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
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October 24, 2024

Mouhamad Zaher
City of St. Helens
265 Strand Street
Saint Helens, OR 97051-2039

CERTIFIED MAIL NO. 7022 1670 0003 2762 5703
RETURN RECEIPT REQUESTED

RE: Issuance of NPDES Permit no. 101173
File no. 84069
EPA no. OR0020834
Facility: City of St. Helens Wastewater Treatment Plant, 451 Plymouth St., St. Helens
Columbia County

Your National Pollutant Disposal Elimination System Permit has been renewed and is enclosed. This permit is DEQ's final action on permit renewal application no. 974206. DEQ received comments during the public notice period and virtual hearing. Changes made to the permit based on public comment are addressed in the response to comments memorandum included with your permit.

Your permit is effective on December 1, 2024. Please read your permit carefully. Compliance with your permit is required at all times.

If you are dissatisfied with the conditions of this permit, you have 20 days to request a hearing before the Environmental Quality Commission or its authorized representative. A request for a hearing must be made in writing and state the grounds for the request. Any hearing will be conducted as a contested case hearing in accordance with ORS 183.413 through 183.470 and OAR chapter 340, division 011. If a hearing is requested, the existing permit continues in effect until a final order is issued.

Please note that your treatment system will need to be supervised by an operator with at least a Grade II Operator Certificate and that your required operator certification levels are no longer listed on the face page of your permit. Pursuant to OAR chapter 340, division 049 your systems are classified as follows:

- Collection System: Class II
- Treatment System: Class II

If changes are made to your systems or if you have additional questions about operator certification requirements, please contact the DEQ Operator Certification program at opcert@deq.state.or.us , call 503-229-5349, or visit the website: https://www.oregon.gov/deq/wq/wqpermits/Pages/Wastewater-Operator-Certification.aspx. Current classifications for all systems requiring certified operators may be found at https://www.deq.state.or.us/wq/opcert/Docs/OpcertReport.pdf.

If you are interested in upgrading your wastewater treatment infrastructure or need assistance with treatment system design, DEQ's Clean Water State Revolving Fund offers below-market rate loans for qualified applicants to finance the planning, design and construction of water quality improvement projects. DEQ updates interest rates are updated quarterly, and rates vary by loan term, type of loan and community economic conditions. DEQ works with borrowers to ensure access to the best rates available at the time of loan signature. To learn more about eligible water quality projects and application process, please visit the Clean Water State Revolving Fund website at https://www.oregon.gov/deq/wq/cwsrf/Pages/default.aspx or call 503-229-LOAN.

If you have any questions about your permit requirements, please contact Mike Pinney at 503-229-5310 or mike.pinney@deq.oregon.gov.

Sincerely,

Tiffany Yelton-Bram
Water Quality Manager
Northwest Region

TYB:th
Enclosure: Permit, Permit Fact Sheet, and Response to Comments
ec: Regional File, Portland DEQ
Mike Pinney, Portland, DEQ
Jeff Linzer, Water Quality Division, DEQ
Rick Scholl, Mayor, City of St. Helens
Aaron Kunders, City of St. Helens
WQ Data Crew, DEQ w/permit
EPA, Seattle /permit
ORMS
DEQ Wastewater Operator Certification Program

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 St. Helens
265 Strand Street
St. Helens, Oregon, 97051

SOURCES COVERED BY THIS PERMIT:

Type of Waste	Outfall Number	Outfall Location
Domestic Wastewater	001	45.854812, -122.789140
Domestic Wastewater	007	45.856253, -122.797316

FACILITY LOCATION:

City of St. Helens WWTP
451 Plymouth Street
St. Helens, Oregon, 97051

County: Columbia
EPA Permit Type: Major

RECEIVING STREAM INFORMATION:

Receiving Stream/NHD name: Main Stem Columbia River
USGS 12-Digit HUC: 170800030900
OWRD Administrative Basin: Lower Columbia
NHD Reach Code and % along reach: 17080003039206 50.64%
ORDEQ LLID & RM: 1240483462464 RM-86.9
Integrated Report AU ID: OR_SR_1708000302_88_100669

Issued in response to Application No. 974206 received July 27, 2007. This permit is issued based on the land use findings in the permit record.

Tiffany Yelton-Bram
Water Quality Manager
Northwest Region

October 24, 2024
Issuance Date

December 1, 2024
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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LIST OF TABLES

SCHEDULE A: WASTE DISCHARGE LIMITS

1. Outfall 001 and 007 – 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	mg/L	45	65	-
	lb/day	3,500	5,300	7,000
	% removal	65	-	-
TSS	mg/L	50	75	-
	lb/day	3,900	5,900	7,800
	% removal	65	-	-
pH (Interim) (See note a.)	SU	Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 9.0		
pH (Final) (See note a.)	SU	Instantaneous limit between a daily minimum of 7.0 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		
Thermal Load (June 1 – September 30) (See note c.)	million kcal/day	1,370 as a monthly average		

Notes:

a. The interim pH limits are effective upon permit effective date. The final pH 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 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 monthly average Thermal Load discharged must be calculated as directed in note e of Table B3.

2. Regulatory Mixing Zone

Pursuant to OAR 340-041-0053, the permittee is granted a regulatory mixing zone for Outfall 001 as described below:

> *The allowable mixing zone is that portion of the Columbia River within a band extending 400 feet upstream and 400 feet downstream of the diffuser, and 100 feet off each end of the diffuser. The Zone of Immediate Dilution (ZID) is that portion of the Columbia River within 40 feet of any part of the diffuser between and including the end-most discharge ports.*

Pursuant to OAR 340-041-0053, the permittee is granted a regulatory mixing zone for Outfall 007 as described below:

The allowable mixing zone is that portion of Multnomah Channel within a radius of 100 ft from the end of the discharge pipe. A Zone of Immediate Dilution (ZID) is that portion of the Multnomah Channel within a 10-foot radius from the end of the discharge pipe.

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

b. 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.

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

d. 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.

e. 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

f. 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 01/15/2026	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
Pretreatment Report	Annually	March 31	1 electronic copy and 1 hard copy in a DEQ approved format	• 1 Hard copy to DEQ Pretreatment Coordinator • 1 Electronic copy to Compliance Officer
Table B5: Copper Biotic Ligand Model and Aluminum Sampling Requirements	Monthly, starting January 2027 until 24 samples are collected	By the 15th of the following month	Electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ
Tables B6 – B10: Effluent Toxics Characterization	Quarterly beginning January 2026 until 12 samples are collected (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 B11: WET Test Monitoring	Every 3rd quarter beginning January 2026 until at least 4 samples are collected (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

Reporting Requirement	Frequency	Due Date (See note a.)	Report Form (See note b.)	Submit To:
Mixing Zone Study (see Schedule D)	One time	Submit by 12/15/2027	Electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ
Wastewater solids annual report (see Schedule D)	Annually (If Biosolids Plan not developed and approved)	By February 19 of the following year	Electronic copy in the DEQ-approved format	Attached via electronic reporting as directed by DEQ Electronic copy to DEQ Biosolids Program Coordinator
Biosolids annual report (see Schedule D)	Annually (If Biosolids Management Plan developed and approved)	By February 19 of the following year	Electronic copy in the DEQ-approved form	Attached via electronic reporting as DEQ directs DEQ Biosolids Program Coordinator
Sludge Depth Survey Report (see Schedule D – Lagoon Solids)	One Time	Submit by 01/15/2026	Electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ
Outfall Inspection Report (see Schedule D)	Once per permit cycle	Submit by 01/15/2027	Electronic copy in a DEQ-approved format	Attached via electronic reporting as directed by DEQ
Lagoon Leak Test (see Schedule D)	Once per permit cycle	Submit by 01/15/2027	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. WET tests are to be conducted on a rolling 3 quarter period so after 4 years a WET test will have been completed in each quarter. 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 the DEQ permitting website.

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, bacteriological analytes, 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:

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 "<0.02 lb/day" for mass load on the DMR (1.0 µg/L x 2 MGD x conversion factor = 0.017 lb/day, round off to 0.02 lb/day).

iii. When concentration data are above the DL, but below the QL: To calculate the mass load from this result, use the detection level. Report the mass load as the calculated mass load preceded by "e". For example, if flow is 2 MGD and the reported sample result is e1.0 µg/L, report "e0.02 lb/day" for mass load on the DMR (1.0 µg/L x 2 MGD x conversion factor = 0.017 lb/day, round off to 0.02 lb/day).

3. Monitoring and Reporting Requirements

a. The permittee must monitor influent at domestic influent flume and the industrial influent flume, and report results in accordance with 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) (See note c.)	MGD	Year-round	Daily	Metered	1. Monthly Average 2. Daily Maximum
BOD_5 (00310) (See note d.)	mg/L	Year-round	3/week	24-hour composite	Monthly Average
TSS (00530) (See note d.)	mg/L	Year-round	3/week	24-hour composite	Monthly Average
pH (00400) (See note e.)	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.

c. Report total flow for both headworks. Samples taken on the same day.

d. Report as a flow weighted average of both headworks. Samples taken on the same day.

e. Applies to the domestic headworks only.

b. The permittee must monitor Outfall 001 and 007 effluent at the discharge pipe from the aerated stabilization basin 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 (81010) (See note c.)	%	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

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type/ Required Action (See note a.)	Report Statistic (See note b.)
pH (00400)	SU	Year-round	Daily	Grab	1. Daily Maximum 2. Daily Minimum
Chlorine, Total Residual (50060)	mg/L	Year-round	1/month	Grab	1. Daily Maximum 2. Monthly Average
Temperature (00010)	ºC	Year-round	Daily	Continuous (See note d.)	1. Daily Maximum 2. Daily Average 3. Monthly Average 4. 7-day Rolling Average of Daily Maximum
Thermal Load Discharge (00015)	Million kcal/day	Jun 1 – Sep 30	Daily	Calculation (See note e.)	1. Daily Maximum 2. Monthly 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	1/month	Scale reading	1. Daily Maximum 2. Monthly Average
Dissolved Oxygen (00300)	mg/L	Third year of permit cycle [2027]	Quarterly	24-hour composite (See note f.)	Quarterly Minimum
Total Kjeldahl Nitrogen (TKN) (00625)	mg/L	Third year of permit cycle [2027]	Quarterly	24-hour composite	Quarterly Maximum
Nitrate (NO_3) Plus Nitrite (NO_2) Nitrogen (00630)	mg/L	Third year of permit cycle [2027]	Quarterly	24-hour composite	Quarterly Maximum
Oil and Grease (00556)	mg/L	Third year of permit cycle [2027]	Quarterly	Grab	Quarterly Maximum
Total Phosphorus (00665)	mg/L	Third year of permit cycle [2027]	Quarterly	24-hour composite	Quarterly Maximum
Total Dissolved Solids (70295)	mg/L	Third year of permit cycle [2027]	Quarterly	24-hour composite	Quarterly Maximum

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type/ Required Action (See note a.)	Report Statistic (See note b.)

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 perform grab measurements 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. When determining the daily maximum temperature, the permittee may report the hourly average maximum temperature if continuous monitoring of temperature is performed at less than hourly intervals.

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

The monthly average is then calculated from the daily TLs.

The daily TL is calculated as follows:

TL= 3.78 * Qe *Te

Where:

TL = Daily Thermal Load (million kcal/day)

Qe = Daily Average Effluent Flow (MGD)

Te = Daily Average Effluent Temperature (°C)

f. 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.

4. Pretreatment Monitoring

The permittee must monitor influent, effluent, and biosolids according to the table below and report the results as specified in Schedule E-8.a.

Table B4: Pretreatment Monitoring

Pollutant (See notes a & b.)	CAS (See note c.)	Minimum Frequency	Sample Type	Report
Arsenic	7440382	Quarterly, on 3 consecutive days between Monday and Friday, inclusive.	24-hour composite for influent and effluent samples (See note e.)	Daily values
Cadmium	7440439			
Chromium	7440473			
Copper	7440508			
Lead	7439921			
Mercury	7439976			
Molybdenum	7439987			
Nickel	7440020			
Selenium	7782492			
Silver	7440224			
Zinc	7440666			
Cyanide (Total and Free)	57125			
Biosolids (See note d.)	N/A	Quarterly	Grab	Daily values

Notes:

a. The permittee must analyze all metals for total concentration unless otherwise specified by DEQ in writing.

b. 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.

c. Chemical Abstract Service.

d. Biosolids sampling and analysis must be performed per 40 CFR 503.

e. Permittee must sample effluent after dechlorination and prior to discharge to receiving waters. Biosolids sampling must occur after dewatering and be representative of the facility's biosolids that are delivered to customers.

5. Copper Biotic Ligand Model and Aluminum Parameters

The permittee must monitor the Columbia River upstream of Outfall 001 and the effluent for Outfall 001 for copper biotic ligand model parameters per Table B5 below. Samples must be collected monthly for a period of 24 months beginning in January of the third year of the permit cycle (January 2027). 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 a.)	CAS (See note b.)	Units	Sampling Frequency	Sampling Location (See note c.)
Copper, total and dissolved	7440097	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 (See note d.)	–	S.U.	1/month	Upstream and Effluent
Temperature	–	°C	1/month	Upstream and Effluent
Calcium, dissolved (See note e.)	7440702	mg/L	1/month	Upstream and Effluent
Magnesium, dissolved (See note e.)	7439954	mg/L	1/month	Upstream and Effluent
Sodium, dissolved (See note e.)	7440235	mg/L	1/month	Upstream and Effluent
Potassium, dissolved (See note e.)	7440097	mg/L	1/month	Upstream and Effluent
Sulfate, dissolved (See note e.)	14808798	mg/L	1/month	Upstream and Effluent
Chloride, dissolved (See note e.)	16887006	mg/L	1/month	Upstream and Effluent
Alkalinity, dissolved (See note e.)	–	mg/L	1/month	Upstream and Effluent

Notes:

a. 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.

b. Chemical Abstract Service.

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

d. Ambient pH measurements in receiving waters where specific conductivity < 200 uS/cm may require additional sampling practices to achieve accurate measurement. Refer to USGS (2021) "Measurement of pH In Techniques and Methods (Vol. 9)" or another 40 CFR 136 approved method for measuring pH in low ionic strength solutions. The permittee must account for low ionic strength when sampling ambient pH.

e. These analytes may be calculated from specific conductance measurements according to equations outlined in OAR 340-041-8033 Endnote N(1)(b). Specific conductance data may be used as a substitute for monitoring and analysis of these parameters only if it is concurrent with other BLM input parameters. If neither the analytes nor concurrent specific conductance is measured, regional defaults will be used in data analysis according to OAR 340-041-8033 Endnote N(2)(a).

6. 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 at the discharge pipe from the aerated stabilization basin on the dates in Table B1.

Samples must be 24-hour composites, except as noted in the tables below for volatile organic compounds. Sample results must be submitted to DEQ using approved electronic format.

Table B6: Metals and Hardness
(µg/L unless otherwise specified)

Pollutant (See note a.)	**CAS** (See note b.)	**Pollutant** (See note a.)	**CAS** (See note b.)
Antimony, total	7440360	Lead, dissolved	7439921
Arsenic, total inorganic	7440382	Nickel, dissolved	7440020
Arsenic, total inorganic dissolved	7440382	Selenium, dissolved	7782492
Cadmium, dissolved	7440439	Silver, dissolved	7440224
Chromium, dissolved	7440473	Thallium, total	7440280
Chromium III, total and dissolved (See note c.)	16065831	Zinc, dissolved	7440666
Chromium VI, dissolved	18540299	Hardness (total as $CaCO_3$)	
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 is no analytical method to test for Chromium III, results are obtained by subtracting Chromium VI from Chromium.

Table B7: Volatile Organic Compounds
(µg/L unless otherwise specified)

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. The permittee may collect a single sample over the operating day.
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 should 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
(µg/L unless otherwise specified)

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
(µg/L unless otherwise specified)

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		

Pollutant	CAS	Pollutant	CAS

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), should be analyzed as an estimate of this chemical.

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

Table B10: Pesticides and PCBs
(µg/L unless otherwise specified)

Pollutant	CAS	Pollutant	CAS
Aldrin	309002	Endrin Aldehyde	7421934
BHC Technical (Hexachlorocylco-hexane) (See note a.)	608731	Guthion (See note b.)	86500
BHC-alpha (See note a.)	319846	Heptachlor	76448
BHC-beta (See note a.)	319857	Heptachlor Epoxide	1024573
BHC-delta (See note a.)	319868	Malathion	121755
BHC-gamma (Lindane) (See note a.)	58899	Methoxychlor	72435
Chlordane	57749	Mirex	2385855
Chloropyrifos (See note b.)	2921882	Parathion (See note b.)	56382
Demeton	8065483	Toxaphene	8001352
DDD 4,4'	72548	PCB- Aroclor 1254	11097691
DDE 4,4'	72559	PCB- Aroclor 1232	11141165
DDT 4,4'	50293	PCB- Aroclor 1260	11096825
Dieldrin	60571	PCB- Aroclor 1242	53469219
Endosulfan alpha (See note c.)	959988	PCB- Aroclor 1221	11104282
Endosulfan beta (See note d.)	33213659	PCB- Aroclor 1248	12672296
Endosulfan sulfate	1031078	PCB- Aroclor 1016	12674112
Endrin	72208		

Notes:

a. There is no analytical method for Technical BHC. Instead, the four major isomers (alpha, beta, delta, and gamma) must be separately analyzed and then added together to compare to the BHC Technical criteria.

b. Analytical Methods: Chloropyrifos use EPA 625.1 or 608.3; Parathion and Guthion use EPA 614, 622 or 625.1. Parathion is listed as ethyl parathion in 40 CFR 136. Guthion is identified in 40 CFR 136.3, Table 1D as Azinphos methyl.

c. Endosulfan alpha is identified as Endosulfan I in 40 CFR 136.3, Table 1D.

d. Endosulfan beta is identified as Endosulfan II in 40 CFR 136.3, Table 1D.

7. 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 Schedule B6) results.

8. 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 for Outfall 001 must be collected at the location specified below.

Table B11: WET Test Monitoring

Parameter	Sample Type/Location	Minimum Frequency	Report
Acute toxicity	For acute toxicity: 24-hr composite, at the discharge pipe from the aerated stabilization basin	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, at the discharge pipe from the aerated stabilization basin		

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 02/28/2025	The permittee must submit to DEQ a detailed project implementation plan with milestones to meet the new pH limit.
By 03/31/2026	The permittee must submit to DEQ a written progress report outlining the status of the new pH adjustment technology as well as progress made towards achieving final effluent limits.
By 12/31/2026	The permittee must achieve compliance with the final effluent limits for pH 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. Mixing Zone Study

By no later than the date in Table B1, permittee must submit a leve1 2 mixing zone study for Outfall 001 and a level 1 study for Outfall 007. The Level 1 and 2 mixing zone study requirements are described in DEQ's Mixing Zone Internal Management Directive.

3. 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.

4. Recycled Water Use Plan

In order to distribute recycled water, the permittee must develop and maintain a DEQ-approved Recycled Water Use Plan meeting the requirements in OAR 340-055-0025. The permittee must submit this plan or any significant modifications to DEQ for review and approval with sufficient time to clear DEQ review and a public notice period prior to distribution of recycled water. The permittee is prohibited from distributing recycled water prior to receipt of written approval of its Recycled Water Use Plan from DEQ. The permittee must keep the plan updated. All plan revisions require written authorization from DEQ and are effective upon permittee's receipt of DEQ written approval. No significant modifications can be made to a plan for an administratively extended permit (after the permit expiration date). Conditions in the plan are enforceable requirements under this permit. DEQ will provide an opportunity for public review and comment on any significant plan modifications prior to approving or denying. Public review is not required for minor modifications, changes to utilization dates or changes in use within the recycled water class.

a. Recycled Water Annual Report – If the permittee distributes recycled water under a recycled water use plan, the permittee must submit a recycled water annual report by the date specified in Table B1: Reporting Requirements and Due Dates. The permittee must use the DEQ-approved recycled water annual report form. This report must include the monitoring data and analytical laboratory reports for the previous year's monitoring required under Schedule B.

5. 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.

6. 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 the 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.

7. Biosolids Management Plan

Prior to distributing biosolids to the public, the permittee must develop and maintain a Biosolids Management Plan and Land Application Plan meeting the requirements in OAR 340-050-0031. The permittee must submit these plans and any significant modification of these plans to DEQ for review and approval with sufficient time to clear DEQ review and a public notice period prior to removing biosolids from the facility. The permittee must keep the plans updated. All plan revisions require written authorization from DEQ and are effective upon permittee's receipt of DEQ written approval. No significant modifications can be made to a plan for an administratively extended permit (after the permit expiration date). Conditions in the plans are enforceable requirements under this permit.

8. 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.

9. Lagoon Solids

By the date listed in Table B1, the permittee must submit to DEQ a sludge depth survey and report. The report must include the sludge depths throughout the lagoons and an evaluation of the impact of sludge on treatment efficiency and odors. If the evaluation finds that the sludge is impacting the treatment efficiency and causing odors, the permittee must submit a plan to reduce or remove the sludge. See Schedule D, conditions 7, 8 and 9, for sludge removal requirements.

10. 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%; 52.25%; 4.5%; 2.25% 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 4.5% effluent reported as the NOEC < 4.5% 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; 50.2%; 0.4%; 0.2%; and 0.13% 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 ≤ 0.4%.

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: 0.4%, 2.5%, 4.5%, 50%, and 100% effluent.

iv. Toxicity determinations for dual end-point tests must correspond to the acute and chronic tests described in conditions 10.b.v and 10.c.v above.

e. Sampling Requirements

At the time of WET sampling, the permittee must collect and analyze effluent samples for Tables B6 – B10.

f. Evaluation of Causes and Exceedances

i. If any test exhibits toxicity as described in conditions 10.b.v. and 10.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 10.b.v. and 10.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.

11. 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 the 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 the DEQ Operator Certification Program. Current system classifications are publicized on the DEQ Supervisory Wastewater Operator Status Report found on the 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 the 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.

12. Outfall Inspection

The permittee must inspect Outfalls 001 and 007 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.

13. Lagoon Leak Test

The permittee must perform a lagoon leak test and submit the results by the date specified in Table B1. The lagoon leak test must confirm the lagoon leak rate. The lagoon leak test must be conducted in accordance with DEQ's *Guidelines for Estimating Leakage from Existing Sewage Lagoons*. For lagoons that are unable to demonstrate a leak test rate less than ¼ inch per day, a Preliminary Groundwater Assessment must be conducted and submitted to DEQ in writing. The Preliminary Groundwater Assessment must be conducted in accordance with DEQ's *Preliminary Groundwater Assessment Guidelines*.

SCHEDULE E: PRETREATMENT ACTIVITIES

1. Program Administration

The permittee must conduct and enforce its Pretreatment Program, as approved by DEQ, and comply with the most current General Pretreatment Regulations (40 CFR 403). The permittee must secure and maintain sufficient resources and qualified personnel to carry out the program implementation procedures described in this permit as required by 40 CFR 403.8(f)(3).

2. Legal Authorities

The permittee must adopt all legal authority necessary to fully implement its approved pretreatment program and to comply with all applicable state and federal pretreatment regulations. The permittee must also establish, where necessary, contracts or agreements with contributing jurisdictions to ensure compliance with pretreatment requirements by industrial users within these jurisdictions. These contracts or agreements must identify the agency responsible for all implementation and enforcement activities to be performed in the contributing jurisdictions. Regardless of jurisdictional situation, the permittee is responsible for ensuring that all aspects of the pretreatment program are fully implemented and enforced.

3. Industrial User Survey

The permittee must update its inventory of industrial users at a frequency and diligence adequate to ensure proper identification of industrial users subject to the POTW pretreatment program, but no less than once per calendar year. The permittee must notify these industrial users of applicable pretreatment standards in accordance with 40 CFR 403.8(f)(2)(iii). Survey update procedures must ensure that Industrial Users potentially subject to pretreatment are identified and issued a control mechanism, if required, on a timely basis but no later than 6 months after receipt of information indicating the IU is subject to pretreatment.

4. National Pretreatment Standards

The permittee must enforce categorical pretreatment standards promulgated pursuant to section 307(b) and (c) of the Federal Clean Water Act, prohibited discharge standards as set forth in 40 CFR 403.5(a) and (b), or local limits developed by the permittee in accordance with 40 CFR 403.5(c), whichever are more stringent, or are applicable to any non-domestic source regulated under section 307(b), (c), or (d) of the Act.

5. Local Limits

The permittee, in consultation with DEQ, must perform a technical evaluation of the local limits and update these local limits if necessary. The permittee must submit those findings as a report to DEQ within 18 months after permit re-issuance unless DEQ authorizes or requires, in writing, an alternate time frame. Locally derived discharge limits must be defined as pretreatment standards under section 307(d) of the Act and must conform to 40 CFR 403.5(c) and 403.8(f)(4). Technically based local limits must be developed in accordance with the procedures established by DEQ and the EPA's Local Limits Guidance.

6. Control Mechanisms

The permittee must issue an individual control mechanism to all Significant Industrial Users except where the permittee may, at its discretion, issue a general control mechanism as defined by 40 CFR 403.8(f)(1)(iii); or certification in lieu of a control mechanism for Non-Significant Categorical Industrial Users (NSCIUs) as defined by 40 CFR 403.3(v)(2), and Non-Discharging Categorical Industrial Users (NDCIUs). All individual and general control mechanisms must be enforceable and contain, at a minimum, the requirements identified in 40 CFR 403.8(f)(1)(iii)(B); and may contain equivalent concentration and mass based effluent limits where appropriate under 40 CFR 403.6(c)(5) and (6). Unless a more stringent definition has been adopted by the permittee, the definition of Significant Industrial User must be as stated in 40 CFR 403.3(v).

7. Hauled Waste Control Plan

The permittee may accept hauled wastes at discharge points designated by the POTW after receiving written DEQ-approval of a Hauled Waste Control Plan. Hauled wastes may include wastewater solids from another wastewater treatment facility, septage, grease trap wastes, portable and chemical toilet wastes, landfill leachate, groundwater remediation wastewaters and commercial/industrial wastewaters.

8. Pretreatment Monitoring

a. POTW's Treatment Plant Monitoring

POTW Monitoring requirements (Schedule B - Table B5): The permittee must monitor its influent, effluent, and biosolids for pollutants expected from non-domestic sources. Influent, effluent, and sludge samples must be tested for the priority pollutant metals on quarterly basis throughout the term of this permit as specified in Schedule B of the permit.

The permittee must sample POTW influent and effluent on a day when industrial discharges are occurring at normal to maximum levels. All reported test data for metals must represent the total amount of the constituent present. The permittee must include a summary of monitoring results in the Annual Pretreatment Report. The monitoring data collected in this manner must be used for re-evaluation of the POTWs local limits when sufficient data becomes available.

b. Industrial User Sampling and Inspection

The permittee must randomly sample and analyze the effluent from Industrial Users at a frequency commensurate with the character, consistency, and volume of the discharge and conduct surveillance activities in order to identify, independent of information supplied by Industrial Users, occasional and continuing noncompliance with Pretreatment Standards. The permittee must conduct a complete facility inspection; and sample the effluent from each Significant Industrial User at least once a year at a minimum, unless otherwise specified below:

i. Where the permittee has authorized the Industrial User subject to a categorical Pretreatment Standard to forego sampling of a pollutant regulated by a categorical Pretreatment Standard in accordance with 40 CFR 403.12(e)(2), the permittee must sample for the waived pollutant(s) at least once during the term of the Categorical Industrial User's control mechanism. In the event that the permittee subsequently determines that a waived pollutant is present or is expected to be present in the Industrial User's wastewater based on changes that occur in the User's operations, the permittee must immediately begin at least annual effluent monitoring of the User's Discharge and inspection.

ii. Where the permittee has determined that an Industrial User meets the criteria for classification as a Non-Significant Categorical Industrial User, the permittee must evaluate, at least once per year, whether an Industrial User continues to meet the criteria in 40 CFR 403.3(v)(2).

iii. In the case of Industrial Users subject to reduced reporting requirements under 40 CFR 403.12(e)(3), the permittee must randomly sample and analyze the effluent from Industrial Users and conduct inspections at least once every two years. If the Industrial User no longer meets the conditions for reduced reporting in 40 CFR 403.12(e)(3), the permittee must immediately begin sampling and inspecting the Industrial User at least once a year.

c. Industrial User Self Monitoring and Other Reports

The permittee must receive and analyze self-monitoring and other reports submitted by industrial users as required by 40 CFR 403.8(f)(2)(iv) and 403.12(b),(d),(e),(g) and (h). Significant Industrial User reports must include Best Management Practice (BMP) compliance information per 40 CFR 403.12(b), (e), (h), where appropriate.

d. Industrial User Monitoring in Lieu of Self-Monitoring

Where the permittee elects to conduct monitoring of an industrial user in lieu of requiring self-monitoring, the permittee must gather all information which would otherwise have been submitted by the user. The permittee must also perform the sampling and analyses in accordance with the protocols established for the user and must follow the requirements in 40 CFR 403.12(g)(2) if repeat sampling is required as the result of any sampling violation(s).

e. Sample Collection and Analysis

Sample collection and analysis, and the gathering of other compliance data, must be performed with sufficient care to produce evidence admissible in enforcement proceedings or in judicial actions. Unless specified otherwise by the Director in writing, all sampling and analyses must be performed in accordance with 40 CFR 136 or 40 CFR 503 for biosolids analytes.

9. Slug Control Plans

The permittee must evaluate whether each Significant Industrial User needs a slug control plan or other action to control slug discharges. Industrial Users identified as significant after October 14, 2005, must be evaluated within 1 year of being designated a Significant Industrial User. A slug discharge is any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge that has a reasonable potential to cause interference or pass through or in any other way violate the permittee's regulations, local limits, or conditions of this permit. Per 40 CFR 403:8(f)(2)(vi), the permittee is required to track and document any slug discharge by Significant Industrial Users and make it available to DEQ upon request. The permittee must require Significant Industrial Users to immediately notify the permittee of any changes at its facility affecting potential for a slug discharge. If the permittee determines that a slug control plan is needed, the requirements to control slug discharges must be incorporated into the Significant Industrial User's control mechanism and the slug plan must contain, at a minimum, the following elements:

a. Description of discharge practices, including non-routine batch discharges;

b. Description of stored chemicals;

c. Procedures for immediately notifying the permittee of slug discharges, including any discharge that would violate a prohibition under 40 CFR 403.5(b) with procedures for follow-up written notification within five days; and

d. If necessary, procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling, and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment for emergency response.

10. Enforcement

The permittee must identify all violations of the industrial user's permit or local ordinance. The permittee must investigate all such instances of industrial user noncompliance and take all necessary steps to return users to compliance. The permittee's enforcement actions must follow its approved legal authorities (for example, ordinances) and Enforcement Response Plan developed in accordance with 40 CFR 403.8(f)(5). The permittee must periodically review administrative penalties to ensure that the penalties serve as an effective deterrent of noncompliance.

11. Public Notice of Significant Noncompliance

The permittee must publish annual notification in a newspaper(s) of general circulation or by other means that provides meaningful public notice within the jurisdiction(s) served by the permittee of industrial users which, at any time during the previous 12 months, were in significant noncompliance with applicable pretreatment requirements. For the purposes of this requirement, an industrial user is in significant noncompliance if it meets one or more of the criteria listed in 40 CFR 403.8(f)(2)(viii).

12. Data and Information Management

The permittee must develop and maintain a data management system designed to track the status of the industrial user inventory, discharge characteristics, and compliance. In accordance with 40 CFR 403.12(o), the permittee must retain all records relating to pretreatment program activities for a minimum of 3 years and make such records available to DEQ and EPA upon request. The permittee must also provide public access to information considered effluent data under 40 CFR 2.

13. Annual Pretreatment Program Report

The permittee must submit a complete report to DEQ on or before March 31 that describes the pretreatment program activities during the previous calendar year pursuant to 40 CFR 403.12(i) . For guidance on the content and format of this report, contact DEQ's pretreatment coordinator. Reports submitted to DEQ regarding pretreatment must be signed by a principal executive officer, ranking elected official or other duly authorized employee if such employee is responsible for overall operation of the POTW.

14. Pretreatment Program Modifications

The permittee must submit in writing to DEQ a statement of the basis for any proposed modification of its approved program and a description of the proposed modification in accordance with 40 CFR 403.18. No substantial program modifications may be implemented by the delegated program prior to receiving written authorization from DEQ.

SCHEDULE F: NPDES GENERAL CONDITIONS

DOMESTIC FACILITIES
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 ensure 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 Renewal Fact Sheet
City of St. Helens

Final: October 24, 2024

Permittee	City of St. Helens City of St. Helens, WWTP 451 Plymouth St St. Helens, Oregon 97051
Existing Permit Information	File Number: 84069 Permit Number: 101173 EPA Reference Number: OR0020834 Category: Domestic Class: Major Expiration Date: December 31, 2008
Permittee Contact	Mouhamad Zaher Public Works Director 503-366-8235 265 Strand St St. Helens, Oregon 97051
Receiving Water Information	Receiving stream/NHD name: Columbia River NHD Reach Code & % along reach: 17080003039206 50.64% USGS 12-dicit HUC: 170800030900 OWRD Administrative Basin: Lower Columbia ODEQ LLID and River Mile:1240483462464 RM-84 Assessment Unit ID: OR_SR_1708000302_88_100669
Proposed Action	Permit Renewal Application Number: 974206 Date Application Received: July 27, 2007
Permit Writer	Jeff Linzer 503-229-5123 Date Prepared: April 25, 2024

NPDES Permit Renewal Fact Sheet
City of St. Helens

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NPDES Permit Renewal Fact Sheet
City of St. Helens

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
Schedule F – General conditions

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

- The current permit had Co-Permittees, the proposed permit is issued only to the City of St. Helens, per a permittee change request submitted to DEQ May 3, 2017.
- BOD_5 now has concentration limits.
- BOD_5 mass load limits have been reduced.
- Total suspended solids now have concentration limits.
- Total suspended solids mass load limits have been reduced.

2. Facility Description

2.1 Wastewater Facility

A National Pollutant Discharge Elimination System (NPDES) permit was issued by the Department of Environmental Quality (Department) to the City of St. Helens on February 2, 2004 (2004 NPDES permit). The permit expired on December 31, 2008. Since a timely renewal application was submitted to the Department on July 27, 2007, the City of St. Helens has continued to operate under the terms and conditions of the 2004 NPDES permit pending Department action on the renewal application.

In the application for the 2004 permit, the City of St. Helens and the Boise Corporation (Boise) pulp and paper mill requested that they be made co-permittees and the permit be made a joint permit covering both the City's municipal sewage treatment works and Boise's pulp and papermill. On November 18, 2005, a new upgraded outfall came online. The outfall upgrades included a 450-foot extension of the existing outfall pipeline toward the river channel and the addition of a new 144-foot-long diffuser with 7-24" Tideflex ports at 24-foot spacing.

On May 3, 2017, Boise White Paper, L.L.C (Boise) filed a permit transfer request to DEQ. Under this request Boise was removed as co-permittee. As of June 6, 2017, the City of St. Helens has been the only permittee covered under this NPDES permit. Boise White Paper downsized operations in St. Helens and terminated all but three paper machines. The pulping and bleaching operations also ceased, and the associated equipment was removed. The remaining paper machines were purchased and were operated by Cascade Paper. Cascade Paper ceased operations in December 2023. Because this industry is no longer in operation, the internal Outfalls (002, 003, 004, 005, 006, 008, 009, and 010) will be removed from the new permit.

The St. Helens facility is set up with two headworks. One is for primarily domestic influent and the other is primarily for industrial influent. The industrial headworks design flow is 7.1 MGD. However, recent peak flow from the industrial headworks has not exceeded 5.5 MGD and the average flow is 2.5 MGD. By comparison the domestic headworks design flow is 2.3 MGD. The total average dry weather design dry flow is 9.4 MGD combined.

The original facility was constructed in 1971. The domestic portion of the facility was redesigned in 1991 when the original primary treatment clarifiers and digesters were replaced with a primary treatment aerated stabilization basin. New headworks equipment, a chlorine contact tank and new support buildings were also built at that time. In 2011 the domestic headworks were upgraded to replace an existing helical screen in the west channel of the headworks and a bar screen in the east channel with two perforated-plate automated screening systems that include a dedicated screenings washer-compactor for each screen. The major part of the St. Helens facility is the secondary treatment system, which is an aerated stabilization basin (ASB). This system was designed and sized to treat wastewater from the original mill operations; it is far larger than anything required for treating the current flows.

Figure 2-1: Location

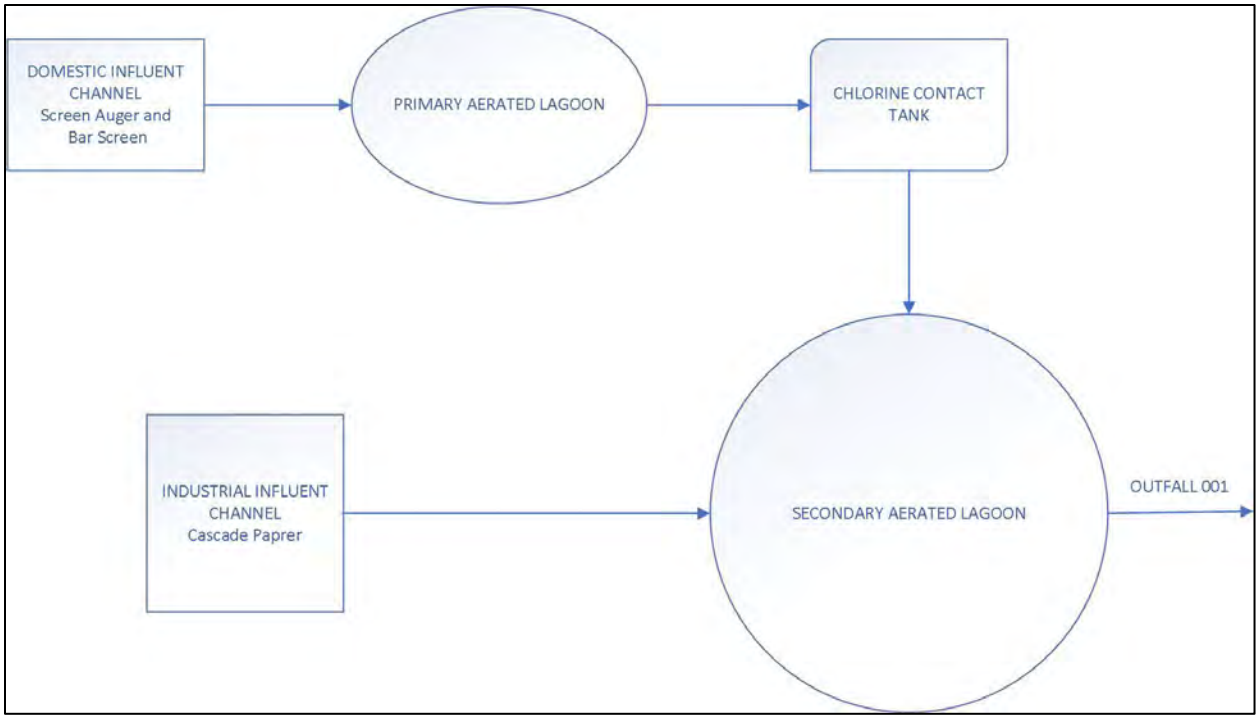


Figure 2-2: Line Drawing of Wastewater Treatment

Table 2-1: List of Outfalls

Outfall Number	Type of Waste	Lat/Long	Design Flow[1] (mgd)	Existing Flow[2] (mgd)
001	Domestic	45.854812, -122.789140	9.4	5.2
007	Domestic	45.856253, -122.797316	9.4	0.0

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

2.2 Compliance History

The facility was last inspected on February 6, 2017. During the inspection DEQ compliance staff identified that the primary clarifier for the industrial influent was not in operation and wastewater was bypassing the clarifier. This was a class II violation, and the facility was given the opportunity to correct. 2017-WLOTC-2549.

2.3 Stormwater

General NPDES permits for stormwater are required for wastewater treatment facilities with a design flow of greater than 1 MGD when stormwater is collected and discharged from the plant site. The permittee will be instructed to investigate any potential stormwater discharges and apply for a 1200-Z accordingly.

2.4 Industrial Pretreatment

The city implements an industrial pretreatment program that was approved by DEQ. The current NPDES permit includes federal and state pretreatment requirements.

The city currently permits one significant industrial user (SIUs). The city has submitted annual pretreatment program reports including updated industrial waste surveys. DEQ conducted a Pretreatment Compliance Audit of the industrial pretreatment program on February 26, 2016. The primary focus of the audit was to assess the core pretreatment program functions including legal authorities, inter-jurisdictional agreements, industrial waste survey methods, permitting, and compliance oversight activities.

2.5 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(s) below show the limits contained in the most recent (2004) permit. The 2004 permit lists ten outfalls, numbered 001 through 010. Outfalls 008 and 009 are for emergency overflows from pump stations. These two outfalls are not included in the proposed permit. Outfalls 001, 005, 006, and 007 have limits in the current permit. These are listed below. Outfalls 002, 003, 004, and 010 do not have limits in the current permit and are not included below.

Table 3-1: Existing Effluent Limits

Outfall 001: Combined Discharge from the Aerated Stabilization Basin of Municipal Wastewater and Bleached Kraft Pulp/Paper Mill Wastewater to the Columbia River.

Boise has primary responsibility for compliance with the following discharge limits at this outfall.

Parameter	Daily Max	Monthly Ave
BOD_5	19,600 lb/d	12,800 lb/d
TSS	50,057 lb/d	26,862 lb/d
AOX	2206 lb/d	1430 lb/d
2,3,7,8-TCDD[1]	0.57 mg/day (quarterly average)	0.40 mg/day (annual average)
pH	within range 5.0 to 9.0	
Excess Heat Load[2, 3, 4]	71.2 MW (7-day average of daily maximums)	
Turbidity (final) (May – Oct)	32 NTU	N/A
(Nov – April)[5]	55 NTU	N/A
Turbidity (interim)[5]	206 NTU	N/A

Boise and the city have joint responsibility for compliance with the following discharge limit from this outfall.

Parameter	Daily Max	Monthly Ave
E. coli bacteria[6]	406/100 mL	126/100 mL

Notes:

1. These 2,3,7,8-TCDD mass discharge limitations (also known as TMDL limits) are based on EPA's total maximum daily load (TMDL) for controlling the discharge of 2,3,7,8-TCDD into the Columbia River Basin promulgated on February 25, 1991. The TMDL waste load allocation for the discharge is 0.27 mg/day. This waste load allocation represents the long-term average limitation that must be met by the permittee and is based on a 70-year exposure period. In addition to complying with the quarterly and annual limitations specified above, the permittees must also demonstrate compliance with the following limitations and exposure periods:

Exposure Period	Effluent Limit
2 years	0.37 mg/day
3 years	0.35 mg/day
4 years	0.34 mg/day
5 years	0.33 mg/day

The discharge from Outfall 001 will be deemed to be in compliance with the quarterly average limit for 2,3,7,8-TCDD if the analytical results at Outfall 001 are less than the minimum level of 10 pg/L and the discharge has met the effluent limitations for 2,3,7,8-TCDD at Outfalls 005 and 006 (bleach plant outfalls). On an annual basis, the permittee must submit a report with effluent 2,3,7,8-TCDD data for the exposure period in question along with an analysis of whether the discharge is meeting the above effluent limits for 2,3,7,8-TCDD. Reports must be submitted one, two, three, four, and five years after permit issuance.

2. The excess heat load limit specified in Schedule A.1 is an interim limit based on historical data. These limits apply from June 1 – September 30. A final excess heat load limit will be established upon completion of the temperature study in Schedule C.2. It should also be noted that the Department is currently reviewing its temperature standard. Upon adoption of a new temperature standard, the permittee may request modification of the excess heat load limits in the permit.

3. The excess heat load limits in Schedules A.1, the temperature monitoring requirements in Schedule B, and the compliance conditions in Schedule C.2 of this permit constitute the permittees' Department-approved surface water temperature management plan (TMP) pursuant to OAR 340-041-0026(3)(a)(D). In accordance with OAR 340-041-0026(3)(a)(D)(vi), the permittee is deemed to be in compliance with in-stream temperature water quality standards and shall not be deemed to be causing or contributing to a violation of the water quality standards for temperature if the permittee is in compliance with this approved TMP.

4. In the event the permittee experiences an exceptional event in which there is unintentional and temporary noncompliance with excess heat load limits in the NPDES permit because of factors beyond the reasonable control of the permittee (i.e., high background stream temperatures), the permittee may claim an affirmative defense to an action brought for noncompliance with the excess heat load limits. The affirmative defense 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. In an enforcement proceeding, the permittee seeking to establish the occurrence of an exceptional event has the burden of proof. To claim an affirmative defense, the Permittee must demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

   (1) An exceptional event occurred and that the permittee can identify the cause(s) of the event;
   (2) The permitted facility was at the time being properly operated;
   (3) The permittee submitted notice of the exceptional event as required in the General Condition D.5 (24-hour notice); and
   (4) The permittee complied with any remedial measures required under General Condition A.3.

5. The interim turbidity limit is effective upon permit issuance. The final turbidity limit is effective upon completion of the compliance schedule in Schedule C.3 of the permit. Note, however, that the final turbidity limits are based on the existing turbidity standard and existing mixing zone dilution. Both the turbidity standard and the mixing zone dilution are expected to change within this permit cycle. Schedule C.3 of the NPDES permit includes a compliance schedule that requires Boise to implement in-plant controls and relocate the outfall structure, which would result in increased dilution. Additionally, the Department is in the process of reviewing its turbidity standard. Revision to the turbidity standard and outfall 001 relocation will result in changes to the final effluent turbidity limits. The permittees may apply for modification to the NPDES permit to revise the final turbidity limits. Until such time as the Department takes action on the modification request or renews the NPDES permit, the interim limits specified herein would apply.

6. Monthly average must be calculated as 30-day log mean. If the daily maximum is exceeded in any month, the permittee may take at least five consecutive re-samples at four-hour intervals beginning no later than 28 hours after the original sample was taken, or 4 hours after the permittee is notified of the exceedance if notification was made more than 28 hours after the original sample was taken. If the log mean of the five or more re-samples is less than or equal to 126/100 mL, no violation of the daily maximum shall be deemed to have occurred. For a month in which an exceedance of the daily maximum occurred and the permittee performed re-sampling, the re-samples shall replace the exceedance sample in calculating the monthly average, if the log mean of the re-samples is less than

or equal to 126/100 mL. If the log mean of the re-samples is greater than 126/100 mL, then the monthly average shall be calculated as a log mean of all samples for the month.

Outfall 005 (Internal Monitoring Point): Discharge from the Kraft Mill Bleach Plant Combined "A" Bleach Line

This is the hypothetical combined Boise "A" bleach line discharge, defined as representative samples from A bleach line acid (005 acid) and A bleach line caustic (005 caustic) sewers, and includes bleaching process filtrates and wastewaters generated at the mill. Boise has primary responsibility for the discharge from this outfall.

Parameter	Daily Max	Monthly Ave
2,3,7,8-TCDD	<10 pg/L	--
2,3,7,8-TCDF	31.9 pg/L	--
Trichlorosyringol	<2.5 µg/L	--
3,4,5-trichlorocatechol	<5.0 µg/L	--
3,4,6-trichlorocatechol	<5.0 µg/L	--
3,4,5-trichloroguaiacol	<2.5 µg/L	--
3,4,6-trichloroguaiacol	<2.5 µg/L	--
4,5,6-trichloroguaiacol	<2.5 µg/L	--
2,4,5-trichlorophenol	<2.5 µg/L	--
2,4,6-trichlorophenol	<2.5 µg/L	--
Tetrachlorocatechol	<5.0 µg/L	--
Tetrachloroguaiacol	<5.0 µg/L	--
2,3,4,6-tetrachlorophenol	<2.5 µg/L	--
Pentachlorophenol	<5.0 µg/L	--
Chloroform[7]	7.96 lb/d	4.76 lb/d

Outfall 006 (Internal Monitoring Point): Discharge from the Kraft Mill Bleach Plant Combined "B" Bleach Line

This is the hypothetical combined Boise "B" bleach line discharge, defined as representative samples from B bleach line acid (006 acid) and B bleach line caustic (006 caustic) sewers, and includes bleaching process filtrates and wastewaters generated at the mill. Boise has primary responsibility for the discharge from this outfall.

Parameter	Daily Max	Monthly Ave
2,3,7,8-TCDD	<10 pg/L	--
2,3,7,8-TCDF	31.9 pg/L	--
Trichlorosyringol	<2.5 µg/L	--
3,4,5-trichlorocatechol	<5.0 µg/L	--
3,4,6-trichlorocatechol	<5.0 µg/L	--
3,4,5-trichloroguaiacol	<2.5 µg/L	--
3,4,6-trichloroguaiacol	<2.5 µg/L	--
4,5,6-trichloroguaiacol	<2.5 µg/L	--
2,4,5-trichlorophenol	<2.5 µg/L	--
2,4,6-trichlorophenol	<2.5 µg/L	--
Tetrachlorocatechol	<5.0 µg/L	--
Tetrachloroguaiacol	<5.0 µg/L	--
2,3,4,6-tetrachlorophenol	<2.5 µg/L	--
Pentachlorophenol	<5.0 µg/L	--
Chloroform[7]	7.96 lb/d	4.76 lb/d

Notes: 7. On September 19, 2002, EPA published in the Federal Register (67 Fed. Reg. 58990) a final rule allowing mills subject to the Cluster rule effluent discharge monitoring requirements to opt for a certification program, instead of conducting the weekly chloroform monitoring required by the rule. If, after two years of weekly monitoring demonstrating compliance with the chloroform limitation contained in Schedule A.5 and A.6, Boise decides to implement this alternative, it must notify the Department 90 days in advance of its intent to implement the compliance certification alternative as outlined in the rule (40 CFR 430.02(f)). Certification requirements are incorporated into this permit by reference.

Outfall 007: Emergency Discharge from the Aerated Stabilization Basin

This is the emergency discharge from the aerated stabilization basin to the Multnomah Channel. Waste sources include all of the sources that are normally included in Outfall 001. Use of this outfall is restricted to emergency situations during periods of high Columbia River level when there is insufficient hydraulic head to discharge the entire secondary ASB effluent flow through the normal Outfall 001 diffuser. The effluent limitations that apply at Outfall 001 also apply to Outfall 007. Boise and the City have joint responsibility for the discharge from this outfall.

Outfalls 008 and 009: Emergency Overflows from Pump Stations

The City of St. Helens has the primary responsibility for the discharge from these outfalls. Except as otherwise provided by law, no wastes shall be discharged from these outfalls and no activities shall be conducted which violate water quality standards as adopted in OAR 340-041-0205 and OAR 340- 041-0445, unless the cause of the discharge is due to storm events as allowed under OAR 340-041- 0120 (13) and (14) as follows: City of St. Helens/Boise Cascade Corporation File No. 84069 Permit No. 101173 Expiration Date: 12/31/2008 Page 7 of 39 Emergency overflow discharges are prohibited to Waters of the State from May 22 through October 31, except during a storm event greater than the one-in-ten-year, 24-hour duration storm event. In the wet season, emergency overflow discharges are allowed until December 31, 2009. On and after January 1, 2010, overflows are prohibited from November 1 through May 21 except during a storm event greater than a one-in-five-year, 24-hour storm event. If an overflow occurs between May 22 and June 1, and if the permittee demonstrates to the Department's satisfaction that no increase in risk to beneficial uses occurred because of the overflow, no violation shall be triggered if the storm associated with the overflow was greater than the one-in-five-year, 24-hour duration storm event.

3.2 Technology-Based Effluent Limit Development

As discussed in Section 2.1 above, the current permit was drafted to address discharges that included effluent from a pulp and paper mill. In particular, the facility at that time was subject to the effluent limit guidelines set forth in 40 CFR § 430.22(a) for bleached kraft mills using a bleaching process. Since the issuance of the current permit, the pulping and bleaching operations at the mill have ceased and paper making operations have been significantly reduced. In addition, under the proposed permit the mill will no longer be a co-permittee. The city will be the sole permittee, with the mill as a permitted pretreatment industry under the city's pretreatment program. In this type of permitting scenario, the federal technology-based effluent limits applicable to the facility are the secondary standards for publicly owned treatment works (POTWs).

40 CFR 122.44(a)(1) requires POTWs 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 Main Stem Columbia River basin.

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

Parameter	Federal Secondary Treatment Standards		Main Stem Columbia Basin-Specific Design Criteria (OAR 340-041-0104)
	30-Day Average	7-Day Average	Monthly Average
BOD_5 (mg/L)	30	45	20 mg/L during defined summer months, 30 mg/L during winter
TSS (mg/L)	30	45	
pH (S.U.)	6.0 – 9.0. (instantaneous)		Not applicable
BOD_5 and TSS % Removal	85%	Not applicable	Not applicable

40 CFR 133.105 allows less stringent effluent limits for POTWs using waste stabilization ponds or trickling filters as their method of treatment. These facilities are required to achieve a monthly average BOD_5 and TSS concentrations of 45 mg/L, a weekly average limit of 65 mg/L and a removal efficiency of 65%.

To be eligible for discharge limitations based on equivalent to secondary standards, a POTW must meet all three of the following criteria:

1. The effluent must consistently exceed secondary treatment standards;
2. The principal treatment process must be a trickling filter or a waste stabilization pond; and
3. The POTW must provide significant biological treatment of the wastewater.

DEQ has evaluated these criteria and has determined that the facility meets all three.

Special considerations for TSS limits from waste stabilization ponds are described in 40 CFR 133.103(c). These allow less stringent TSS limits for waste stabilization ponds. In the early 1980s, DEQ determined that waste stabilization ponds west of the Cascade Mountains are capable of achieving a monthly average concentration of 50 mg/L and east of the Cascade Mountains a monthly average of 85 mg/L. EPA published these approved alternate TSS requirements in 49 Federal Register (FR) 37005, September 20, 1984. DEQ is proposing to include the monthly average TSS limit of 50 mg/L and the weekly limit of 75 mg/L.

The limits for BOD_5 and TSS noted in the discussion 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 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 TSS Concentration Limit (mg/L)	Monthly BOD_5 Concentration Limit (mg/L)
Dry Weather	9.4	50	45
Wet Weather	9.4	50	45
Design flow comments: maximum monthly average			

Mass Load Calculations BOD:

Monthly Average: 9.4 mgd x 45 mg/L x 8.34 = 3528 lbs/day (3,500 rounded to two significant figures)

Weekly Average: 3500 lbs/day monthly average x 1.5 = 5250 lbs/day (5,300 rounded to two significant figures)

Daily Maximum: 3500 lbs/day monthly x 2 = 7000 lbs/day

Mass Load Calculations TSS:

Monthly Average: 9.4 mgd x 50 mg/L x 8.34 = 3919 lbs/day (3,900 rounded to two significant figures)

Weekly Average: 3900 lbs/day monthly average x 1.5 = 5850 lbs/day (5,900 rounded to two significant figures)

Daily Maximum: 3900 lbs/day monthly x 2 = 7800 lbs/day

The proposed BOD_5 and TSS limits are listed in the following table. These limits are significantly more stringent than the BOD_5 and TSS limits in the current permit (see Section 3.1, above).

Table 3-4: Technology Based Effluent Limits

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD_5 (year-round)	mg/L	45	65	NA
	lbs/day	3,500	5,300	7,000
	% removal	65	NA	NA
TSS (year-round)	mg/L	50	75	NA
	lbs/day	3,900	5,900	7,800
	% removal	65	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 Columbia River. These uses are listed in OAR-340-041-0101 for the Main Stem Columbia River.

- Public and private domestic water supply
- Industrial water supply
- Irrigation and livestock watering
- Fish and aquatic life (including salmonid rearing, migration, and spawning)
- Wildlife and hunting
- Fishing
- Boating
- Water contact recreation
- Aesthetic quality
- Hydro power
- Commercial navigation and transportation

3.3.2 Water Quality-Limited Parameters and Total Maximum Daily Loads

The following table lists the parameters in the 2022 303(d) list for which the receiving stream is water quality-limited (Category 5) within the discharge's stream reach. The table also lists any parameters covered by a TMDL.

Table 3-5: WQ-Limited and TMDL Parameters

Water Quality Limited Parameters (Outfall 001)
AU ID: OR_SR_1708000302_88_100669 **AU Name:** Columbia River **AU Description:** Willamette River to Frogmore Slough **Year Last Assessed:** 2022 **AU Status:** Impaired **Impaired Uses:** Fish And Aquatic Life; Fishing; Private Domestic Water Supply; Public Domestic Water Supply **Year Listed:** 1998 **Category 5:** pH, Arsenic, Inorganic- Human Health Toxics, DDE 4,4'- Human Health Toxics, Polychlorinated Biphenyls (PCBs)- Human Health Toxics
TMDL Parameters
Temperature- year-round, Total Dissolved gas, Dioxin (2,3,7,8-TCDD)- Human Health Toxics

Outfall 007 discharges at the mouth of the Multnomah Channel. However, because it is only used in flood scenarios it is assumed that the outfall will essentially be discharging into the Columbia River when it is in use and therefore the same parameters apply to both Outfall 001 and 007.

3.3.3 TMDL Wasteload Allocations

DEQ and/or EPA issued TMDLs for the Columbia River for Temperature (2020), Total Dissolved Gas (2002), and 2,3,7,8-TCDD (1991). WLAs from these TMDLs that are applicable to the permittee are listed in the following table.

Table 3-6: Applicable WLAs

Parameter	WLA	Time Period
Thermal Discharge	1370 Mkcal/Day	June 1 – Sept. 30
Note: The thermal load WLA is expressed as an average monthly value.		

The total dissolved gas TMDL focuses entirely on the hydropower dams and the creation of total dissolved gas due to the spillways. Because the St. Helens POTW is not a hydropower dam and is not expected to affect total dissolved gas, the permittee is not expected to be a source of total dissolved gas. The 1991 2,3,7,8-TCDD TMDL specifically indicated that the sources of dioxin were paper mills and includes a WLA for the Boise Cascade paper mill. The paper mill no longer operates. Since the WLA applied specifically to the paper mill, which is no longer in operation and not part of this permit, the limit for 2,3,7,8-TCDD has been removed from this permit and is no longer a pollutant of concern.

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.

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
Fecal Coliform	Effluent Monitoring
E. coli	Effluent Monitoring
Enterococcus	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
Base-Neutral Compounds	Application Requirement

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 mixing zone for Outfall 001 in the expiring permit is:

> *The allowable mixing zone is that portion of the Columbia River within a parallelogram shaped area extending 100 feet upstream and 400 feet*

downstream and 100 feet off each end of the diffuser. The Zone of Immediate Dilution (ZID) is that portion of the Columbia River within 24 feet of any part of the diffuser between and including the end-most discharge ports.

Outfall 001 is located at 45.854812, -122.789140. In 2007, the permittee requested that DEQ change the 24-foot ZID to 40 feet. Setting the ZID at 10% of the mixing zone size (in this case, 400 feet) is DEQ's standard practice. Therefore, with this memo and renewal, DEQ grants that request. Also, the way the parallelogram is described in the mixing zone study (Mixing Zone/Dilution Technical Evaluation Report, CH2MHill, January 2007) is the same as saying 100 feet upstream and 400 feet downstream. Therefore, DEQ is changing this to the typical "upstream and downstream" language. Finally, the permittee requested that the upstream RMZ be extended to 400 ft to align with RMZs allocated to other NPDES permittees in the area. Environmental mapping showed that an increase in RMZ size would not impact fish habitat or public health. The Columbia River is 2,600 ft wide at the point of Outfall 001. Therefore, the request to extend the RMZ to 400 ft upstream is granted. Together, these changes result in the following mixing zone:

The allowable mixing zone is that portion of the Columbia River within a band extending 400 feet upstream and 400 feet downstream of the diffuser, and 100 feet off each end of the diffuser. The Zone of Immediate Dilution (ZID) is that portion of the Columbia River within 40 feet of any part of the diffuser between and including the end-most discharge ports.

The permit also has a mixing zone for Outfall 007. Outfall 007 (located at 45.856253, -122.797316) is an emergency outfall used during periods of high Columbia River level and high tide, when there is insufficient hydraulic head to discharge the entire secondary aerated stabilization basin effluent flow through the normal Outfall 001 diffuser. It appears that 007 has not flowed in the past 5 years because there is no monitoring data. The regulatory mixing zone for Outfall 007 is defined in the existing permit as follows:

The allowable mixing zone is that portion of Multnomah Channel within a radius of 100 ft from the end of the discharge pipe. A Zone of Immediate Dilution (ZID) is that portion of the Multnomah Channel within a 10-foot radius from the end of the discharge pipe.

Outfall 010 (located at 45.843542, -122.803103) has historically been discharge from the Boise mill's raw water intake screens, which are continually flushed. The screens used Multnomah Channel river water to flush debris back to the Multnomah Channel. The water is taken out of the Multnomah Channel and immediately discharged back to the channel. There were no limits at 010 in the previous permit. The outfall is being removed from the proposed permit.

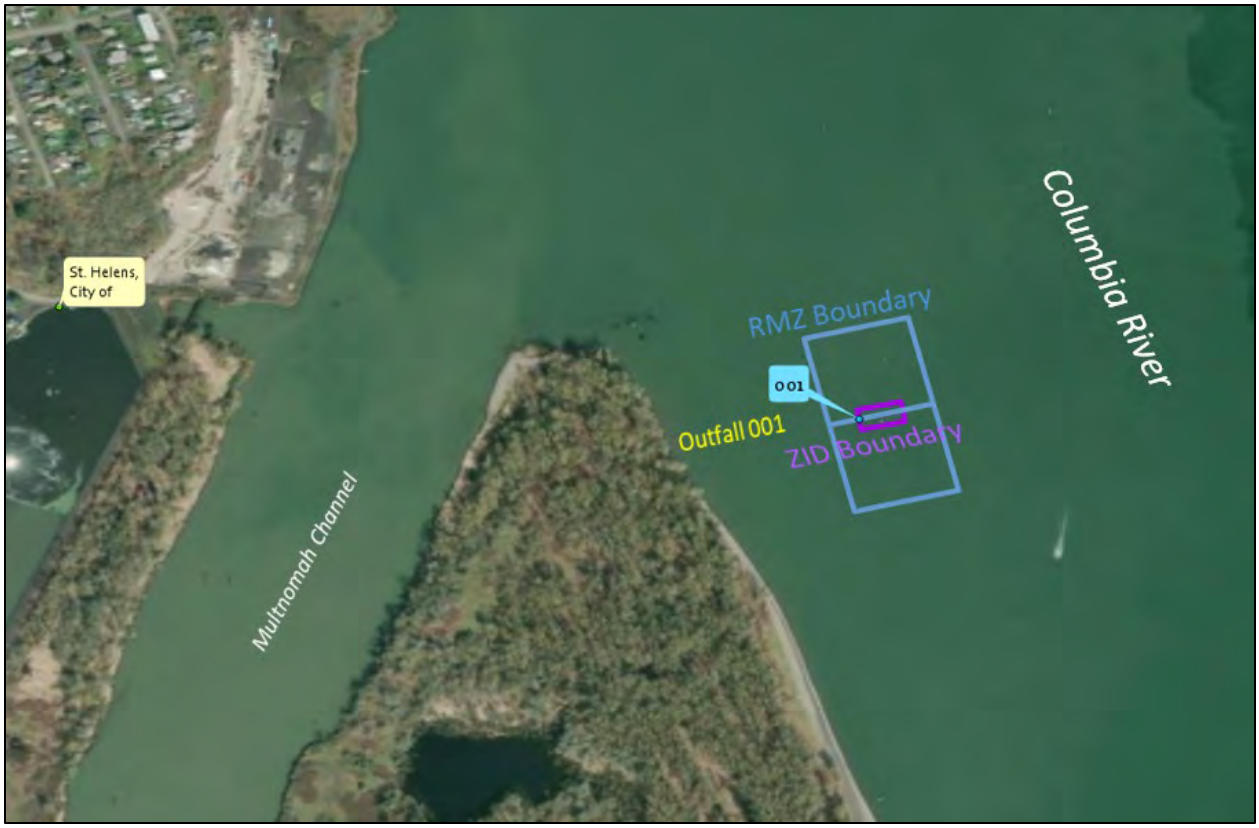


Figure 3-1: Mixing Zone Location

Table 3-9: Dilution Summary for Outfall 001

Outfall 001 Dilution Summary						
Water Quality Standard	**Stream Flow (cfs)**		**Effluent Flow (mgd)**		**Dilution**	**Location**
	Statistic	**Flow**	**Statistic**	**Flow**		
Aquatic Life, Acute	1Q10	68,893	☐ ADWDF x PF ☒ Max Daily Avg ☐ Other	11.4	22	ZID
Aquatic Life, Chronic	7Q10	85,346	☐ ADWDF ☒ Max Monthly Avg ☐ Other	9.4	249	MZ
Human Health, Non-Carcinogen	30Q5	98,768	☐ ADWDF ☒ Max Monthly Avg ☐ Other	9.4	260	MZ
Human Health, Carcinogen	Harmonic Mean	186,218	☐ Annual Avg Design ☒ Annual Avg ☐ Other	7.6	190	MZ
ADWDF = Average dry weather design flow					*PF = Peaking factor*	

3.3.6 pH

The pH criterion for this basin is 7.0 – 8.5 per OAR 340-041-0104. The Columbia River is listed as impaired for the low bound of pH in this assessment unit. When a waterbody is impaired, no assimilative capacity is allowed for that impairment. Therefore, no dilution was used when assessing the lower bound of the pH range in the RPA. The RPA indicates reasonable potential for the secondary treatment standards of 6.0 – 9.0 to cause or contribute to an exceedance of a water quality criteria on the low end. The lower pH limit in the proposed permit has been adjusted to 7.0 and is a WQBEL. The upper pH limit will remain at 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	1	249
2. Upstream characteristics		
a. Temperature (deg C)	21.6	5.1
b. pH	7.2	8.2
c. Alkalinity (mg CaCO3/L)	50	50
3. Effluent characteristics		
a. Temperature (° C)	25.9	10.7
b. pH (S.U.)	6.0	9.0
c. Alkalinity (mg CaCO3/L)	134.6	134.6
4. Applicable pH criteria	7.0	8.5
pH at mixing zone boundary	**6.0**	**8.2**
Is there reasonable potential?	**Yes**	**No**
Proposed effluent limits	**7.0**	**9.0**
Effluent data source: DMRs 2018-2022		
Ambient data source: AWQMS database monitoring location: Columbia River at Marker 14		

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:	
WQ-limited?	☒Yes ☐No
TMDL wasteload allocation assigned?	☒Yes ☐No
Applicable dates: June 1 – September 30	
TMDL based on natural conditions criterion?	☐Yes ☒No
Cold water summer protection criterion applies?	☐Yes ☒No
Cold water spawning protection applies?	☐Yes ☒No
Comments:	

The main stem Columbia River has a year-round Salmon and Steelhead Migration criterion of 20 °C. EPA issued a temperature TMDL addressing this criterion for the entire Columbia River on May 18, 2020, and revised on August 13, 2021. With the issuance of the EPA TMDL a wasteload allocation for the facility of 1,370 million kcal/day (monthly average) applies to the discharge and is included in the permit as an effluent limit for the June 1 – September 30 period. This limit is more restrictive than the thermal limit in the current permit as demonstrated in Appendix B. The daily thermal load discharged is calculated by multiplying the daily effluent flow by the average daily effluent temperature and a standard conversion factor. The daily thermal loads are averaged for the month and must be equal to or less than 1,370 million kcal/day.

Eulachon Analysis

Pacific eulachon, a species listed as threatened under the Endangered Species Act, are known to migrate and spawn in the Columbia River and its tributaries. While there are no specific temperature criteria within Oregon's water quality rules for the protection of eulachon, DEQ must ensure that thermal mixing zones are as small as feasible and adverse effects to eulachon are minimized.

DEQ has previously performed detailed analyses related to eulachon for two other NPDES facilities on the Columbia River: GP Wauna Paper Mill and the City of Portland's Columbia Blvd. wastewater treatment plant. The results of these studies indicated that the discharges were unlikely to have any detrimental impact on eulachon (see the permit fact sheets for each of these facilities for detailed information). Since this facility has a relatively new outfall[1], and with the receiving stream characteristics and effluent temperatures similar to the Columbia Blvd. facility (but with much lower effluent flow than that facility), DEQ has concluded that the St. Helens

[1] The outfall has a multi-port diffuser and the mixing zone has been sized to be as small as feasible.

discharge will be very unlikely to have any detrimental impact on eulachon due to the thermal nature of its discharge.

Table 3-12: Temperature Criterion Effluent Limits

Effluent limit needed? ☒Yes ☐No
TMDL WLA Limit: 1370 Mkcal/Day
Applicable time period: June 1 – September 30
Temperature Criterion Limit: NA
Applicable time period: Dates ☒NA
Comments:

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.

  The City of St. Helens conducted an updated mixing zone study in 2010. This study documented no spawning located in the mixing zone. In addition, Oregon Administrative Rules do not list this section of the Columbia River as having salmonid spawning as a use.

- 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 daily maximum-recorded temperature of the discharge for the 2017 to 2022 period was 30 ºC, below the 32 ºC criterion. Therefore, the discharge does not have the potential to cause acute impairment or instantaneous lethality due to the thermal plume. Since there is no reasonable potential associated with this criterion, no temperature limit is necessary in the permit.

- 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.

An analysis related to thermal shock, included in Appendix A, indicates that when both the effluent and upstream receiving water temperatures are at their maximum measured values, the plume's temperature at 5% of the receiving stream's cross-sectional area will not be above 25 °C. Based on this analysis, thermal shock caused by the discharge is prevented or minimized.

- 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 maximum-recorded receiving water temperature in the vicinity of the discharge location is 23 °C (from the 2015 to 2020 period). An analysis related to migration blockage was performed for the outfall. The analysis for Outfall 001 indicates that when the receiving water temperature is 21.0 °C and the effluent temperature is at the maximum-recorded 7-day value (27.4 °C), the effluent plume when it reaches 25% of the receiving stream's cross-sectional area will be a maximum of 21.0 °C. As such, the effluent discharge does not have the potential to result in migration blockage within the Columbia River.

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: NA
Applicable timeframe: NA
Comments:

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 diffuser of the facility's primary Outfall (001) is approximately 1000 feet offshore of Sauvie Island in the main channel of the Columbia River and 25 feet below the water surface. This location and the surrounding mixing zone area are not expected to contain cold water refugia. As a result, it is unlikely that the facility's effluent would have an impact on any cold water refugia.

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. The following table includes the proposed permit limits and apply year-round.

Table 3-14: 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 no chlorine limits. An analysis was conducted to determine if the facility had the reasonable potential to exceed the chlorine criteria. The maximum chlorine concentration of 0.0 ug/L (Reported on the 2004 permit application, monitoring for TRC was not included in the current permit.) was used for the analysis. The analysis indicates the discharge does not have the potential to exceed the chlorine criteria; therefore, no chlorine limits are included in the proposed permit. However, because the facility uses chlorine to meet the bacteria criteria chlorine monitoring will be included in the proposed 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.

Table 3-15: Ammonia Analysis Information – Year-Round

	Acute	Chronic	
		4-day	30-day
Dilution	22	249	260
Ammonia Criteria	2.3	1.3	0.5
Effluent Data Used			
Ammonia (mg/L)	22.8	22.8	
pH (SU)	8.0	8.0	
Temperature (ºC)	30	30	
Alkalinity (mg/L CaCO3)	64	64	
Receiving Stream Data Used			
Ammonia (mg/L)	0.0	0.0	
pH (SU)	8.2	8.2	
Temperature (ºC)	21.6	21.6	
Alkalinity (mg/L CaCO3)	66.7	66.7	
Ammonia Limit Needed?	**No**		
Calculated Limits	AML	MDL	
Ammonia (mg/L)	-	-	
Effluent data source			
2017-2022 ICIS Data			
Ambient data source			
AWQMS Database 2015- 2021			

3.3.9.3 Turbidity

The previous permit contained an interim limit for turbidity with the acknowledgement in note 5 that the Department was in the process of reviewing the turbidity standard and that Outfall 001 was being relocated. The final limit included in the permit never became effective.

The current turbidity standard (OAR 340-041-0036) states that "no more than a ten percent cumulative increase in natural stream turbidities may be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity…". Ambient data from station 35561-ORDEQ (Columbia River Shoreline at Sauvie Island Beach off end of NW Reeder Rd) was the closest upstream station with turbidity data. The average turbidity at this station was 5.13 NTU. Therefore, a 10% increase in turbidity would be 0.51 NTU.

Effluent data collected by the permittee from January 2018 – September 2023 shows the average turbidity as 32.3 NTU. For Outfall 001 a mass balance equation was used to determine the resulting increase in turbidity levels at the edge of the mixing zone. The calculation is as follows:

$$Turbidity_{mz}=(Turbidity_e+Turbidity_s*D_s)/D_{mz}$$

Where:

$Turbidity_{mz}$ is the turbidity at the edge of the mixing zone
$Turbidity_e$ is the average effluent turbidity
$Turbidity_s$ is the average ambient turbidity of the Columbia River
D_s is the portion of the Columbia River available for mixing (defined as D_{mz}-1)
D_{mz} is the dilution at the edge of the mixing zone

Using this equation, the resulting turbidity at the edge of the mixing zone is

$$Turbidity_{mz}= (32.3\ NTU +5.13\ NTU*248)/249 = 5.24\ NTU$$

By subtracting the average ambient turbidity from the turbidity at the edge of the mixing zone we get an increase of 0.11 NTU, which is smaller than the 10% increase of 0.51. Based on this analysis it is determined that there is no reasonable potential for the effluent to exceed the water quality standard for turbidity. Therefore, the interim limit will be removed from the permit.

3.3.9.4 Priority Pollutant Toxics

DEQ conducted a reasonable potential analysis for the group of toxics listed in the following table.

Table 3-16: Toxic Pollutants Analyzed

Toxic Group
Metals
Volatile Organic Compounds
Acid Extractable Compounds
Base-Neutral Compounds
Pesticides
Effluent data source: EDD from DMRS 2017-2022
Receiving water data source: AWQMS Database

The following parameters were found present in the effluent:

Pollutant	
Metals	**Volatile Organic Compounds**
Aluminum	Bromoform
Antimony, total	Chlorodibromomethane
Arsenic, total	Chloroform

Pollutant	
Beryllium, total	**Base-Neutral Compounds**
Chromium, total	Bis (2-ethylhexyl) phthalate
Copper, total and dissolved	**Acid-Extractable Compounds**
Lead, total	Pentachlorophenol
Mercury, total	**Pesticides and PCBs**
Nickel, total	Aldrin
Zinc, total	Heptachlor
Cyanide, total	
Iron, total	

None of these parameters were in concentrations sufficient to cause an impairment at the end of the mixing zone except for Aldrin and Heptachlor. However, with only 1 sample over the method detection limit, there is insufficient data to establish a limit. Additional monitoring will be required in the draft permit to address this.

3.3.9.5 Copper Biotic Ligand Model

Monthly paired effluent and ambient copper BLM input data was collected by the City of St Helens staff and analyzed by various labs starting in March 2019 through February 2021. For the RPAs, the mixed concentration 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 3-17 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. The only date for which there was a TU greater than 1 was on the April 17, 2019 sampling date. This TU was based on total recoverable copper data, not dissolved, and is therefore an overly conservative estimate. Examination of the ratio of dissolved to total recoverable copper for the effluent data indicates that the dissolved fraction is less than half of the total recoverable copper values. Furthermore, the ambient copper values were higher than the effluent copper values for this sampling event, indicating that the potential to exceed the criterion is not due to the facility effluent. There is not reasonable potential to exceed the copper criterion based on this analysis.

Table 3-17: Copper BLM RPA Results

Date	ZID	BLM CMC	Toxic Units	RMZ	BLM CCC	Toxic Units	100% mix	BLM CCC	Toxic Units
	Cu ug/L	ug/L		Cu ug/L	ug/L		Cu ug/L	Cu ug/L	
2019-03-21	0.51	8.33	0.06	0.51	4.12	0.12	0.51	4.11	0.12
2019-04-17	1.97	3.15	0.625597	1.99	1.55	1.284492	1.99	1.55	1.286982
2019-05-08	0.79	3.21	0.244826	0.80	1.35	0.592777	0.80	1.35	0.594217
2019-06-05	0.63	2.71	0.230928	0.64	1.33	0.479267	0.64	1.32	0.481061

Date	ZID	BLM CMC	Toxic Units	RMZ	BLM CCC	Toxic Units	100% mix	BLM CCC	Toxic Units
	Cu ug/L	ug/L		Cu ug/L	ug/L		Cu ug/L	Cu ug/L	
2019-07-11	0.67	5.06	0.131485	0.68	2.15	0.316793	0.68	2.15	0.318355
2019-08-21	0.59	2.78	0.213058	0.60	1.15	0.515812	0.60	1.15	0.517395
2019-09-04	0.64	4.46	0.14353	0.64	1.89	0.338962	0.64	1.88	0.339661
2019-10-10	0.63	2.80	0.224392	0.64	1.38	0.465537	0.64	1.37	0.46745
2019-11-07	0.50	3.33	0.150596	0.51	1.64	0.312145	0.51	1.64	0.313122
2019-12-05	0.47	2.38	0.198071	0.48	0.99	0.484719	0.48	0.98	0.486465
2020-01-09	0.61	8.06	0.075088	0.60	3.97	0.150004	0.60	3.97	0.149933
2020-02-06	0.40	4.24	0.095416	0.40	2.10	0.193232	0.40	2.09	0.193418
2020-03-05	0.50	7.37	0.068016	0.49	3.64	0.135175	0.49	3.64	0.135008
2020-04-23	0.52	2.47	0.212406	0.50	1.22	0.406877	0.49	1.22	0.405677
2020-05-20	0.64	3.73	0.170237	0.64	1.57	0.40774	0.64	1.57	0.408606
2020-06-11	0.60	1.57	0.380534	0.60	0.63	0.952596	0.60	0.63	0.956298
2020-07-09	0.67	4.27	0.155801	0.66	2.23	0.296584	0.66	2.13	0.310132
2020-08-13	0.55	6.34	0.086302	0.55	3.48	0.159149	0.55	3.27	0.169406
2020-09-17	0.60	4.61	0.130352	0.60	2.04	0.295685	0.60	1.90	0.316997
2020-10-08	0.58	3.63	0.159833	0.59	1.51	0.393968	0.59	1.50	0.395627
2020-11-09	0.49	3.64	0.133747	0.49	1.52	0.325707	0.49	1.42	0.349136
2020-12-07	0.49	2.94	0.168089	0.48	1.12	0.42894	0.48	1.12	0.428342
2021-01-07	0.78	2.56	0.306117	0.78	1.08	0.721947	0.78	1.08	0.721548
2021-02-04	0.58	2.63	0.221172	0.58	1.09	0.535656	0.58	1.02	0.573401

3.3.9.6 Aluminum

The results of the analysis are shown in Table 3-18. The maximum estimated concentration at the edge of the ZID is below the acute criterion and the mixing zone concentration is above the chronic criterion. Complete mix concentrations of aluminum are above the complete mix criterion. However, the maximum measured concentration of effluent total recoverable aluminum was 280 ug/L, which was below the chronic and complete mix criteria. The 90th percentile of the ambient total aluminum was 391 ug/L, which is above the chronic and complete mix criteria. Based upon this analysis, the exceedance of the criteria is not due to the effluent discharge. However, because this was a non-paired analysis, paired monitoring will be required in the next permit cycle.

Table 3-18: Aluminum RPA Results

Location	Applicable Aluminum Criterion (Total Recoverable, µg/L)	Estimated Maximum Aluminum Concentration (Total Recoverable, µg/L)	Additional Monitoring Needed?
At edge of Zone of Initial Dilution (ZID)	886	392	No
At edge of Regulatory Mixing Zone (RMZ)	303	391	Yes – non paired analysis
After complete mix	300	391	Yes – non paired analysis

3.3.9.7 Mercury – Human Health Criterion

Oregon's human health water quality criterion for mercury is expressed in terms of a fish tissue concentration rather than a water column concentration. Because of this, DEQ's approach to performing the reasonable potential analysis for mercury is different from that for other parameters. This approach is described in DEQ's "Implementation of Methylmercury in NPDES Permits" internal management directive.

According to the IMD, "Any facility contributing significant and consistent concentrations of total mercury to the receiving water body is considered to have the reasonable potential to exceed the water quality criterion unless a site-specific survey determines otherwise." Because the water quality criterion for mercury is a fish tissue-based concentration rather than a water column concentration, permit limits for mercury cannot be expressed in terms of a concentration. Therefore, when mercury is present in treated effluent on a consistent basis, the permit needs to contain mercury monitoring, plus a narrative effluent limit that consists of a Mercury Minimization Plan (MMP).

A review of effluent monitoring data indicates that total mercury is present in the discharge and therefore there is a reasonable potential to cause or contribute to the exceedance of the water quality standard. Accordingly, the proposed permit requires the facility to monitor for mercury and develop and implement a mercury minimization plan. This requirement is contained in Schedule A of the permit. Once the plan it submitted to DEQ for review, it must go on public notice for public review and is incorporated into the permit by reference.

3.4 Antibacksliding

The proposed permit complies with the antibacksliding provisions of CWA sections 402(o) and 303(d)(4) and 40 CFR 22.44(l). The proposed limits for BOD_5, TSS, pH, bacteria and temperature are the same or more stringent than the existing permit so the antibacksliding provision is satisfied for these parameters.

Because the current permit regulated the effluent from a direct discharging pulp and paper mill, it contained several technology-based effluent limits (TBELs) specific to that industry type. These TBELs include the AOX limits for Outfall 001 and all of the limits at internal Outfalls 005 and 006. As noted in Section 3.2 above, these TBELs are no longer applicable due the significant changes at the facility. Outfalls 005 and 006 no longer exist since they were part of the kraft mill bleach plant which has been completely removed and is therefore no longer capable of discharging effluent. The anti-backsliding regulations allow for exceptions when there is new information related to a facility and the applicability of existing limits. It is apparent that the new information regarding the removal of the pulping and bleaching operations supports the removal of the associated TBELs.

As noted in Section 3.3.9.3 above, the proposed permit does not include the turbidity limits that are included in the current permit. The rationale for this is that the effluent no longer has a reasonable potential to exceed the turbidity standard due to new information related to the facility. First, as noted above, the pulping and bleaching operations at the mill have ceased and paper making operations have been significantly reduced. Second, a new outfall with a multiport diffuser was constructed within a different area of the receiving water. This new outfall, along with the significantly reduced effluent flows due to the curtailment of mill operations, has resulted in much higher dilutions at the edge of the mixing zone. The anti-backsliding regulations allow for exceptions when there is new information related to a facility and the applicability of existing limits. It is apparent that the new information, along with a finding that there is no reasonable potential to exceed the applicable standard, supports the removal of the current permit's turbidity limits.

Lastly, as noted in Section 3.3.3 above, the proposed permit does not contain the 2,3,7,8-TCDD limits that are included in the current permit. These limits were based on a TMDL wasteload allocation that applied specifically to the paper mill that was previously at the site. As noted above, the mill and – importantly – the bleaching and pulping portions of the mill, is no longer in operation and not part of this permit. The removal of this limit is therefore consistent with the applicable TMDL. Although antibackslіding provisions generally do not allow relaxation of effluent limits in renewal permits, section 303(d)(4)(A) of the Clean Water Act allows relaxation when the receiving water is not in attainment for the limiting or related pollutant, the effluent limit is consistent with any TMDL wasteload allocation, and it can be shown that relaxation is consistent with antidegradation requirements. As noted above, the receiving water is water quality limited, and the removal of the limit is consistent with the TMDL.

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. With the exception of the 2,3,7,8-TCDD mass load limits, the proposed permit contains the same or more stringent discharge loadings as the existing permit. Permit renewals with the same discharge loadings as the previous permit are not considered to lower water quality from the existing condition. For 2,3,7,8-TCDD, the removal of the limits is not expected to result in a lowering of water quality since the source of the pollutant (the bleaching and pulping operations of the mill) has been removed. Since no degradation of the receiving stream is likely to occur due to this action, no further anti-degradation review is required.

DEQ is not aware of any information that existing limits are not protective of 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.

6. Schedule C: Compliance Schedule

The proposed permit contains a new effluent limit for pH. The facility is unable to meet this limit upon permit issuance as the current facility does not have a pH adjustment 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 limit for pH (see 40 CFR 122.47 and OAR 340-041-0061(12)).

The limits addressed in the schedule are more restrictive WQBELs than the TBELs in the current permit. As there is no pH adjustment 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 TBELs 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.

7. Schedule D: Special Conditions

The proposed permit contains the following special conditions:

7.1 Inflow and Infiltration

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

7.2 Mixing Zone Study

A requirement to submit an updated mixing zone study.

7.3 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.

7.4 Recycled Water Use Plan

A condition requiring the permit holder to develop and maintain a recycled water use plan that meet the requirements in OAR 340-055-0025. The plan must also include location-specific information describing where and how recycled water is managed to protect public health and the environment.

7.5 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.

7.6 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.

7.7 Biosolids Management Plan

A requirement to manage all biosolids in accordance with a DEQ-approved biosolids management plan and land application plan. The biosolids management plan and the land application plan must meet the requirements in OAR 340-050-0031 and describe where and how the land application of biosolids is managed to protect public health and the environment.

7.8 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.

7.9 Lagoon Solids

A condition requiring the permittee to submit a sludge depth survey report to ensure lagoon solids are maintained within design standards and accumulations do not negatively affect treatment capabilities.

7.10 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.

7.11 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.

7.12 Outfall Inspection

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

7.13 Lagoon Leak Test

A condition that requires the permittee to conduct a lagoon leak test in accordance with DEQ guidance (Appendix C). If the lagoon is found to be leaking more than ¼ inch per day, then the permittee is required to conduct a preliminary groundwater assessment in accordance with DEQ guidance (Appendix D).

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: Thermal Plumes RPA

Facility Name: St. Helens STP			Date: 4/12/23
OAR 340-041-0053(2)(d)(C): Thermal Shock			
25 deg C at 5% of the stream cross section			
Enter data into white cells below:			Data Metric/Source
7Q10 =	85,346	cfs	2007 St. Helens MZ Study
Ambient Temperature=	23	ºC	DEQ AWQMS Database
Effluent Flow =	11.4	mgd	2007 St. Helens MZ Study
Max Daily Effluent Temperature =	30	ºC	2017-2022 DMRs
5% of 7Q10 =	4267.3	cfs	
5% dilution =	243	dilution = (Qr*0.05)/Qe + 1	
Temperature at 5% cross section =	**23.0**	**ºC**	**No Reasonable Potential**

OAR 340-041-0053(2)(d)(D): Migration Blockage			
21 deg C at 25% of the stream cross section			
Enter data into white cells below:			Data Metric/Source
7Q10 =	85,346	cfs	2007 St. Helens MZ Study
Ambient Temperature =	21	ºC	DEQ AWQMS Database
Effluent Flow =	11.4	mgd	2007 St. Helens MZ Study
Max 7dAM Effluent Temperature =	27.4	ºC	2017 - 2022 DMRs
25% of 7Q10 =	21336.5	cfs	
25% dilution =	1211	dilution = (Qr*0.25)/Qe + 1	
Temperature at 25% cross section =	**21.0**	**ºC**	
ΔT at 25% Stream Flow=	**0.0**	**ºC**	**No Reasonable Potential**

Appendix B: Comparison Between Current and Proposed Thermal Load Limits

The following is a conversion of the old limit, which is in units of MW and is relative to the criterion of 20°C, to the same units and relative temperature of the new limits (million kcal/day and 0°C, respectively). The conversion allows for a comparison between the old and new thermal load limits.

The existing limit is expressed in units of MW. To use this conversion tool, this limit first needs to be converted to units of million Kcals/day. The conversion factor is 1 MW = 20.64 million Kcals/day. So the existing limit of 71.2 MW is equalt to 1470 million Kcals/day. Both of these limits are relative to the criterion of 20°C. This is converted below to a limit relative to 0°C, the same as the limit in the proposed permit.

Original Excess Thermal Load Limit Relative to 20°C						
Original T_a (°C)=	20	Original TLL=	1470	Million Kcals/day	Effluent Flow (MGD)=	9.4
Original Excess Thermal Load Limit Relative to 0°C, same as new limit						
New Ta (°C)=	0	New TLL=	2182	Million Kcals/day		

$TTL_{new} = TTL_{original}$ + TL needed to bring effluent up to $T_{a, new}$

TL needed to bring effluent up to $T_{a, new} = [(T_{a, original} - T_{a, new}) * 3.78541 * Q_e]$

$TTL_{new} = TTL_{original} + [(T_{a, original} - T_{a, new}) * 3.78541 * Q_e]$

Therefore, at the design flow of 9.4 mgd, the existing limit of 71.2 MW relative the criterion of 20°C) is equal to a limit of 2182 million Kcals/day (relative to 0°C, which is how the TMDL WLA is expressed). This current limit value is far greater than the limit of 1370 million Kcals/d that is in the proposed permit. This is true for all plausible lower effluent flows as well. While the new limit has a different averaging period that precludes a direct comparison with the existing limit, the new limit is almost certainly still more restrictive than the current limit considering the value of the old limit is almost 60% greater than the existing limit.

Appendix C: Guidelines for Estimating Leakage from Existing Sewage Lagoons

State of Oregon

Department of Environmental Quality Guidelines

Guidelines for Estimating Leakage from Existing Sewage Lagoons

PURPOSE AND SCOPE

These guidelines provide for relatively inexpensive test equipment and procedures to be used for prioritizing problem lagoons used for treating domestic sewage. Such tests are not definitive. They should be considered preliminary and approximate.

Tests based on these guidelines can only indicate whether the seal on an existing lagoon probably remains intact, or approximately how much it may be leaking. Preliminary tests of this type are not suitable for sewage lagoons where there is a strong likelihood of contamination, or an immediate urgency to protect a priority aquifer.

EXCLUSIONS

Such preliminary testing is not suitable for various types of lagoons which may contain stronger wastes than sewage. For example, leak tests for sludge, septage, strong industrial wastes, and landfill leachate lagoons may warrant a higher level of accuracy. To attain greater accuracy entails considerable time and expense, requires more equipment to develop wind and temperature records, and involves calculations outside the scope of these guidelines.

Such accuracy is seldom warranted for sewage lagoons. In critical groundwater pollution situations, where lagoon seepage is a known concern, immediate installation of monitoring wells and a formal program of groundwater monitoring are normally warranted. In such situations, no program of leak testing is probably accurate enough to substitute for direct groundwater monitoring. Leak testing would only delay the definitive determinations that must be made.

GENERAL APPROACH

The general objective of a leak test is to estimate the average rate of seepage through the bottom of the lagoon. Normally each lagoon cell is isolated and tested separately, which better pinpoints the location of any major leaks. The rate of seepage is expressed in inches per day or centimeters per second.

Leak testing should be restricted to July and August, when rainfall is minimal and the ground is dry enough to exclude significant runoff. Tests conducted at other times will have more variables and may underreport seepage due to runoff effects.

To obtain reasonable precision, each cell of a lagoon should be isolated and tested over a period of 10 - 15 days. Cell depth and pan evaporation measurements should be taken daily. If the lagoon cell cannot be isolated, then daily influent/effluent flows must also be measured. Daily measurements are preferred over weekly to improve precision and to minimize random measurement errors.

Lagoon liquid depth should suit the purpose of the test. To determine average seepage rates, lagoons should be at average operating depth.

In priority areas, any rate of seepage greater than zero may warrant direct sampling and monitoring of the groundwater. Seepage of 1/8" per day or less is normal. However, this low rate can cause groundwater contamination where lagoon contents are strong and background levels are high quality. Seepage exceeding 1/4" per day indicates a seal failure, or absence of adequate initial seal.

EQUIPMENT REQUIREMENTS

Each cell of a lagoon needs to be equipped with a staff gauge for level measurements. Stilling wells to dampen wave action are recommended, and will allow a staff gauge to be read to 1/8" - 1/16". Precipitation can be measured to about 1/100" with a good rain gauge. Evaporation can be measured to roughly 1/1000" with a hook gauge.

The following specifications for rainfall and evaporation equipment are based on Weathertronics equipment manufactured by Qualimetrics, Inc. of Sacramento, and available in Oregon through International Reforestation Supply, Eugene (345-0597). Equivalent equipment is acceptable.

1. Rain Gauge. Qualimetrics Model 6330. This is a plastic gauge with 11" capacity and 0.01" graduations, designed for post mounting.

2. Evaporation Pan. Qualimetrics Model 6821. This is a standard US Weather Bureau steel pan, 47.5" diameter by 10" deep.

3. Hook Gauge. Qualimetrics Model 6831. This is a brass gauge with 0.02" graduations.

To obtain accurate measurements, the equipment needs to be set up level and plumb in an unsheltered area near the lagoon. Equipment may have to be fenced to exclude animals.

The above list is a minimum. Various equipment needed to attain higher levels of accuracy is not listed. For example:

- Recording anemometer

- Max/min thermometers for air, for the evaporation pan, and for the lagoon surface

- Upwind and downwind evaporation pans
- Barometric pressure

If such equipment is available, its use will add precision and accuracy to the results. However, its use is not mandatory for preliminary leak tests used to screen and prioritize existing sewage treatment lagoons.

MEASUREMENTS AND CALCULATIONS

Measurements should be made on a schedule, at the same time each day, so that each set of data represents the duration of exactly one day. All measurements should be tabulated to aid calculation and reporting. We recommend using the attached form or a similar format.

Computations should be converted to compatible units of depth. Influent volume (gallons per day) is converted to inches per day through measurement of the actual water surface area. Rainfall will normally be near zero in July and August, but should be verified daily.

Evaporation will vary with wind and temperature. It should be measured daily, and the pan should be kept well filled.

Lagoon evaporation rates are invariably less than pan evaporation rates. Pan correction factors generally vary from 0.7 to 0.9. The larger the lagoon, the more its evaporation rate lags behind pan evaporation, so the smaller the numerical value of the pan correction factor.

In hot and windy summer weather, evaporation can be substantial. An erroneous pan correction factor can inject significant error. The result of computing seepage rates without any correction for pan evaporation is to overcalculate the evaporation rate. The effect of this error would be to underreport the seepage rate.

REPORT FORMAT

Leakage reports should be short and to the point. The main conclusion is to estimate the seepage rate from each lagoon cell, and from the lagoon as a whole. The methodology and equipment need to be described briefly but thoroughly. A copy of all field measurements and calculations should be tabulated and attached as supporting documentation.

Reports should be certified and signed by a registered engineer or professional hydrologist.

ANNUAL WATER BALANCE

The annual water balance prepared for each lagoon requires determinations of both seepage and evaporation. Leak tests performed according to these guidelines at average liquid depth can establish an average rate of seepage for the water balance. The rate of seepage will tend to vary with liquid level, and will remain constant if the level stays constant.

For the purpose of making water balance calculations, a monthly average evaporation rate should be obtained from local climatological records. Such records may then be applied with a suitable pan correction factor between 0.7 and 0.9, as previously described.

Rate of evaporation and pan correction factors both tend to vary throughout the year. To make accurate adjustments requires additional measurements be taken of all the pertinent factors. These include wind, water

temperature, air temperature, and atmospheric pressure. Pan evaporation corrections should conform to established calculation methods, as presented in standard hydrology texts.

NEW LAGOONS

New sewage and sludge lagoons are designed to be effectively watertight and nearly leak-free. Lagoons which may jeopardize groundwater because of their contents, uses, or location are routinely installed with groundwater monitoring wells. In such applications, leak testing is not a practical or reliable alternative to direct monitoring of the groundwater.

All of the measurements in leak tests are approximations, especially liquid level, and the pan correction factor is usually a rough estimate. Consequently, seepage computed from a leak test cannot be used to prove or substantiate the existence of any actual leak. Leak testing as a basis for acceptance of lagoon construction is not feasible, too often has led to fruitless litigation, and should be discouraged.

As a practical matter, the engineer must design each lagoon for watertightness. Then the engineer must conduct thorough, intensive, and continuous construction inspection to verify that watertight construction is being attained. Inspection may include compaction, infiltrometer, smoke, and spark tests, and constant observation of workmanship and materials.

If leakage and contamination occurred from a properly inspected and certified lagoon, it would indicate a damaged liner or a failure of design. Assuming good design and inspection, the engineer's written certification of proper construction carries a presumption of watertightness. No leak testing program should be approved as a substitute for diligent construction inspection.

INQUIRIES

Inquiries about these guidelines should be directed to DEQ regional water-quality plan review engineers.

DSM:LAGOON2.TST

Orig. V.93

Rev1. VIII.94

LAGOON LEAK TEST

CITY OF _____

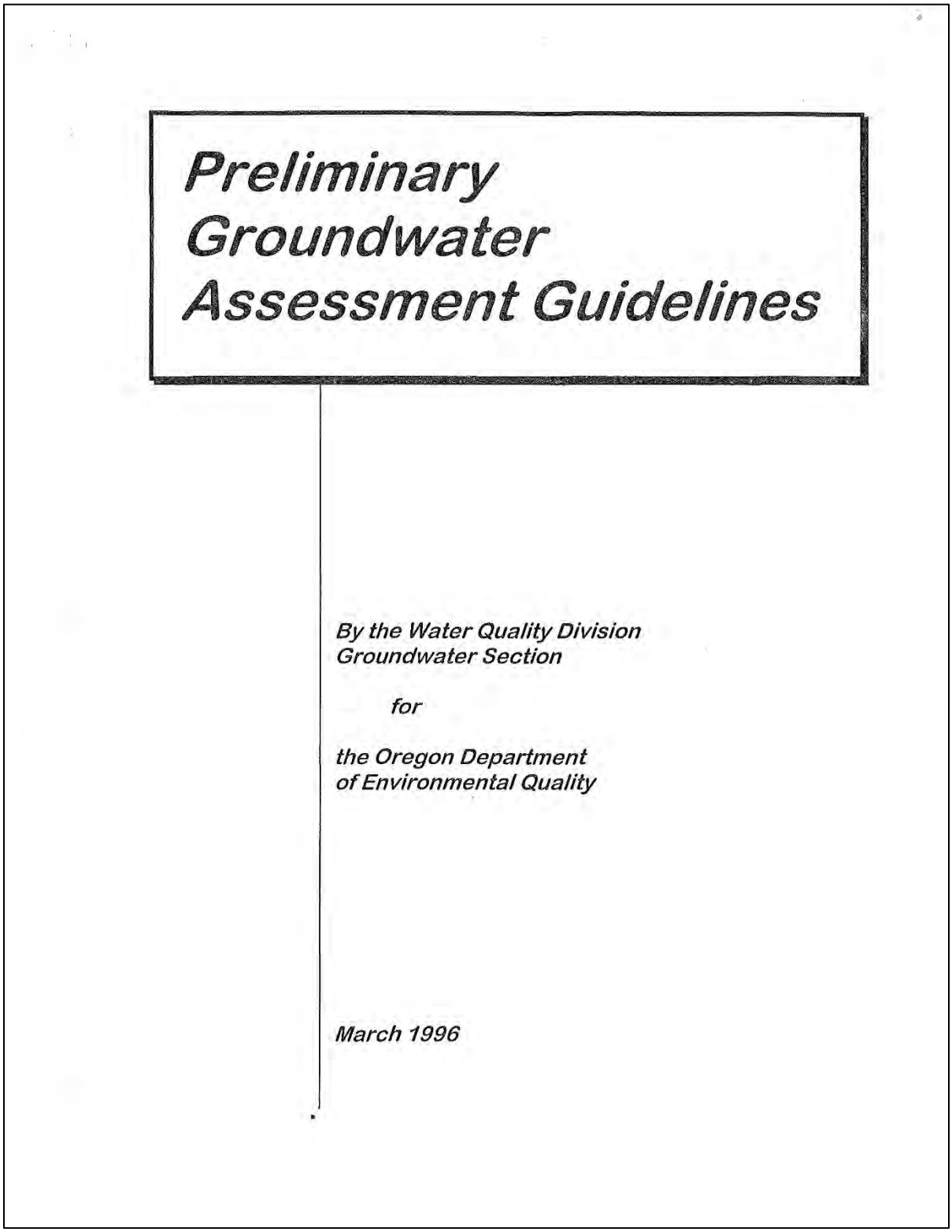
CELL NO._____ WATER SURFACE AREA_____

CELL WATER DEPTH @ TEST START_____ @ TEST END_____

Date	INFLUENT (in/day)	+PRECIP (in/day)	-EVAP (in/day)	- EFFLUENT (in/day)	=NET SEEPAGE

NOTES:

Appendix D: Preliminary Groundwater Assessment Guidelines



Preliminary
Groundwater
Assessment Guidelines

By the Water Quality Division
Groundwater Section

for

the Oregon Department
of Environmental Quality

March 1996

Table of Contents

Preliminary Groundwater Assessment Guidelines

Introduction

Successful protection of Oregon's groundwater depends upon an adequate evaluation of potential contamination by permitted facilities. This evaluation is based on review of appropriate technical information and reports [OAR 340-40-030(2)] submitted by the facility. Although some point source activities are clearly recognized as having a high potential to impact groundwater, the potential impacts from other activities may not be as clear. In these cases, the DEQ has chosen to allow a phased approach in which the facility first provides available/easily obtainable information. This information is called a Preliminary Groundwater Assessment Report and is the subject of these guidelines. Based on this information, the Department will determine if a Hydrogeologic Characterization will be required. A Hydrogeologic Characterization requires the collection of site-specific information and involves a more detailed evaluation of site conditions and potential impacts. Requirements for Hydrogeologic Characterizations are discussed in the guidance document titled - Hydrogeologic Characterization Part B: Guidelines.

The purpose of these guidelines is to offer a standardized approach for the submittal of a Preliminary Groundwater Assessment (PGA) in order to minimize costs and to ensure that needed information is received. It is the Department's intent that the information required in a PGA can be easily and relatively quickly obtained from published sources, public records, previous investigations, etc. It is not intended that the PGA require extensive site-specific data collection, calculations, or modeling. In some instances, however, minimal data collection may be required (e.g. a wastewater analysis or the collection of water level data in existing wells).

DEQ recommends that reports follow the format outlined in these guidelines. The reporting format should be modified, expanded, or shortened, as appropriate, to ensure that the reports are more readable and understandable. Having reports written in a consistent format will allow DEQ groundwater specialists and hydrogeologists to more easily and quickly evaluate the information presented. Consultants can also use the format to assess whether their report includes the information needed by DEQ.

This guidance has been developed by and for DEQ's Water Quality Groundwater Point Source Program. Other DEQ programs may have different requirements.

All reports involving the collection and interpretation of geologic and hydrogeologic information should be prepared and signed by an Oregon Registered Professional Geologist, Registered Professional Engineer, or Certified Engineering Geologist qualified by training and/or experience to work on hydrogeologic investigations. That geologist or engineer is expected to have directed the study and to have visited the site.

Definitions:

"Contaminant" - dredged spoil, solid waste, incinerator residue, sewage, garbage, sewerage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged to water, and includes any pollutant or other characteristic element which may result in pollution of the waters of the State (OAR 340-40-010).

"Point Source" - any confined or discrete source of pollution where contaminants can either enter into - or be conveyed by the movement of water to - public waters (OAR 340-40-010).

"Pollution" - such alteration of the physical, chemical or biological properties of any water of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any water of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such water harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof (OAR 340-40-010).

"Uppermost Aquifer" - the geologic formation, group of formations, or part of a formation that contains the uppermost potentiometric surface capable of yielding water to wells or springs, and may include fill material that is saturated (OAR 340-40-010).

"Wastes" - sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive, or other substances which will or may cause pollution or tend to cause pollution of any water of the state (OAR 340-40-010).

Chapter 1
Facility Characterization

A comprehensive description of the facility is needed to fully understand the potential impacts to groundwater quality. Past and present uses of the facility, including storage and handling practices, are important to identify potential soil or groundwater contamination from previous activities. This information will help to avoid exacerbation of existing conditions by new wastewater discharges.

1.1 Facility Description and Location

Describe the facility, including the type of facility and how long the facility has been in operation.

Provide a written description of the location of the disposal/storage facility with respect to identifiable landmarks, and site access routes from the nearest US or State Highway. The description of the location of the waste disposal/storage site(s) should include: County; Section, Township, Range (to 1/4 1/4 1/4 Section); and latitude and longitude.

Provide maps as needed to describe the facility's location and property boundaries.

1.2 Land Use

General land use practices can have a direct influence on the underlying groundwater quality. Provide a discussion of and a map indicating land use within 1/2 mile of the boundaries of the site.

1.3 Wastes and Materials Treatment, Disposal and Storage

List the types and quantities of wastes and materials to be disposed of or stored at the facility. Provide a process flow diagram for the facility (if available) to identify the waste stream generation points and handling procedures. Also, provide a discussion of past waste disposal or storage practices.

Discuss the location, type, and dimensions of each waste or material storage area including lagoons, solids storage, etc. All historical and proposed waste or material storage areas should be identified on a site map. Provide a discussion of waste solids handling and management.

Indicate the historical and proposed types of waste discharges from the facility. This should include land application, drain fields, wetlands, seepage from storage impoundments, leaching from storage areas, etc.

Discuss the location and dimensions of each waste or wastewater disposal area at the site including ponds, lagoons, drain fields, irrigation sites, etc. All present and past waste disposal areas should be identified on a site map.

1.4 Wastewater Discharge Rates and Frequencies

Discuss current or proposed wastewater discharge rates and frequencies to ponds, lagoons, drain fields, irrigation areas, etc. Discuss past wastewater disposal rates and frequencies.

Discuss seepage rates through lined or unlined ponds, lagoons, wetlands, etc.

Chapter 2
Waste Characterization

The character and strength of a facility's waste stream is used in evaluating the potential threat to groundwater quality.

2.1 Chemicals and Materials

Many substances used by facilities may intentionally or inadvertently enter its waste stream.

List and identify the chemical composition of the chemicals and materials, including those previously used and those proposed for use in the facility's processes, maintenance, cleaning, etc. Identify the quantities and uses of the chemicals and materials. Provide Material Safety Data Sheets, where available.

2.2 Characterization of Wastes and Wastewater

The quality of a facility's wastewater can directly affect groundwater quality.

Provide an analysis and a discussion of the chemical characteristics of the existing and proposed wastewater stream(s).

Discuss sampling parameters, methods, locations, and frequencies used in the characterization of the wastewater.

If wastewater is not available for analysis provide an evaluation of potential wastewater characteristics based on bench or pilot tests, analyses from comparable facilities, calculations, etc. Indicate how the predicted wastewater characteristics were determined.

2.3 Characterization of Solids

The facility's solid waste stream(s) may also have an effect on the underlying groundwater quality.

Discuss the quantities and characteristics of waste solids or materials historically stockpiled or stored and those proposed to be stockpiled or stored at the site. Discuss the leaching potential of the materials. If a material produces a leachate, estimate the volume and characteristics of the leachate.

Discuss sampling parameters, methods, locations, and frequencies used in the characterization of the solids.

Chapter 3
Site Characterization

Groundwater quality and movement are directly related to a variety of site factors including topography, climate, hydrology, geology, and hydrogeology. Potential impacts to groundwater quality need to be considered with the local setting.

3.1 Topography

Shallow groundwater movement may closely mirror surface water flow and the slope of the land surface.

Provide a general discussion of the topography of the site and the area adjacent to the site. Provide a site map indicating the topography of the site and an area within at least 1/4 mile of the site, if available.

3.2 Climate

Rainfall recharges shallow aquifers and affects the quality of the shallow groundwater.

Provide a general discussion of the climate of the area.

3.3 Groundwater and Surface Water Use in the Vicinity

By understanding where and how water is used we can gain a clearer picture of local groundwater movement and identify vulnerable receptors of contaminated groundwater.

Provide an inventory of water wells and surface water diversion points on site and within a 1/2 mile radius of the site boundary. The inventory should identify, to the extent practicable, all active and inactive water wells, irrigation wells, and surface water diversion points. At a minimum, the driller's log files and other records of the Oregon Water Resources Department (OWRD) should be reviewed to identify wells and water diversion points within the area of investigation. Additionally, a door-to-door field survey should be made to identify wells in the area for which logs may not be on file with the OWRD or for which location information is not adequate. The following if possible: name and address of current well owner, driller's name and affiliation, date drilled, well location, aquifer,

land surface elevation, depth of well, material and construction, use of well, static and pumping water levels and dates of measurement, and available water quality data. Provide tables indicating the wells and surface water diversion points, their proximity, type of use, withdrawal rates, etc. Wells and surface water usage points should be shown on an area map indicating the facility's property boundaries. Well logs should be provided, where available, and referenced to the location map and the table.

Indicate if the site is located within a well head protection area; the recharge zone of a principal or primary water supply aquifer; or within the zone of influence of a public water supply well or well field at maximum pumping rate(s).

3.4 Soil Characterization

Soil is a very important link between the surface and subsurface; and between activities above ground and the quality and quantity of groundwater below ground.

Based on existing information and previous investigations provide a general discussion of soils within the site boundaries including soil type, soil texture, vertical and horizontal distribution of soils. All sources of information used in the discussion of soils should be cited in the reference section.

3.5 Geologic Characterization

Groundwater's occurrence, movement and natural quality are directly related to the geologic environment. Geology can also affect the groundwater's vulnerability to contamination.

3.5.1 Regional Geology

Describe regional geology based on existing publications and reports, public records, and from previous investigations. Geologic studies may have been conducted by DEQ, the United States Geologic Society, the Oregon Water Resources Department, or through a university or independent research. The discussion of regional geology should include the age, areal and subsurface distribution, thickness, physical description and genesis of major lithologic units; and the age, occurrence, orientation and physical description of major structural features.

3.5.2 Local Geology

Characterize the local site-specific geology based on publications reports, public records, existing site-specific information, etc. Sources for site-specific information may include previous geologic borings, test pits, well logs, etc. The discussion should include, but should not necessarily be limited to, identification of the horizontal and vertical extent of subsurface materials, the types of materials, structural features, and the geological influences that may control groundwater flow (such as high permeability zones, fractures, fault zones, buried stream deposits, etc.).

If existing information includes previously collected site-specific geologic data, then the following should be included in the report, where available:

- a description of previous surface geologic investigations;
- a description of previous subsurface investigations including
  - number, location, and depth of borings and test pits;
  - the drilling and soil/rock sampling methods used to collect soil and rock samples;
  - the procedures and methods used to characterize the soil and rock material samples obtained from the boring and tests pits (e.g. grain-size analysis, etc.)
- a discussion of supplementary techniques such as geophysics, cone penetrometer investigation, aerial imagery, etc. used in previous investigations at the site.

The following supporting information should be included in the report, if available:

Copies of existing boring/geologic logs. Logs should include existing results from laboratory analysis, field identifications, descriptive text, and graphical display.

Results and appropriate tables and graphs resulting from previous field or laboratory testing of geologic materials.

A map showing the locations of existing borings, trenches and other sampling locations.

A map indicating the surficial geology of the site.

Cross-sections and/or fence diagrams constructed from existing information that depict the geology of the site. The cross-sections or fence diagrams should be referenced to a site map.

All sources of information used in characterizing the regional and local geology should be cited in the reference section.

3.6 Hydrogeologic Characterization

Groundwater movement is dynamic and complex. It is affected by geologic structure and the type of material through which the water flows. How contaminants reach groundwater and move in it is equally complex. Hydrogeologic data and information are basic to understanding the potential for groundwater quality impacts.

3.6.1 Regional Hydrogeology

The regional hydrogeology should be described based on existing information. These information sources might include publications, reports, public records, previous investigations, etc. The description should include the depth, thickness, physical characteristics, and lateral persistence of major and minor aquifers and aquitards; rates and directions of groundwater flow; areas of recharge and discharge (including water wells); hydrologic boundaries; seasonal variations in groundwater levels and flow; and chemical quality of the groundwater.

3.6.2 Local Hydrogeology

Provide a discussion of site-specific hydrogeology based on existing information. If sufficient information is available, the discussion should include depth to groundwater; depth, thickness, lateral and vertical extent of aquifers and confining layers; presence of perched aquifers; groundwater levels and gradients; groundwater flow directions and fluctuations; groundwater flow rates; inter-connection between aquifers and between groundwater and surface water; groundwater quality; and human-induced influences.

If existing information includes the previous collection of site-specific hydrogeologic data, then the following should be included in the report, where available:

- number, location, and depth of previous borings and existing monitoring wells or piezometers;
- information on existing well and piezometer construction and development;
- the methods and equipment previously used to define the saturated zones, gradients, groundwater flow directions, etc.;
- the field and laboratory methods and tests used to define aquifer properties (e.g., laboratory permeability testing, slug tests, aquifer tests, etc.);
- a description of indirect methods used, such as geophysics; and

- Formulas used for calculations (e.g., calculations of groundwater flow velocities) should be cited.

The following information should be provided in the report where possible:

Logs from existing supply wells, monitoring wells, piezometers, and geologic borings should be provided. Logs should include results of laboratory analysis, field identifications, descriptive text, and graphic display, if available. In addition, logs for any water supply wells within 1/2 mile of the site should also be provided.

A map showing the locations of wells, borings, etc.

Existing data from previous in-situ hydraulic tests and a discussion of the methods used, if known.

A table listing the elevations, depths and screened/open intervals for the existing wells and piezometers.

Water level measurements in appropriate surface water bodies and existing wells and piezometers. This may require the collection of data. The measurements should be referenced to common datum, if possible. The dates of the measurements should be indicated.

If sufficient water level data can be collected on or near the site then contour map(s) of the potentiometric surface(s) of the aquifer(s) present at the site should be presented. Surface water level data should be incorporated into the contour map, when appropriate. The contour map(s) should indicate the measuring points, water level values, and measurement date(s). Contour lines within the actual area represented by the data should be represented with a solid line. Any interpretation outside the field data should be represented with a dotted or dashed line. Flow directions also should be indicated on the contour maps. The water level measurements dates should be indicated on the map.

If sufficient information is available, provide cross-sections that depict the hydrogeologic environment at the site. Reference the cross-section(s) orientations on a location map.

All sources of information used in characterizing the regional and local hydrogeology should be cited in the reference section.

3.6.3 Groundwater Quality

Based on existing information provide a discussion of the existing water quality at or near the site. Discuss sampling methods and analytical methods, if known, and provide laboratory reporting sheets, if available.

Describe any existing groundwater monitoring programs at the facility. Indicate if the facility is located in a Groundwater Management Area and identify the parameter(s) of concern.

3.7 Surface Hydrologic Characterization

Groundwater and surface water are interconnected in the hydrologic cycle. Consideration of groundwater's impacts on surface water bodies (and vice versa) provides a holistic evaluation of a facility's potential impacts on general water quality.

Describe any surface water bodies including seeps, springs, wetlands, ponds, lakes, rivers, streams, or other surface water features on-site or within a 1/2 mile radius of the facility. The locations of surface water bodies should be shown on the site map or the location map, whichever is appropriate. Indicate surface water elevations, if known.

Describe the site's surface water drainage conditions and susceptibility to flooding.

Provide a discussion of existing surface water quality data at or near the site. Discuss sampling and analytical methods if available. Provide laboratory water quality data sheets, if available.

Identify streams/water bodies classified as "water quality limited". Identify parameters of concern.

Chapter 4
Evaluation of Potential Water Quality Impacts

The need to monitor groundwater, establish regulatory limits and/or conduct other activities aimed at protecting groundwater quality is linked to a facility's potential impacts on water quality.

Based on the information discussed above, provide any appropriate conclusions on the potential for water quality impacts from the facility.

Supporting Information

References

Provide references for publication(s) and other information sources used in the preparation of this report.

Figures, Tables, and Maps

Provide figures, tables and maps as needed to support and clarify the information presented in the text of the report.

Provide a series of maps to describe the facility location, site conditions, sampling locations, land use, etc. All maps should have a north arrow, bar scale, a drawing date and an explanation of all map symbols.

- *Location Maps.*

Submit a map or a series of maps showing the disposal/storage facility and the area within at least a three mile radius of the site boundary. Provide two USGS 7.5 min. (1:24,000) topographic maps. If 7.5 min. maps are not available, then provide two enlargements of 15 min. (1:62,500) USGS topographic maps. One of the maps should indicate land ownership and use adjacent to the site. The other map should indicate the following information: site boundaries, an area at least three miles around site boundary, locations of all wells within 1/2 mile of wastewater disposal site, surface water bodies, etc.

- *Site Maps*

Provide a series of site maps of an appropriate scale (scale of 1 inch = 200 feet recommended) to show the following information:

1. buildings, other structures, and property lines
2. topography of the site and an area within at least 1/4 mile of the site, if available
3. locations of wells, borings, or sampling points
4. location of the 100-year flood plain
5. surface water bodies (seeps, springs, streams, ponds and wetlands), drainage ditches, etc.

6. all active and closed wastewater disposal / storage / application sites and
7. all material storage areas

Provide other maps as necessary to describe soils, geology, hydrogeology, land use, etc.

Appendices

Provide appendices as needed to include such items as well logs, laboratory reports, MSDS sheets, calculations, etc.

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DEQ response to comments

NPDES Permit: City of St. Helens

File number: 84069
Permit number: 101173

September 3, 2024

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Department of
Environmental
Quality

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Overview

DEQ accepted public comment on the proposed permit number 101173 from April 25, 2024, through May 31, 2024. During this time DEQ received requests for a public hearing from three groups representing ten or more people. DEQ extended the public comment period to July 12, 2024, and scheduled a public hearing for July 10, 2024. This permit originally expired on December 31, 2008, and was administratively continued. This document provides a summary of each comment and a response from DEQ. A record of these responses to comment are delivered to the commenter upon "notice of delivery" of the permit and stored in the administrative record.

A public hearing was held on July 10, 2024, for the proposed permit.

The following individuals or entities submitted written comments by mail, email, or provided oral comments in during the public hearing:

List of commenters		
#	**Commenter**	**Affiliation**
1	Mouhamad Zaher	City of St. Helens
2	Stephen Topaz	Citizen of St. Helens
3	Michael Pouncil	Portland Harbor Community Advisory Group
4	Willie Levenson	Human Access Project
5	Cassie Cohen	Portland Harbor Community Coalition
6	Arthur F. Leskowich	Portland Harbor Community Advisory Group

Public comments received by the close of the public comment period are organized by commenter or by topic if more than one comment was made about the same topic. DEQ's response follows the summary comment. Original comments are on file with DEQ.

1. Mouhamad Zaher/ City of St. Helens (May 31, 2024)

Comment 1a: In Schedule A, Table A-1, Note a. references "interim pH limits" followed by "final Total Residual Chlorine limits". This appears to be an error.

Response: *DEQ appreciates the city pointing out this typographical error. "Total Residual Chlorine" has been replaced with "pH" in note a.*

2. Mouhamad Zaher/ City of St. Helens (May 31, 2024)

Comment 1b: We respectfully request a review of the proposed minimum effluent limits of 7 for pH. Given our current infrastructure capabilities, we seek to strike a balance between rigorous environmental protection and practical operational feasibility. We would appreciate the implementation of an MOA and associated timeline that not only allows for necessary system upgrades to meet pH criteria but also provides an opportunity to conduct additional sampling to

determine the true characteristics of the receiving stream, specifically the seasonal pH, buffering capacity and the associated impact of pH and alkalinity from the discharge.

St. Helens' has a somewhat unique situation with the large open lagoon system and rainwater that is slightly acidic, which influences both the effluent and the receiving stream. Is it feasible and/or practical to add chemicals to increase the pH of the effluent during wet weather events to a minimum pH of 7? Would we be in essence treating rainwater? Will the associated discharge with or without chemical addition have any significant impact on the large receiving stream (the Columbia River)? Could adjustment with chemicals ultimately be more detrimental to the receiving stream or the environment.

Further evaluation appears to be necessary to understand the implications and impacts of pH and alkalinity. We request language with associated monitoring and timelines be included in the compliance schedule for pH adjustment and an MOA established to maintain current pH limits until further evaluations may be completed.

Response: *DEQ understands the difficulty in meeting the new pH limit. In response to the city not being able to meet the new pH upon issuance of the permit, a compliance schedule was developed with input from the city. The goal of a compliance schedule is to provide the city with the time needed to make necessary system upgrades. If the city identifies the need for more time to complete the necessary system upgrades, the city may request a permit modification before the final pH limit becomes effective.*

A compliance schedule is not intended to solely provide time for additional data gathering, however this does not preclude the city from collecting additional data during the term of the permit.

A Mutual Agreement and Order is compliance tool and cannot be established or implemented as part of a permit issuance. The city must first be out of compliance with a limit, without a compliance schedule, to potentially enter into a Mutual Agreement and Order.

No changes have been made to the permit or fact sheet in response to this comment.

3. Mouhamad Zaher/ City of St. Helens (May 31, 2024)

Comment 2a: In Schedule B, Table B-1, "Biosolids annual report." Request this language to be amended or removed as St. Helen's does not produce biosolids. A "Lagoon Management Plan" which requires reporting when dredging and associated disposal of solids is conducted is more appropriate. Dredging and disposal is currently only completed on an as-needed basis.

Response: *As noted in the current draft permit, the biosolids annual report is only required if the facility removes biosolids. If there are no biosolids removed, the city may send a signed letter to DEQ certifying that no solids were removed during the previous year in lieu of a full report. This text was included in the draft permit to allow the city to remove biosolids without needing to request a permit modification should the city decide in the future to remove biosolids.*

No changes have been made to the permit or fact sheet in response to this comment.

4. Mouhamad Zaher/ City of St. Helens (May 31, 2024)

Comment 2b: In Schedule B, Table B-3, required test for chlorine from Jul 1- Sep 30, however thermal discharge load needs to be reported from Jun 1- Sep 30. Clarification if this is correct or an error. Should the dates match?

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Response: *DEQ reviewed the monitoring dates for Table B3 and determined the following: The Thermal Load Discharge monitoring in the permit is correct; June 1 through September 30 is the same time as when the Thermal Load Discharge limits apply. The Total Residual Chlorine monitoring period of July 1 – September 30 is a typographical error; upon further review the monitoring period for Total Residual Chlorine should be year-round. Table B3 has been updated to reflect the correct monitoring period for Total Residual Chlorine.*

5. Mouhamad Zaher/ City of St. Helens (May 31, 2024)

Comment 2c: Table B-4 requires Biosolids Sampling. St. Helens WWTP does not produce biosolids and therefore cannot conduct the permit sampling requirements. Request the language be amended to reflect the lagoon system. Language included in the last permit: "At least 60 days prior to dredging secondary solids from the ASB, the permittee must submit for Department approval a Dredging Project Management Plan.", which includes the solid waste receiving facility information.

Response: *The monitoring requirements in Table B4 are part of the pretreatment program and directs the city to sample biosolids as required in 40 CFR 503 which only requires biosolids sampling when the biosolids are removed from the plant. If the city does not remove any biosolids from the plant than no biosolids sampling is required. This text was included in the draft permit to allow the city to remove biosolids without needing to request a permit modification should the city decide in the future to remove biosolids.*

No changes have been made to the permit or fact sheet in response to this comment.

6. Mouhamad Zaher/ City of St. Helens (May 31, 2024)

Comment 2d: Schedule D. Sect 6 requires the submittal of a "wastewater solids annual report" including the volume of material removed and where it went. Again, this does not appear to be relevant to the specific system/permit and may lead to confusion and unnecessary reporting.

Response: *DEQ is requiring all wastewater facilities to report their wastewater solids activities annually regardless of removing any material. This is to ensure facilities are actively monitoring the solids accumulation and planning ahead for when they will need to address this material. This also ensures facilities are reporting their activities and not forgetting to report any solids removals.*

No changes have been made to the permit or fact sheet in response to this comment.

7. Mouhamad Zaher/ City of St. Helens (May 31, 2024)

Comment 2e: WET testing – the DEQ requirement is 4 per permit cycle at the same time as effluent toxics per DEQ Monitoring matrix and permit template, the permit schedule indicates sampling every 3rd quarter which would not account for seasonal variability. We request the language be amended to at least 4 samples collected during permit cycle and the sampling events in the same year (or later) to coincide with effluent toxics monitoring.

Response: *The intent of the WET testing monitoring frequency is to collect WET test samples at the same time the city collects Tier 1 effluent toxic samples. However, instead of having the facility collect 1 sample per year, the intention of the WET testing frequency in Table B1 is to have the city collect samples on a rotation 3 quarter period. This way after all 4 samples have been collected, the city will have collected a WET test sample in each quarter. An example of what this would look like is; year 2 – quarter 3, year 3 – quarter 2, year 4 – quarter 1, year 5 – quarter 4. Clarification on how to meet the WET testing monitoring frequency has been added to the note c in Table B1.*

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8. Mouhamad Zaher/ City of St. Helens (May 31, 2024)

Comment 2f: Pretreatment monitoring frequency is based on design flow – greater than 5 MGD, quarterly; less than 5 MGD, semi-annually. The permit fact sheet states that DEQ includes the industrial discharge to secondary treatment as part of the overall design flow (2.3 MGD domestic + 7.1 MGD industrial = 9.4 MGD total design flow). The industrial component has been greatly reduced in recent years and the city regulates the industrial discharge under an approved Pretreatment Program. Request the option to reduce frequency of pretreatment monitoring to the minimum required.

Response: *DEQ maintained the facility design flow to include the industrial headworks, even though the current industrial component has been greatly reduced, so the city has the opportunity for growth and development. If DEQ were to reduce the design flow to only the domestic headworks, that reduction would be reflected as a reduction in TBEL loadings. Any future request from the city for a mass load increase would require the city to submit an antidegradation review. The city can request a permit modification to reduce the design flows.*

No changes have been made to the permit or fact sheet in response to this comment.

9. Mouhamad Zaher/ City of St. Helens (May 31, 2024)

Comment 2g: St Helens has collected 24 samples for CuBLM and a determination was made of "no reasonable potential". We request the sampling frequency be reduced to twice per year, in alternating quarters, for at least five years or until the permit is renewed and not to exceed 24 data sets per DEQ document –"Procedure for Determining Reasonable Potential for Copper Using the Biotic Ligand Model" and/or request Copper BLM monitoring be conducted at the same frequency as effluent toxics characterization.

Response: *The document referenced in the comment has recently been updated with new monitoring frequencies. In situations where a dissolved copper concentration is unavailable or was removed from the analysis for QA/QC issues, and the corresponding total recoverable copper concentration results in a toxic unit greater than 1, an additional 24 monitoring events will be required in the new permit. This condition occurred on the April 17, 2019, sample date, therefore an additional 24 samples were included in the permit. Because DEQ is applying the current guidance, the Copper BLM monitoring has been amended to allow for specific conductivity measurements to be taken in lieu of the geochemical ions, as is allowed under the updated copper monitoring guidance.*

No changes have been made to the fact sheet in response to this comment.

10. Mouhamad Zaher/ City of St. Helens (May 31, 2024)

Comment 3: The City of St. Helens is dedicated to maintaining and improving our wastewater treatment facilities. However, achieving compliance with the proposed permit requirements may necessitate significant financial investment. We request information on potential funding opportunities or state-provided support aimed at assisting municipalities in meeting enhanced environmental standards.

Response: *If you are interested in upgrading your wastewater treatment infrastructure or need assistance with treatment system design, DEQ's Clean Water State Revolving Fund offers below-market rate loans for qualified applicants to finance the planning, design and construction of water quality improvement projects. DEQ updates interest rates are updated quarterly, and rates vary by loan term, type of loan, and community economic conditions. DEQ works with borrowers to ensure access to the best rates available at the time of loan signature. To learn more about*

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eligible water quality projects and application process, please visit the Clean Water State Revolving Fund website at https://www.oregon.gov/deq/wq/cwsrf/Pages/default.aspx or call 503-229-LOAN.

11. Stephen Topaz/ Citizen (May 31, 2024)

Comment: Attached are a number of aerial photographs of the mill site that will become th[e] "cooling lagoon/treated sewage dump site.

These pictures are of the ground under the present lagoon. The bottom of the present lagoon is located just above the nominal high-water mark of the Columbia River at St. Hellens.

Also included is a geo-profile of the underlying ground.

Response: *DEQ thanks you for the historic photos of the original papermill and the geological cross section of the wastewater treatment lagoon. These documents have been added to the permit file.*

No changes have been made to the permit or fact sheet in response to this comment.

12. Michael Pouncil/ Portland Harbor CAG (May 31, 2024)

Comment: I am requesting at public hearing for City of St. Helens Wastewater Treatment Plant located at 451 Plymouth Street in St. Helens. We have concerns about the impact to the Columbia River and the impact of drinking water for the city of St. Helens.

Response: *DEQ notified the Portland Harbor Community Advisory Group of the intent to hold a public hearing. The public hearing was held on July 10, 2024.*

No changes have been made to the permit or fact sheet in response to this comment.

13. Willie Levenson/ Human Access Project (May 31, 2024)

Comment: The mission of Human Access Project is Transforming Portland's Relationship with the Willamette River. We have been conducting our mission work since 2010. I am writing to express Human Access Project's desire to have DEQ hold a public hearing for City of St. Helens Wastewater Treatment Plant located at 451 Plymouth Street in St. Helens. We have concerns about the impact to the Columbia River and the impact of drinking water for the city of St. Helens.

Many thanks for your consideration of having a public hearing on this issue. Please submit my attached letter as public comment.

Response: *DEQ notified the Human Access Project of the intent to hold a public hearing. The public hearing was held on July 10, 2024.*

No changes have been made to the permit or fact sheet in response to this comment.

14. Cassie Cohen/ Portland Harbor Community Coalition (May 31, 2024)

Comment: We officially submit this public comment to request a public hearing during and extension of this public comment period on the NPDES Water Quality Permit Renewal for St Helens WWTP. We have been hearing concerns from St. Helens community members and Portland residents for many years about the plans of St. Helens city council to in-fill further

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contaminated sediments into an existing contaminated lagoon bordering the Columbia River. We look to the Yakama Nation that has also expressed tremendous concerns about existing contamination in the St. Helens area and their risks for entering the Columbia River, disrupting Tribal treaty fisheries.

We are also concerned about emerging contaminants such as Pfas and other contaminants unaddressed by the City of St. Helens. This warrants a public hearing.

Response: *DEQ notified the Portland Harbor Community Coalition of the intent to hold a public hearing. The public hearing was held on July 10, 2024.*

No changes have been made to the permit or fact sheet in response to this comment.

15. Arthur F. Leskowich/ Portland Harbor CAG (May 31, 2024)

Comment 1: The application (No. 974206) for this permit was received in July 2007. Since then, the local fire Department has had a fire training facility that discharges Aqueous Film Forming Foam containing PFOS/PFAS type chemicals to the sanitary collection system without a pretreatment permit. The proposed permit does not indicate testing or monitoring limits for these newly regulated "forever chemicals". The aerated lagoon treatment does not breakdown or remove these chemicals. The intake for our drinking water system operated by the City of St Helens, is in the Columbia River approximately 1 mile downstream from the permitted outfall.

Response: *DEQ is working with the state fire marshal's office to remove and properly dispose of Aqueous Film Forming Foams containing PFAS. At this time PFAS is not included in the pretreatment program. However, this regulatory framework has been identified as a potential tool for addressing these contaminants in both EPA's and DEQ's PFAS plan. Because these regulations have not been finalized yet DEQ has not included those requirements in the current permit, nor does DEQ intend to withhold updating this permit while waiting for these regulations to be finalized. When the regulations are finalized, DEQ will make the appropriate permit modifications.*

Drinking water systems are required to monitor for some of the more common PFAS compounds. Facilities that have found these contaminants above the health advisory levels are working with the Oregon Health Authority to treat their water appropriately to protect public health.

No changes have been made to the permit or fact sheet in response to this comment.

16. Arthur F. Leskowich/ Portland Harbor CAG (May 31, 2024)

Comment 2: Recent studies and local knowledge have indicated that the liner at the bottom of the lagoon leaks and is suspected to be impacting both local ground water and adjacent surface water (Multnomah Channel).

Sediments/sludge that has been accumulating in the lagoon should be tested for toxicity. The relatively high-level average of Total Suspended Solids (50 to 75 mg/L) allowed in the discharge is what will typically carry contaminants that adhere to solids. TSS in the discharge should be tested for any possible contaminants that are suspected to have been introduced into the in the lagoon at any time in the past.

Response: *As part of this permit renewal DEQ required the facility to collect EPA's 126 Priority Pollutants as part of sampling the effluent. DEQ then conducted a reasonable potential analysis on the 126 parameters and determined the effluent would meet state water quality standards at the end of the mixing zone. DEQ has included additional monitoring for these 126 Priority*

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Pollutants in the current permit. Additionally, DEQ has included a Whole Effluent Toxicity (WET) testing condition in the current permit.

To address your concerns about the lagoon condition, DEQ has added condition 13 to Schedule D of the permit. This condition requires the permittee to conduct a lagoon leak test. If the lagoon is found to be leaking beyond the acceptable rate, the permittee will be required to conduct a Preliminary Groundwater Assessment. A due date for the completion of the lagoon leak test has been added the Schedule B, Table B1. A description of the lagoon leak test requirements has been added to Section 7 of the permit fact sheet.

17. Arthur F. Leskowich/ Portland Harbor CAG (May 31, 2024)

Comment 3: The proposed mixing zone is inadequate to protect our water and wildlife resources. I've attached a photo (dated, yet applicable) showing the distinctive path the effluent takes, flowing downstream specifically in the direction of the city's Ranney collector wells, along the shoreline of the Columbia River.

The mixing zone does not protect Designated Beneficial Uses especially for public and private water supplies, fish and aquatic life and water contact recreation Sand Island (recreation area) that is located immediately downstream of the discharge point.

Response: *DEQ notes the photo is from 1990 and reflects the discharge scenario at the time. The outfall was updated in 2005. Part of the update extended the outfall 450 feet further into the main channel, as well as the addition of a 144-foot-long diffuser. DEQ requires the effluent to meet all applicable water quality standards at the end of the mixing zone. Additionally, DEQ applies the water quality standards to protect the most sensitive designated beneficial uses. Figure 2-1 in the fact sheet has been updated to provide additional clarity on the location of the outfall and associated mixing zone. Additionally figure 3-1 has been added to the fact sheet documenting the size of the mixing zone in relation to warrior point.*

No changes have been made to the permit in responses to this comment.

18. Arthur F. Leskowich/ Portland Harbor CAG (May 31, 2024)

Comment 4: In the previous permit, the lagoon received a large amount of wastewater from the activities of the paper/pulp mill. These flows provided a dilution factor to the waste streams received from other sources that now provide a large contribution to the total discharge. All contributing industrial sources that previously were not monitored in the city's Pretreatment program should now be assessed for their impact on the system and the ability of the treatment system to reduce the influent contaminants to acceptable levels.

It has been over 20 years since the current NPDES permit for this facility was issued. There have been many changes in the industrial users, infrastructure, processes, and technology that have the possibility to influence the quality of the wastewater effluent.

Response: *As part of this permit renewal DEQ required the facility to collect EPA's 126 Priority Pollutants as part of sampling the effluent. DEQ then conducted a reasonable potential analysis on the 126 parameters and determined the effluent would meet state water quality standards at the end of the mixing zone. DEQ has included additional monitoring for these 126 Priority Pollutants in the current permit. Additionally, DEQ has included a Whole Effluent Toxicity (WET) testing condition in the current permit. Additionally, DEQ has included updated pretreatment conditions in the proposed permit.*

No changes have been made to the permit or fact sheet in response to this comment.

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19. Arthur F. Leskowich/ Portland Harbor CAG (May 31, 2024)

Comment 5: As a resident of the City of St Helens and a Member at Large on the Portland Harbor Citizens Advisory Group, I am formally requesting a Public Hearing (to be held in St Helens) to properly to address concerns and inform the public of the status of our wastewater facility.

Response: *DEQ notified the Portland Harbor Community Advisory Group of the intent to hold a public hearing. The public hearing was held on July 10, 2024.*

20. Arthur F. Leskowich/ Portland Harbor CAG (July 10, 2024)

Public Hearing Comment: "I'm going to just sort of reiterate those same comments. I didn't realize that they weren't on the record. When I when I first spoke. But again, concerns are mixing zone, I've got an aerial photo that shows the plume and circa, I would say 19… in 1990… Well, a plume that runs from our discharge point into the marinas and continues downstream. Our drinking water intake for the city is near Columbia City. That's raining well and again, with the newer deposit level parts per trillion, less than parts per trillion. We may or may not, be affecting our drinking water intake, and then we'd like to see the drinking water well on the recreational area sand island also be addressed.

So yeah, once the pretreatment program not only addressing what the fire training centers currently discharging. Because I think they may be moving away from the gross, strong PFAS. But yeah, it's been dumped into the lagoon for decades, and I would like to think that the sediments that is suggested that we're just going to measure the amount of sludge and sediment in the lagoon, we should also be doing analytical on it to see what contaminants concern are in there.

So I appreciate the opportunity to speak in the public involvement."

Response: *DEQ appreciates your participation in the public hearing process. DEQ notes the outfall was updated in 2005. Part of the update extended the outfall 450 feet further into the main channel, as well as the addition of a 144-foot-long diffuser. DEQ requires the effluent to meet all applicable water quality standards at the end of the mixing zone. Additionally, DEQ applies the water quality standards to protect the most sensitive designated beneficial uses.*

DEQ is working with the state fire marshal's office to remove and properly dispose of Aqueous Film Forming Foams containing PFAS. At this time PFAS is not included in the pretreatment program. However, this regulatory framework has been identified as a potential tool for addressing these contaminants in both EPA's and DEQ's PFAS plan. Because these regulations have not been finalized yet DEQ has not included those requirements in the current permit, nor does DEQ intend to withhold updating this permit waiting for these regulations to be finalized. When the regulations are finalized, DEQ will make the appropriate permit modifications.

No changes have been made to the permit or fact sheet in response to this comment.

21. Stephen Topaz/ Citizen (July 10, 2024)

Public Hearing Comment: "My name is Stephen Topaz. I'm a resident of Saint Helens. My background is in engineering.

You mentioned that originally this lagoon was to collect hot water with particulate in it from the mill and the sewerage from the St. Helens. The lagoon was artificially built, and it was lined with plastic of PVC. The lagoon is basically 25 foot deep. Recently the city Administration wants to turn this lagoon into a waste dump. So they've done a number of geologic tests and some of the

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tests have shown that portions of this lagoon are in a landslide area. They also have never demonstrated with their cause that the PVC membrane is intact. In fact, shortly after the membrane was placed and the lagoon was first filled. This is many years ago. The natural gas or methane is being generated by the waste material from the mill that got covered floated the membrane, so the membrane was then shot full of holes, so it would sink. They also, shortly after the levy embankment got built it was leaking, so they had to reline that with clay.

That is kind of part of it, part of the outer edge is over a liquefaction zone, but material going into the lagoon is sewerage, and right now there is no water, hot water from the Boise plant or the paper mill, except when the mill was going an operation, the mill collected in a big clarifier real crap and this got put up in a landfill about 30 miles away and this material, that is 3 miles away in the Boise landfill is now leaking out of the landfill. At one point in this, I think it's a 23-acre fill, they're collecting 5,000 gallons of leachate which DEQ has a new report on that came out June 24th and they're pumping this into the sewer system. And it goes down Sykes Road. So we've concentrated waste from the mill and there's about 30 or 40 really toxic compounds. The DEQ Report shows what the nominal rate is and what for safety and what the actual rate is. So we're dumping that back into the lagoon. Basically, the Boise gift of bad stuff keeps on giving.

The other part of this is this large container. This landfill is leaking into a couple of the feed streams and the feed streams make, they count combine into McNulty Creek. They go right beside one of the water wells. They go within 50 feet of the water well over on old Portland Road.

Now the one comment that was made. That is dangerous, if you would, when they were doing a geologic test to turn this lagoon into a waste pit, they found out that it was leaking. And there's basically the lagoon is not a tight operation with the fluids going out a drainpipe into a specific part of the Columbia River.

The other thing that has seems to be overlooked is, the river goes up and down, and when it comes up it means the water is flowing from the sea up the river past us. So a lot of the material that we dump into the river originally goes from St. Helens towards Columbia River, going down river when the tide comes up this same material now goes past St. Helens towards Portland. I don't know if it gets to Portland, but the waste material is going up and down the Columbia River average flow is going down the Columbia River, downstream. The other point that has missed in a lot of these it is spoken that the river goes up and down 2 feet. In reality the river goes up and down 20 feet, but no one wants to talk about the seasonal flow with the seasonal flow and the fact that it's leaking. We are pumping water from the Columbia River, Multnomah Channel, underneath this sewer pond, when the river goes down it comes out as groundwater into the river. This is not coming out the outflow down our pipe, so we have 2 contamination routes for getting the water, the sewerage into the Columbia River, one we know about the other we are just dumping.

If you take a look at the aerial photographs, you'll see that the material coming out through the groundwater sticks along the face of St. Helens, and it basically keeps on the Oregon side of the Columbia River quite some distance. You can see this when you fly over the air, this area with an airplane. You can also see the plume coming out of the outfall, which is almost in the Columbia River Channel on a good day. So this material that's coming out has the ancient stored up concentrated industrial waste in it, as well as the present material.

There is a problem with the analysis of your chemistry and I'm going to now point out that once upon a time I was in the artificial kidney business and we'll I'm gonna use the compound chloride. We need a certain amount of chlorides in our body. If it goes higher than that, we have a problem, under the rules. We have here an acceptable chloride test. You say, zinc chloride, such and such

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were, okay. Copper chloride, such and such a test were, okay zinc chloride, okay. The problem is in the body, all those chlorides add up. So now I have 3 additions of chloride. They're attached to different metal problems. But in the legal sense, I, we only look at the chloride as attached to one item. The fact we have 3 other items are adding, chloride is not part of the legality, the legal acceptability, of what we're dumping into the river. We have some real problems with the analysis of what is a toxic material, because a lot of these materials add up.

Now the next part of the toxic chemicals. When the Mole Foster was surveying the lagoon, they took a number of cores, I think, about 30, and each core, they took about 40 chemical tests, and they were all run through a mass spectrometer. And there's a big list in their report. The majority of these compounds that they're showing, and they had a list of what was acceptable and what is not, is not in your requirements for DEQ for sewerage. So we have a lot more compounds that are toxic. We're above toxic levels that are not required for examination in your permitting of this test. And I think that should be looked at, too.

But yeah, right now, the edge of this lagoon is, if you look at the DOGAMI maps as an avalanche area, the deep spots 283 feet below here, and in this report for turning the lagoon into a waste dump, it was noticed by the geologist. If we have a small earthquake, the lagoon is going to fail, and we're going to dump everything into the river. That is not part of your permit. But then this lagoon was built about in the end of the 1960s. When some of these details were not made obvious. So we have a time bomb. Whether it's a toxic waste pit or a sewer because of the toxic waste that we've accumulated and the toxic waste that we're adding that are not under the DEQ requirement for good or bad. We also know from our test course that there's material rotting underneath this lagoon to the point where it raises the ground temperature about 10 degrees. And that is again, we have an organic, active process that's making methane. Some of the test wells in our last test indicated that the fluid they were testing was effervescent. So, we have enough methane underneath this lagoon to saturate the water. The aqueous base and fizz when you bring it out, and I don't think the methane content is one of the things we test for.

Thank you. Have a good day."

Response: *DEQ appreciates your participation in the public hearing process. To address your concerns about the lagoon condition DEQ has added condition 13 to Schedule D of the permit. This condition requires the permittee to conduct a lagoon leak test. If the lagoon is found to be leaking beyond the acceptable rate, the permittee will be required to conduct a Preliminary Groundwater Assessment. A due date for the completion of the lagoon leak test has been added the Schedule B, Table B1. A description of the lagoon leak test requirements has been added to Section 7 of the permit fact sheet.*

Landfills are not covered as a part of a NPDES permit. The landfill identified in this comment is regulated by a solid waste permit, permit number 1127. Regarding the landfill leachate entering the wastewater treatment system, lagoon cores, and the analysis of toxic materials: as part of this permit renewal DEQ required the facility to collect EPA's 126 Priority Pollutants as part of sampling the effluent. DEQ then conducted a reasonable potential analysis on the 126 parameters and determined the effluent would meet state water quality standards at the end of the mixing zone. DEQ has included additional monitoring for these 126 Priority Pollutants in the current permit. Additionally, DEQ has included a Whole Effluent Toxicity (WET) testing condition in the current permit to address aquatic toxicity from the effluent as a whole and to ensure that the effluent does not contribute toxics in toxic amounts.

In regard to tidal reversal DEQ requires the effluent to meet all applicable water quality standards at the end of the mixing zone. The mixing zone for this permit accounts for tidal reversal of the Columbia River.

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22. Stephen Topaz/ Citizen (July 11, 2024)

Post Public Hearing Comment: The present sewer treatment plant was setup to process hot industrial water from the paper mill and human sewage from the city of St. Helens. At this time the mill is closed, and the immediate waste mill water is not included in the treatment process. A step backwards into the changes that the mill wastewater treatment had to undertake when it transitioned from dumping into the river to pumping into the wastewater lagoon are important. The new wastewater treatment required that many on the solids had to be removed from the process stream and dumped in a solid waste dump.

This dump was a few miles from the papermill here in St. Helens. This dump, 23 acres, is now and will be for some time leaching out toxic waste products which are sent to the sewer treatment plant via the sewer system. Basically the St. Helens sewer treatment plant is still processing the mill waste through a delayed processing mechanism. The type of chemical makeup on this material is outline in a DEQ report dated June 24, 2024, **Environmental site ID 4327, Boise Cascade Clarifier Solids Landfill**. This report shows data entered as of June 24, 2024, at 11:15:08 AM

Response: *Landfills are not regulated under a NPDES permit. The landfill identified in this comment is regulated by a solid waste permit, permit number 1127. Regarding the landfill leachate entering the wastewater treatment system, lagoon cores, and the analysis of toxic materials: As part of this permit renewal DEQ required the facility to collect EPA's 126 Priority Pollutants as part of sampling the effluent. DEQ then conducted a reasonable potential analysis on the 126 parameters and determined the effluent would meet state water quality standards at the end of the mixing zone. DEQ has included additional monitoring for these 126 Priority Pollutants in the current permit. Additionally, DEQ has included a Whole Effluent Toxicity (WET) testing condition in the current permit to address aquatic toxicity from the effluent as a whole and to ensure that the effluent does not contribute toxics in toxic amounts.*

No changes have been made to the permit or fact sheet in response to this comment.

Alternative formats

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.

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