Aluminum

Four paired effluent and ambient aluminum and hardness data was collected by City of Portland Bureau of Environmental Services staff for the Tryon Creek Permit #101614 and analyzed by various labs starting in May 2021 through February 2022. 10th percentile Temperature, pH, and DOC values and 90th percentile alkalinity values from the 2017-2018 CuBLM data were used as surrogates for paired data for effluent and ambient. For the RPAs, the mixed concentrations of each input parameter were then entered into the aluminum criteria model to calculate the instantaneous water quality criteria (IWQC) for each paired data set. Each IWQC was compared to the corresponding aluminum concentration of the effluent or the calculated value at the ZID boundary, the MZ boundary, and at complete mix. All of the effluent data submitted by the permittee was non detect at 50 ug/L. The lowest criteria calculated from the paired data was 250 ug/L. Therefore, the data is considered sufficiently sensitive and there is no reasonable potential to exceed the aluminum criteria.

3.3.9.6 Mercury – Human Health Criterion

A Willamette Basin Mercury TMDL was established by EPA on December 30, 2019. According to the EPA TMDL and the State of Oregon Water Quality Management Plan, this facility must conduct mercury monitoring and develop and implement a mercury minimization plan tailored to the facility's potential to discharge mercury. The proposed permit includes a requirement to develop and submit a mercury minimization plan (in Schedule A) and to conduct associated effluent monitoring (in Schedule B). Once the plan is submitted to DEQ for review, it must go on public notice for public review and is incorporated into the permit by reference. The TMDL applies even though this specific assessment unit is not listed as Category 4A for mercury.

3.3.10 Other Pollutants Associated with Water Quality Impairments

3.3.10.1 Dioxin (2,3,7,8-TCDD)

This assessment unit is listed for Dioxin in Category 4A for not meeting human health criterion for dioxin. The 1991 Columbia River (as well as Snake and Willamette River) TMDL addressed Dioxin but did not issue a wasteload allocation to the Tryon Creek WWTP discharge. The TMDL focused on pulp and paper mills that discharge to the Willamette River. Tryon Creek WWTP is a domestic wastewater treatment plant and therefore is not in the industrial source category of pulp mills or wood treaters. Monitoring is required for facilities where the pollutant is known to be present and none of these pollutants are known or expected to be present in the discharge. Therefore, there is no reasonable potential to cause or contribute to this listing and monitoring for dioxin is not being required in the proposed permit.

3.3.10.2 Aldrin, DDE 4,4' and DDT 4,4'

Aldrin, DDE 4,4' and DDT 4,4' were listed in 2002 and reassessed in 2022. All ambient results (1 sample for each analyte) in the assessment unit were non-detect, and the MDLs were greater than the water quality criteria. As a result, the listings were maintained. 8 effluent samples for Aldrin, DDE 4,4', and DDT 4,4' were taken between 1/25/2017 and 5/4/2023, and there were zero detections. As a result, there is no reasonable potential to cause or contribute to this listing and monitoring for Aldrin, DDE 4,4', and DDT 4,4' are not being required in the proposed permit.

3.3.10.3 Dieldrin, Ethylbenzene, Hexachlorobenzene

Dieldrin and Ethylbenzene were both listed in 2012 and reassessed in 2022. All ambient results (1 sample for each analyte) in the assessment unit were non-detect, and the MDLs were greater than the water quality criteria. As a result, the listings were maintained. 8 effluent samples for Dieldrin and 7 samples for Ethylbenzene were taken between 1/25/2017 and 5/4/2023, and there were zero detections. As a result, there is no reasonable potential to cause or contribute to the listing for Dieldrin or Ethylbenzene. There is no monitoring for Dieldrin included in the proposed permit. Monitoring for Ethylbenzene is included (Table B7 of permit) as part of standard Effluent Toxics Characterization Monitoring.

Hexachlorobenzene was listed in 2010 and reassessed in 2022. All ambient results (1 sample for each analyte) in the assessment unit were non-detect, and the MDL was greater than the water quality criteria. As a result, the listing was maintained. 7 effluent samples for Chlorobenzene were taken between 1/25/2017 and 5/4/2023, and there were zero detections. As a result, there is

no reasonable potential to cause or contribute to the listing for Hexachlorobenzene. Monitoring for Hexachlorobenzene is included (Table B7 of permit) as part of standard Effluent Toxics Characterization Monitoring.

3.3.10.4 Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs were listed in 2002, and were not reassessed in 2022. Common PAHs include benzo(a)anthracene, benzo(a)pyrene and others listed under base-neutral compounds (see Table B9 of permit). For this class of compounds, there were 2-8 samples taken between 1/25/2017 and 5/4/2023, and there were zero detections. As a result, there is no reasonable potential to cause or contribute to the listing for PAHs. Monitoring for Base-Neutral Compounds (Table B9 of permit) is included as part of standard Effluent Toxics Characterization Monitoring.

3.3.10.5 Biocriteria

The Willamette River is listed on the 303(d) list for not meeting the narrative biological criterion. The 2022 listing is based on research conducted in this portion of the river (Sethajintanin, D., Johnson, E.R., Loper, B.R., and Anderson, K.A., (2004) Bioaccumulation Profiles of Chemical Contaminants in Fish from the Lower Willamette River, Portland Harbor, Oregon). DEQ does not have enough information about the cause of the biological impairment to determine if the permittee's discharge may be contributing to the impairment. Therefore, biological criteria will not be addressed through monitoring or effluent limits in the proposed permit.

3.4 Antibacksliding

The proposed permit complies with the antibacksliding provisions of CWA sections 402(o) and 303(d)(4) and 40 CFR 122.44(l). The proposed limits are the same or more stringent than the existing permit so the antibacksliding provision is satisfied.

3.5 Antidegradation

DEQ must ensure the permit complies with Oregon's antidegradation policy found in OAR 340-041-0004. This policy is designed to protect water quality by limiting unnecessary degradation from new or increased sources of pollution.

DEQ has performed an antidegradation review for this discharge. The proposed permit contains the same or more stringent discharge loadings as the existing permit. Permit renewals with the same or more stringent discharge loadings as the previous permit are not considered to lower water quality from the existing condition. DEQ is not aware of any information that existing limits are not protecting the receiving stream's designated beneficial uses. DEQ is also not aware of any existing uses present within the water body that are not currently protected by standards developed to protect the designated uses. Therefore, DEQ has determined that the proposed discharge complies with DEQ's antidegradation policy. DEQ's antidegradation worksheet for this permit renewal is available upon request.

3.6 Whole Effluent Toxicity

Whole effluent toxicity (WET) tests are used to determine the treated wastewater's aggregate toxic effect on aquatic organisms. Wastewater samples are collected, and aquatic organisms are subjected to a range of concentrations in controlled laboratory experiments. EPA recommends that WET tests be used in NPDES permits together with requirements based on chemical-specific water quality criteria.

WET tests are used to determine the percentage of effluent that produces an adverse effect on a group of test organisms. The measured effect may be fertilization, growth, reproduction, or survival. EPA's methodology includes both an acute test and a chronic test. An acute WET test is considered to show toxicity if adverse effects occur at effluent concentrations less than what is found at the edge of the zone of immediate dilution (ZID). A chronic WET test is considered to show toxicity if adverse effects occur at effluent concentration less than what is known to occur at the edge of the mixing zone.

3.7 Groundwater

The treatment facility does not have any basins, ponds or lagoons that have the potential to leach into the groundwater. No groundwater monitoring or limits are required.

4. Schedule A: Other Limitations

4.1 Mixing Zone

Schedule A describes the regulatory mixing zone as discussed above in section 3.

5. Schedule B: Monitoring and Reporting Requirements

Schedule B of the permit describes the minimum monitoring and reporting necessary to demonstrate compliance with the proposed effluent limits. In addition, monitoring for other parameters is required to better characterize the effluent quality and the receiving stream. This data will be used during the next permit renewal. Detailed monitoring frequency and reporting requirements are in Schedule B of the proposed permit. The required monitoring, reporting and frequency for many of the parameters are based on DEQ's monitoring and reporting matrix guidelines, permit writer judgment, and to ensure the needed data is available for the next permit renewal.

Receiving water monitoring for hardness, lead, cyanide, zinc, and 2,4,6-trichlorophenol were included in the new permit. This was to ensure that ambient data would be available at the next permit renewal for these analytes since the priority pollutant toxics RPA indicated that these criteria could exceed criteria at the point of discharge but not at the edge of the ZID or RMZ.

6. Schedule C: Compliance Schedule

The proposed permit contains a new effluent limit for Total Residual Chlorine. The facility is unable to meet this limit upon permit issuance as the current facility does not have a dechlorination system. The proposed permit contains a compliance schedule that allows time for the facility to make facility modifications in order to meet the new limits. This compliance schedule lays out a series of milestones which upon completion, will enable the permittee to meet the permit's water quality-based effluent limits for chlorine (see 40 CFR 122.47 and OAR 340-041-0061(12)).

The limits addressed in the schedule are more restrictive WQBELs than those in the current permit. As there is no dechlorination system currently installed, it has been determined that the permittee will not be able to meet these limits at the permit's effective date. However, interim limits begin at the permit's effective date that are the lowest currently achievable by the facility and are more restrictive than the limits in the current permit. DEQ has determined that the proposed compliance schedule requires the permittee to meet the final limits as soon as possible. The permittee must provide process and engineering options for achieving the final effluent limitations, as well as progress reports on a new wastewater treatment facility being designed to replace the Tryon Creek WWTP. The City of Lake Oswego is planning to design, build, and construct a new wastewater treatment facility that will meet more stringent TBELs and WQBELs than the Tryon Creek WWTP. This facility, when built and fully operational, is planned to able to meet the chlorine limits as described in the compliance schedule. The permittee must determine and begin to implement by the date described in Schedule C of the permit a solution for achieving final total residual chlorine effluent limits.

7. Schedule D: Special Conditions

The proposed permit contains the following special conditions. The conditions include the following:

7.1 Inflow and Infiltration

A requirement to submit an updated inflow and infiltration report in order to reduce groundwater and stormwater from entering the collection system.

7.2 Emergency Response and Public Notification Plan

A requirement to develop and submit an emergency and spill response plan or ensure the existing one is current per General Condition B.8 in Schedule F.

7.3 Exempt Wastewater Reuse at the Treatment System

A condition that exempts the permit holder from the recycled water requirements in OAR 340-055, when recycled water is used for landscape irrigation at the treatment facility or for in-plant processes, such as in plant maintenance activities.

7.4 Wastewater Solids Annual Report

This condition requires the permittee to submit a Wastewater Solids Annual Report each year documenting removal of wastewater solids from the facility during the previous calendar year.

7.5 Wastewater Solids Transfers

A condition that allows the facility to transfer treated or untreated wastewater solids to other in-state or out-of-state facilities that are permitted to accept the wastewater solids.

7.6 Whole Effluent Toxicity Testing

The permittee is required to perform WET testing to ensure the aggregate of toxics is not negatively impacting aquatic life. This condition describes the test procedures and requirement for the WET testing. A dilution series has been specified on the basis of the mixing zone analysis.

7.7 Operator Certification

The permit holder is required to have a certified operator consistent with the size and type of treatment plant covered by the permit per OAR 340-049-0005. This special condition describes the requirements relating to operator certification.

7.8 Outfall Inspection

A condition that requires the permittee to inspect the outfall and submit a report regarding its condition.

8. Schedule F: NPDES General Conditions

Schedule F contains the following general conditions that apply to all NPDES permittees. These conditions are reviewed by EPA on a regular basis.

- Section A. Standard Conditions
- Section B. Operation and Maintenance of Pollution Controls
- Section C. Monitoring and Records
- Section D. Reporting Requirements
- Section E. Definitions

Appendix A: Supporting Information for River Flow-Based Wasteload Allocation/Limit

The flow based WLA formula is derived from Appendix 4.5 of Chapter 4 of the Willamette River TMDL and a modification to the formula is added from the April 2010 *Mainstem Willamette Reserve Capacity Analysis.*

For the equation review:

- TMDL p. 4-132 and 4-133, equations 6 and 7
- Table 5 of the Reserve Capacity Analysis (added multiplier)

For the inputs to the equation specific to Tryon Creek WWTP see:

- See TMDL p. 4-117 (Tryon Creek WWTP)
- See Table 5 of Reserve Capacity Analysis

$$WLA = d \cdot Q_{PS} \cdot k \cdot (T_{PS} - T_{RC})(Reserve\ Capacity\ Multiplier)$$

$$d = mQ_R + b - a$$

$$a = 1 - (T_{RA\_N}/T_{RC})$$

m = 0.00004520 (a dimensionless value whose derivation is explained on page 4-133 of TMDL)

Q_R = Daily river flow (in cfs)

b = 0.9657 (a dimensionless value whose derivation is explained on page 4-133 of TMDL)

T_{RA_N} = 18.0°C [Rolling seven-day average natural thermal potential river temperature (°C)]

T_{RC} = 20.0°C [Fish use designation period numeric biological temperature criteria (°C)]

Q_{PS} = 9.59 [Max observed effluent flow (cfs) (For Tryon: 1999-2004 flows, TMDL Table 4.34)]

T_{ps} = 21.8°C [Rolling seven-day average maximum effluent temperatures (°C)]

Reserve Capacity Multiplier = 1.418 (Table 5 of DEQ's April 2010 *Mainstem Willamette River Reserve Capacity Analysis*)

Solution

1) Solve for *a*

$$a = 1 - (T_{RA\_N}/T_{RC})$$

$$a = 1 - (18.0/20.0)$$

$$\boldsymbol{a = 0.1}$$

2) Solve for *d*

$$d = mQ_R + b - a$$

$$d = 0.00004520Q_R + 0.9657 - 0.1$$

$$d = 0.00004520Q_R + 0.8657$$

3) Solve for $(T_{PS} - T_{RC})$

$(T_{PS} - T_{RC}) = 21.8 - 20.0$

$(T_{PS} - T_{RC}) = 1.8$

4) Plug into (1) (2) (3) into WLA formula:

$WLA = d \cdot Q_{PS} \cdot k \cdot (T_{PS} - T_{RC})(Reserve\ Capacity\ Multiplier)$

$WLA = 0.00004520Q_R + 0.8657 \cdot 9.59 \cdot 2.447 \cdot 1.8 \cdot 1.418$

$WLA = (0.00004520Q_R + 0.8657) \cdot 59.89648165$

$WLA = (0.00004520Q_R \cdot 59.89648165) + (0.8657 \cdot 59.89648165)$

$WLA = 0.002707321Q_R + 51.85238416$

$$\boldsymbol{WLA = 0.0027Q_R + 52\ million\ kilocalories/day}$$

The above equation is the final flow-based TMDL WLA equation for the facility.

Appendix B: Priority Pollutant Toxics RPA

7. Human Health RP

RPA Run Information	
Facility Name:	Tryon Creek WWTP
DEQ File Number:	70735
EPA Identification #:	OR0026891
Permit Number:	101614
Prepared By:	Emma Prichard
Preparation Date:	9/25/2023
Facility Flow Rate (MGD):	8.3
Outfall Number:	1
Determination Date:	9/26/23

Color Key:	"*" = Enter data
Intermediate Calc.s	"--" = Will calculate
Calculation Results	

Facility Information						
1. Do I have dilution values from a mixing zone study? (Yes/No)						Yes
2. If answered "No" to Question 1, then fill in the following table						
Eff. Flow Rate		MGD	N/A	Calculated dilution Factors		
Stream Flow: Harmonic M		CFS	N/A	Dilution @ Harmonic Mean		N/A
Stream Flow: 30Q5		CFS	N/A	Dilution @ 30Q5		N/A
% dilution at MZ		%	25%			
3. If answered "Yes" to Question #1, then fill in dilution values				Dilution @ RMZ: harmonic mean flow		157
				Dilution @ RMZ: 30Q5 flow		134
4. Please enter statistical Confidence and Probablity values (note: defaults already entered)				Confidence Level	%	95%
				Probability Basis	%	95%
5. Is the water "fresh" or "salt"?				Fresh		
RPA Run Notes:						

			Identify Pollutants of Concern					In-Stream Conc.		Det. Reasonable Potential			
Pollutant Parameter	Evaluation Required?	Carcinogen Status	# of Sample	Effluent Conc.	Coefficent of Variation	Est. Max Eff. Conc.	RP at end of pipe?	Ambient Conc.	Max Total Conc. @ RMZ	WQ Crit: Water + Fish	WQ Crit: Fish	Is there Reasonable Potential to Exceed? (Yes/No)	
	(Yes/No)	(Yes/No)		(µg/l)	Default=0.6	(µg/l)	(Yes/No)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	Water + Fish	Fish
Table 1 Effluent Parameters for all POTWs w/a Flow > 0.1 MGD													
Nitrates-Nitrite	Yes	n	--	--	--	--	Data	*	--	10000	na	--	--
Table 2 Effluent Parameters for Selected POTWs													
Table 2: Metals (total recoverable), cyanide and total phenols									Use total recoverable data as surrogate.			No	
Antimony (total recoverable)	Yes	n	8	0.285	0.6	0.540938	No	*	--	5	64	--	--
Arsenic (total recoverable)	Yes	y	8	0.34288	0.6	No Human Health Water Quality Criteria							
Arsenic (total inorganic)	Yes	Y	3	0.17841	0.6	0.535139	No	*	--	2	2.1	--	--
Copper (total recoverable)	Yes	N	32	9.24	0.32622324	10.16559	No	*	--	1300	na	--	--
Mercury (total)	Yes	N	RP is "Yes" if at least 4 mercury samples and 25% or more of samples are above the recommended QL. See methylmercury IMD										
Methyl Mercury	Yes	N	--	--	--	--	Data	*	--	na	0.00014	--	--
Nickel (total recoverable)	Yes	N	8	1.53	0.6	2.903983	No	*	--	140	170	--	--
Selenium (total recoverable)	Yes	N	8	0	0	0	No	*	--	120	420	--	--
Thallium (total recoverable)	Yes	N	8	0	0	0	No	*	--	0	0.047	--	--
Zinc (total recoverable)	Yes	N	8	53.8	0.6	102.1139	No	*	--	2100	2600	--	--
Cyanide (total)	Yes	N	8	11.3	0.6	21.44772	No	*	--	130	130	--	--
Table 2: Volatile organic compounds													
Acrolein	Yes	N	4	0	0	0	No	*	--	1	0.93	--	--
Acrylonitrile	Yes	Y	6	0	0	0	No	*	--	0	0.025	--	--
Benzene	Yes	Y	7	0	0	0	No	*	--	0	1.4	--	--
Bromoform	Yes	y	6	0	0	0	No	*	--	3	14	--	--
Carbon Tetrachloride	Yes	Y	7	0	0	0	No	*	--	0	0.16	--	--
Chlorobenzene	Yes	N	7	0	0	0	No	*	--	74	160	--	--
Chlorodibromomethane	Yes	y	7	0	0	0	No	*	--	0	1.3	--	--
Chloroform	Yes	n	6	1.82	0.6	3.897864	No	*	--	260	1100	--	--
1,2-Dichlorobenzene (o)	Yes	n	9	0	0	0	No	*	--	110	130	--	--
1,3-Dichlorobenzene (m)	Yes	n	9	0	0	0	No	*	--	80	96	--	--
1,4-Dichlorobenzene (p)	Yes	n	9	0	0	0	No	*	--	16	19	--	--
Dichlorobromomethane	Yes	y	7	0	0	0	No	*	--	0	1.7	--	--
1,2-dichloroethane	Yes	y	7	0	0	0	No	*	--	0	3.7	--	--
1,2-trans-dichloroethylene	Yes	n	6	0	0	0	No	*	--	120	1000	--	--
1,1-dichloroethylene	Yes	n	6	0	0	0	No	*	--	230	710	--	--
1,2-dichloropropane	Yes	y	7	0	0	0	No	*	--	0	1.5	--	--
1,3-dichloropropene	Yes	y	7	0	0	0	No	*	--	0	2.1	--	--
Ethylbenzene	Yes	n	7	0	0	0	No	*	--	160	210	--	--
Methyl Bromide	Yes	n	2	0	0	0	No	*	--	37	150	--	--
Methylene Chloride	Yes	y	7	0	0	0	No	*	--	4	59	--	--
1,1,2,2-tetrachloroethane	Yes	y	7	0	0	0	No	*	--	0	0.40	--	--
Tetrachloroethylene	Yes	y	7	0	0	0	No	*	--	0	0.33	--	--
Toluene	Yes	n	7	2.22	0.6	4.451241	No	*	--	720	1500	--	--
1,1,2-trichloroethane	Yes	y	7	0	0	0	No	*	--	0	1.6	--	--
Trichloroethylene	Yes	y	7	0	0	0	No	*	--	1	3	--	--
Vinyl Chloride	Yes	y	3	0	0	0	No	*	--	0	0.24	--	--
Table 2: Acid-extractable compounds													
2-chlorophenol	Yes	n	8	0	0	0	No	*	--	14	15	--	--
2,4-dichlorophenol	Yes	n	8	0	0	0	No	*	--	23	29	--	--

2,4-dimethylphenol	Yes	n	8	0	0	0	No	*	--	76	85	--	--
4,6-dinitro-o-cresol	Yes	n	5	0	0	0	No	*	--	9	28	--	--
2,4-dinitrophenol	Yes	n	4	0	0	0	No	*	--	62	530	--	--
Pentachlorophenol	Yes	y	6	0	0	0	No	*	--	0	0.30	--	--
Phenol	Yes	n	5	0	0	0	No	*	--	9400	86000	--	--
2,4,5-trichlorophenol	Yes	n	7	0	0	0	No	*	--	330	360	--	--
2,4,6-trichlorophenol	Yes	y	7	1.22071	0.6	2.447607	Yes	0	0.01559	0	0.24	NO	NO
Table 2: Base-neutral compounds													
Acenaphthene	Yes	n	6	0	0	0	No	*	--	95	99	--	--
Anthracene	Yes	n	8	0	0	0	No	*	--	2900	4000	--	--
Benzidine	Yes	y	2	0	0	0	No	*	--	0	0.00002	--	--
Benzo(a)anthracene	Yes	y	8	0	0	0	No	*	--	0	0.0018	--	--
Benzo(a)pyrene	Yes	y	8	0	0	0	No	*	--	0	0.0018	--	--
Benzo(b)fluoranthene	Yes	y	8	0	0	0	No	*	--	0	0.0018	--	--
Benzo(k)fluoranthene	Yes	y	8	0	0	0	No	*	--	0	0.0018	--	--
Bis(2-chloroethyl)ether	Yes	y	5	0	0	0	No	*	--	0	0.053	--	--
Bis (2-chloro-1-methylethyl) ether	Yes	n	5	0	0	0	No	*	--	1200	6500	--	--
Chloromethyl Ether, bis	Yes	y	--	--	--	--	Data	*	--	0	0.000029	--	--
Bis (2-ethylhexyl)phthalate	Yes	y	8	0	0	0	No	*	--	0	0.22	--	--
Butylbenzyl phthalate	Yes	n	8	0	0	0	No	*	--	190	190	--	--
2-chloronaphthalene	Yes	n	5	0	0	0	No	*	--	150	160	--	--
Chrysene	Yes	y	8	0	0	0	No	*	--	0	0.0018	--	--
Di-n-butyl phthalate	Yes	n	8	0	0	0	No	*	--	400	450	--	--
Dibenzo(a,h)anthracene	Yes	y	8	0	0	0	No	*	--	0	0.0018	--	--
3,3-Dichlorobenzidine	Yes	y	7	0	0	0	No	*	--	0	0.0028	--	--
Diethyl phthalate	Yes	n	8	0	0	0	No	*	--	3800	4400	--	--
Dimethyl phthalate	Yes	n	8	0	0	0	No	*	--	84000	110000	--	--
2,4-dinitrotoluene	Yes	y	8	0	0	0	No	*	--	0	0.34	--	--
1,2-diphenylhydrazine	Yes	y	--	--	--	--	Data	*	--	0	0.02	--	--
Fluoranthene	Yes	n	8	0	0	0	No	*	--	14	14	--	--
Fluorene	Yes	n	8	0	0	0	No	*	--	390	530	--	--
Hexachlorobenzene	Yes	n	8	0	0	0	No	*	--	0	0.000029	--	--
Hexachlorobutadiene	Yes	y	2	0	0	0	No	*	--	0	1.8	--	--
Hexachlorocyclopentadiene	Yes	n	3	0	0	0	No	*	--	30	110	--	--
Hexachloroethane	Yes	y	4	0	0	0	No	*	--	0	0.33	--	--
Indeno(1,2,3-cd)pyrene	Yes	y	8	0	0	0	No	*	--	0	0.0018	--	--
Isophorone	Yes	n	8	0	0	0	No	*	--	27	96	--	--
Nitrobenzene	Yes	n	8	0	0	0	No	*	--	14	69	--	--
N-nitrosodimethylamine	Yes	y	6	0	0	0	No	*	--	0	0.3	--	--
N-nitrosodi-n-propylamine	Yes	y	4	0	0	0	No	*	--	0	0.051	--	--
N-nitrosodiphenylamine	Yes	y	8	0	0	0	No	*	--	1	0.60	--	--
Pentachlorobenzene	Yes	n	6	0	0	0	No	*	--	0	0.15	--	--
Pyrene	Yes	n	8	0	0	0	No	*	--	290	400	--	--
1,2,4-trichlorobenzene	Yes	n	5	0	0	0	No	*	--	6	7	--	--
Tetrachlorobenzene,1,2,4,5	Yes	n	4	0	0	0	No	*	--	0	0.11	--	--
Table 3: Pesticides and PCBs													
Aldrin	Yes	y	8	0	0	0	No	*	--	0	0.0000050	--	--
BHC-Technical	No	y	--	--	--	--	--	*	--	0	0.0015	--	--
BHC-alpha	Yes	y	8	0	0	0	No	*	--	0	0.00049	--	--
BHC-beta	Yes	y	8	0	0	0	No	*	--	0	0.0017	--	--
BHC-gamma (Lindane)	Yes	n	8	0.00067	0.6	0.001272	No	*	--	0	0.18	--	--
Chlordane	Yes	y	8	0	0	0	No	*	--	0	0.000081	--	--
DDD 4,4'	Yes	y	8	0	0	0	No	*	--	0	0.000031	--	--
DDE 4,4'	Yes	y	8	0	0	0	No	*	--	0	0.000022	--	--
DDT 4,4'	Yes	y	8	0	0	0	No	*	--	0	0.000022	--	--
Dieldrin	Yes	y	8	0	0	0	No	*	--	0	0.0000054	--	--
Endosulfan alpha	Yes	n	7	0.013	0.6	0.026066	No	*	--	9	8.9	--	--
Endosulfan beta	Yes	n	8	0.00088	0.6	0.00167	No	*	--	9	8.9	--	--
Endosulfan Sulfate	Yes	n	8	0	0	0	No	*	--	9	8.9	--	--
Endrin	Yes	n	8	0	0	0	No	*	--	0	0.024	--	--
Endrin Aldehyde	Yes	n	8	0	0	0	No	*	--	0	0.030	--	--
Heptachlor	Yes	y	8	0	0	0	No	*	--	0	0.0000079	--	--
Heptachlor Epoxide	Yes	y	8	0	0	0	No	*	--	0	0.0000039	--	--
Methoxychlor	Yes	n	--	--	--	--	Data	*	--	100	na	--	--
Toxaphene	Yes	y	8	0	0	0	No	*	--	0	0.000028	--	--
Total PCBs (Sum of PCB Aroclors)	Yes	y	--	--	--	--	Data	*	--	0	0.0000064	--	--

Table3: Other parameters with state water quality criteria													
Barium (total recoverable)	TBD	n	--	--	--	--	--	*	--	1000	na	--	--
Manganese (total recoverable)	TBD	n	--	--	--	--	--	*	--	Withdrawn	100	--	--
2,4,5-TP [2-(2,4,5-Trichloro-phenoxy) propanoic acid]d	TBD	n	--	--	--	--	--	*	--	10	na	--	--
2,4-D (2,4-Dichlorophenoxy) acetic acid)	TBD	n	--	--	--	--	--	*	--	100	na	--	--
Dioxin 2,3,7,8-TCDD	TBD	y	--	--	--	--	--	*	--	0	5.1E-10	--	--
Nitrosamines	TBD	y	--	--	--	--	--	*	--	0	0.046	--	--
N-Nitrosodibutylamine	TBD	y	--	--	--	--	--	*	--	0	0.022	--	--
N-Nitrosodiethylamine	TBD	y	--	--	--	--	--	*	--	0	0.046	--	--
N-Nitrosopyrrolidine	TBD	y	--	--	--	--	--	*	--	0	3.4	--	--

RPA Run Information	
Facility Name:	Tryon Creek WWTP
DEQ File Number:	70735
EPA Identification #:	OR0026891
Permit Number:	101614
Prepared By:	Emma Prichard
Preparation Date:	9/25/2023
Facility Flow Rate (MGD):	8.3
Outfall Number:	1
Determination Date:	9/26/23

RPA Run Notes:

Color Key:	"*" = Enter data
Intermediate Calc.s	"--" = Will calculate
Calculation Results	

Facility Information				
1. Are there dilution #'s from mixing zone study? (Yes/No)				yes
2. Is the receiving waterbody fresh water? (Yes/No)				yes
3. If Question 1 = "No", then fill in the following table				
Eff. Flow Rate	MGD	N/A	Calculated dilution Factors	
Stream Flow: 7Q10	CFS	N/A	Dilution @ ZID	N/A
Stream Flow: 1Q10	CFS	N/A	Dilution @ MZ	N/A
% dilution at ZID	%	10%		
% dilution at MZ	%	25%		
4. If answered "Yes" to Question #1, then fill in dilution values	Dilution @ ZID (1Q10 from study)			22
	Dilution @ MZ (7Q10 from study)			235
5. Enter Water Hardness. Use average hardness during critical (usually low-flow period). Effluent default is 25 mg/L.	Effluent	$mg/L\ CaCO_3$		51.8
	Up-stream	$mg/L\ CaCO_3$		28.5
	ZID boundary	$mg/L\ CaCO_3$		30
	MZ boundary	$mg/L\ CaCO_3$		29
6. Please enter statistical Confidence and Probablity values (note: defaults already entered)	Confidence Level	%		99%
	Probability Basis	%		95%

		Identify Pollutants of Concern					Determine In-Stream Conc.			Det. Reasonable Potential			
Pollutant Parameter	Evaluation Required?	# of Sample	Highest Effluent Conc.	Coefficent of Variation	Est. Max Eff. Conc.	RP at end of pipe?	Ambient Conc.	Max Total Conc. @ ZID	Max Total Conc. @ RMZ	WQ Crit: 1 Hour (CMC)	WQ Crit: 4 Day (CCC)	Is there Reasonable Potential to Exceed? (Yes/No)	
	(Yes/No)		(µg/l)	Default=0.6	(µg/l)	(Yes/No)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	Acute	Chronic
Table 1 Effluent Parameters for all POTWs w/a Flow > 0.1 MGD													
Nitrates-Nitrite	Yes	Evaluation will occur with DO analysis											
Table 2 Effluent Parameters for Selected POTWs													
Hardness (Total as CaCO3)	Yes	Must be collected for metals criteria calculation. Submit data to the fields at the top of the spreadsheet											
Table 2: Metals (total recoverable), cyanide and total phenols									Use total recoverable data as surrogate.	no			
Arsenic (total recoverable)	Yes	8	0.513	0.6	--	No Aquatic Water Quality Criteria							
Arsenic (total inorganic)	Yes	3	0.213	0.6	--	No Aquatic Water Quality Criteria							
Arsenic (dissolved inorganic)	Yes	3	0.217	0.6	0.836115	No	*	--	--	340.00	150.00	--	--
Cadmium (total recoverable)	Yes	8	0	0	0	No	*	--	--	0.99	--	--	--
Cadmium (dissolved)	Yes	3	0	0	0	No	*	--	--	0.58	0.11	--	--
Chromium (total recoverable)	Yes	8	0.459	0.6	--	No Aquatic Water Quality Criteria							
Chromium III (dissolved)	Yes	--	--	--	--	Data	*	--	--	664.51	30.91	--	--
Chromium VI (dissolved)	Yes	--	--	--	--	Data	*	--	--	16.00	11.00	--	--
Copper (total recoverable)	Yes	32	9.24	0.32622324	--	No Aquatic Water Quality Criteria							
Copper (dissolved)	Yes	14	8.09	0.374644368	11.89185	No	*	--	--	See BLM	See BLM	--	--
Iron (total recoverable)	Yes	8	138	0.6	314.9264	No	*	--	--	--	1000.00	--	--
Lead (total recoverable)	Yes	8	0.231	0.6	--	No Aquatic Water Quality Criteria							
Lead (dissolved)	Yes	3	0.471	0.6	1.814793	Yes	0.128	0.204672	0.135177843	17.30	0.65	NO	NO
Mercury (total)	Yes	10	0.00377	0.615475707	0.007923	No	*	--	--	2.40	0.01	--	--
Nickel (total recoverable)	Yes	8	1.53	0.6	--	No Aquatic Water Quality Criteria							
Nickel (dissolved)	Yes	3	1.43	0.6	5.509882	No	*	--	--	167.32	18.09	--	--
Selenium (total recoverable)	Yes	8	0	0	--	No Aquatic Water Quality Criteria							
Selenium (dissolved)	Yes	3	0	0	0	No	*	--	--	13.00	4.60	--	--
Silver (total recoverable)	Yes	8	0.12	0.6	--	No Aquatic Water Quality Criteria							
Silver (dissolved)	Yes	3	0	0	0	No	*	--	--	0.47	0.10	--	--
Zinc (total recoverable)	Yes	8	53.8	0.6	--	No Aquatic Water Quality Criteria							
Zinc (dissolved)	Yes	3	91	0.6	350.6288	Yes	1.64	17.50313	3.125058888	42.66	41.48	NO	NO
Cyanide (total)	Yes	8	11.3	0.6	--	No Aquatic Water Quality Criteria							
Cyanide (free)	Yes	2	13.7	0.6	69.41657	Yes	0	3.155299	0.295389672	22.00	5.20	NO	NO
Total phenolic compounds	Yes	No Aquatic Water Quality Criteria											
Table 2: Volatile organic compounds													
Table 2: Acid-extractable compounds													

Pentachlorophenol	Yes	6	0	0	0	No	*	--	--	pH Data	pH Data	--	--
Table 2: Base-neutral compounds													
Table 3: Pesticides and PCBs													
Aldrin	Yes	8	0	0	0	No	*	--	--	3.00	na	--	--
BHC-gamma (Lindane)	Yes	8	0.00067	0.6	0.001529	No	*	--	--	0.95	0.08	--	--
Chlordane	Yes	8	0	0	0	No	*	--	--	2.40	0.00	--	--
Chloropyrifos	Yes	--	--	--	--	Data	*	--	--	0.08	0.04	--	--
Demeton	Yes	--	--	--	--	Data	*	--	--	na	0.10	--	--
DDT 4,4'	Yes	8	0	0	0	No	*	--	--	1.10	0.00	--	--
Dieldrin	Yes	8	0	0	0	No	*	--	--	0.24	0.06	--	--
Endosulfan alpha	Yes	7	0.013	0.6	0.031566	No	*	--	--	0.22	0.06	--	--
Endosulfan beta	Yes	8	0.00088	0.6	0.002008	No	*	--	--	0.22	0.06	--	--
Endosulfan	Yes	--	--	--	--	Data	*	--	--	0.22	0.06	--	--
Endrin	Yes	8	0	0	0	No	*	--	--	0.09	0.04	--	--
Guthion	Yes	--	--	--	--	Data	*	--	--	na	0.01	--	--
Heptachlor	Yes	8	0	0	0	No	*	--	--	0.52	0.00	--	--
Heptachlor Epoxide	Yes	8	0	0	0	No	*	--	--	0.52	0.00	--	--
Malathion	Yes	--	--	--	--	Data	*	--	--	na	0.10	--	--
Methoxychlor	Yes	--	--	--	--	Data	*	--	--	na	0.03	--	--
Mirex	Yes	--	--	--	--	Data	*	--	--	na	0.00	--	--
Parathion	Yes	--	--	--	--	Data	*	--	--	0.07	0.01	--	--
Toxaphene	Yes	8	0	0	0	No	*	--	--	0.73	0.00	--	--
Total PCBs (Sum of PCB	Yes	--	--	--	--	Data	*	--	--	2.00	0.01	--	--
Table3: Other parameters with state water quality criteria													
Hydrogen Sulfide (dissolved as S)	TBD	--	--	--	--	--	*	--	--	na	2.00	--	--
Phosphorus, Elemental	TBD	--	--	--	--	--	*	--	--	na	na	--	--
tributyltin (TBT)	TBD	--	--	--	--	--	*	--	--	0.46	0.06	--	--

Appendix C: Cyanide Memo

State of Oregon
DEQ Department of Environmental Quality

Memorandum

To: WQ Permit File, 101614 Tryon Creek

From: Emma Prichard, NPDES Permit Writer

Reviewed By: Aliana Britson, Rob Burkhart, Travis Pritchard

Date: 10/10/2023

Subject: Willamette River assessment unit OR_SR_1709001201_88_104019 listing for Cyanide-Aquatic Life Based on Unknown Monitoring Locations

The Willamette River assessment unit OR_SR_1709001201_88_104019 is listed in the 2022 Integrated Report as impaired for Cyanide – Aquatic Life. This assessment unit was added to the 303(d) list by the EPA in the 2010 Integrated Report, which listed the Willamette River between river miles 0 to 24.8 for cyanide with the following comment: "EPA addition to 303(d) list 12/14/2012: Seventy-five exceedances from samples collected at Portland Harbor Clean up site studies between 4/27/04 and 10/8/07. Data in Storet.". Tryon Creek WWTP discharges at river mile 20.03, upstream of Portland Harbor. In the 2018/2020 Integrated Report, the Willamette River between river miles 0 to 24.8 has been split into multiple assessment units. Assessment Units: OR_SR_1709001202_88_104175 reaches from the confluence with the Columbia to the confluence with Johnson Creek. OR_SR_1709001201_88_104019 is the assessment unit where Tryon Creek's discharge is located and reaches from the confluence with Johnson Creek to just downstream of the confluence with the Clackamas River.

There is only one monitoring station with cyanide data in OR_SR_1709001201_88_104019: BES_PDX-WRUS, which is the upstream ambient monitoring station for Tryon Creek WWTP. There have been 5 samples for total cyanide at this location which were all non-detect. 4 of these samples were provided by BES in October 2023 and were outside the 2022 Integrate Report data window.

Sample ID	Location Code	Sample End Date/Time	Analyte	Text Result	Units	MDL	MRL	Qualifiers
W21E032-01	WRUS	05/04/2021 10:50	Cyanide	<0.0050	mg/L	0.0050	0.0050	
W21I237-01	WRUS	09/23/2021 10:45	Cyanide, Total	<0.0005	mg/L	0.0005	0.02	U
W21K016-01	WRUS	11/02/2021 09:54	Cyanide	<0.0050	mg/L	0.0050	0.0050	
W22B028-01	WRUS	02/02/2022 11:46	Cyanide	<0.0050	mg/L	0.0050	0.0050	

In the 2018/2020 Integrated Report, the old Integrated Report segments were "crosswalked" into the newer Integrated Report assessment units. When the list mentioned specific monitoring location information that included latitude and longitude, the assessment team used the coordinates to carry forward the previous list to the new assessment units. The Portland Harbor cleanup monitoring

State of Oregon
DEQ Department of Environmental Quality

Memorandum

locations did not have specific latitude and longitudes, and therefore the assessment team performed a "spatial crosswalk". For the "spatial crosswalk" the previous list impairments were carried forward to all overlapping assessment units. In the case of 104019, since there was no specific latitude and longitudes associated with the cyanide data, the cyanide impairment went to both assessment units (104019 and 104175). **Since the data in the original listing was only from Portland Harbor, including the cyanide listing for 104019 was an error. Assessment unit OR_SR_1709001201_88_104019 is expected to be delisted for Cyanide-Aquatic Life in the 2024 Integrated Report.**

Because this assessment unit is expected to be delisted for Cyanide-Aquatic Life in the 2024 cycle, this Assessment Unit will not be considered water quality limited for cyanide for NPDES permitting purposes.