

Issue Date: April 15, 2022  
Effective Date: June 1, 2022  
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## State Waste Discharge Permit Number ST0045535

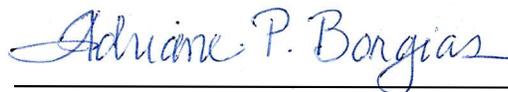
State of Washington  
DEPARTMENT OF ECOLOGY  
Eastern Regional Office  
4601 N. Monroe Street  
Spokane, Washington 99205-1265

In compliance with the provisions of the  
State of Washington Water Pollution Control Law  
Chapter 90.48 Revised Code of Washington, as amended,

AstaReal, Inc.  
210 E. Third Avenue, Suite C  
Moses Lake, Washington 98837

is authorized to discharge wastewater in accordance with the special and general conditions which follow.

Facility Location: 7761 Randolph Road NE, Moses Lake, WA 98837	SIC Code: 0812 Food Crops Grown Under Cover NAICS Code: 111419 Other Food Crops Grown Under Cover
Industry Type: Algae Manufacturing POITW Receiving Discharge: Port of Moses Lake	Significant Industrial User



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Water Quality Section Manager  
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Washington State Department of Ecology

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## Summary of Permit Report Submittals

Refer to the Special and General Conditions of this permit for additional submittal requirements.

**Table 1: Summary of Permit Report Submittals**

Permit Section	Submittal	Frequency	First Submittal Date
S3.A	Discharge Monitoring Report (DMR)	Monthly	July 15, 2022
S3.F	Reporting Permit Violations – Written Report Within 5-Days	As necessary	-
S3.G	Other Reporting	As necessary	-
S4.A.1.	O&M Manual Update	1/permit cycle	December 15, 2022
S4.A.2	O&M Manual Changes or Updates	As necessary	-
S4.B	Reporting Bypasses	As necessary	-
S8.	Application for Permit Renewal	1/permit cycle	May 31, 2026
S10.A.1.	Spill Control Plan Update	1/permit cycle	December 15, 2022
S10.A.2.	Spill Control Plan Revisions or Updates	As necessary	-
S11.A.1.	Slug Discharge Control Plan Update	1/permit cycle	December 15, 2022
S11.A.2.	Slug Discharge Revisions or Updates	As necessary	-
G1.	Notice of Change in Authorization	As necessary	-
G4.	Permit Application for Substantive Changes to the Discharge	As necessary	-
G5.	Engineering Report for Construction or Modification Activities	As necessary	-
G7.	Notice of Permit Transfer	As necessary	-
G8.	Payment of Fees	As necessary	-
G10.	Duty to Provide Information	As necessary	-

## Special Conditions

### S1. Discharge limits

All discharges and activities authorized by this permit must comply with the terms and conditions of this permit. The discharge of any of the following pollutants more frequently than, or at a concentration in excess of, that authorized by this permit (based on the Port of Moses Lake revised agreement, dated August 11, 2021) or as otherwise specified in the Publicly Owned Industrial Treatment Works (POITW) Port of Moses Lake's Resolution No. 1336, dated December 2014, violates the terms and conditions of this permit.

The Permittee is authorized to discharge wastewater to the Port of Moses Lake POITW sewer system subject to the following limits:

**Table 2: Effluent Limits**

Parameter	Average Monthly <sup>a</sup>	Maximum Daily <sup>b</sup>
Flow	69,004 gallons per day	82,805 gallons per day
BOD <sub>5</sub>	600 mg/L	600 mg/L
Total Dissolved Solids (TDS)	2,200 mg/L	2,200 mg/L
Molybdenum	1.0 mg/L	1.0 mg/L
Boron	2.0 mg/L	2.0 mg/L
Chloride	500 mg/L	500 mg/L
Sodium	200 mg/L	200 mg/L
Total Phosphorus	30 mg/L	30 mg/L
Total Nitrogen (TKN+NO <sub>3</sub> -N)	15mg/L	15mg/L
Total Kjeldahl Nitrogen	15 mg/L	15 mg/L
Conductivity	3,200 Micromhos/cm	3,200 Micromhos/cm
Manganese	1.0 mg/L	2.0 mg/L
Fats, Oil, Grease	40 mg/L	40 mg/L
Parameter	Minimum	Maximum
pH	5.0 standard units	10.0 standard units

Table 2 Footnotes:

<sup>a</sup> Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month.

To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.

<sup>b</sup> Maximum daily effluent limit means the highest allowable daily discharge. The daily discharge means the maximum discharge of a pollutant measured during a calendar day. For pollutants with limits expressed in units of mass, calculate the daily discharge as the total mass of the pollutant discharged over the day. For other units of measurement, the daily discharge is the average measurement of the pollutant over the day. This does not apply to pH.

## S2. Monitoring requirements

### S2.A. Monitoring schedule

The Permittee must monitor in accordance with the following schedule and the requirements specified in Appendix A.

**Table 3: Final Wastewater Effluent**

Parameter	Units	Sampling Frequency	Sample Type
Flow, (Average Monthly, Maximum Daily)	Gallons per day (GPD)	Continuous <sup>a</sup>	Metered
Volume (Total Monthly, Total Annual <sup>b</sup> , Annual Average <sup>c</sup> )	Millions Gallons (MG)	Recorded <sup>d</sup>	Calculated
pH (Minimum; Maximum) <sup>e</sup>	Standard Units	Continuous <sup>a</sup>	Metered
BOD <sub>5</sub> (Average Monthly, Maximum Daily)	mg/L	2/month	24-Hour Composite <sup>f</sup>
BOD <sub>5</sub> (Average Monthly, Maximum Daily)	lbs/day <sup>g</sup>	2/month	Calculated
BOD <sub>5</sub> (Total Monthly, Total Annual <sup>b</sup> , Annual Average <sup>c</sup> )	lbs	Recorded <sup>d</sup>	Calculated
Total Dissolved Solids (TDS) (Average Monthly, Maximum Daily)	mg/L	1/month	24-Hour Composite <sup>f</sup>
Total Dissolved Solids (TDS) (Average Monthly; Maximum Daily)	lbs/day <sup>g</sup>	1/month	Calculated
TDS (Total Monthly, Total Annual <sup>b</sup> , Annual Average <sup>c</sup> )	lbs	Recorded <sup>d</sup>	Calculated
Molybdenum (Average Monthly; Maximum Daily)	mg/L	1/month	24-Hour Composite <sup>f</sup>
Molybdenum (Average Monthly; Maximum Daily)	lbs/day <sup>g</sup>	1/month	Calculated

Parameter	Units	Sampling Frequency	Sample Type
Molybdenum (Total Monthly, Total Annual <sup>b</sup> , Annual Average <sup>c</sup> )	lbs	Recorded <sup>d</sup>	Calculated
Boron (Average Monthly, Maximum Daily)	mg/L	1/month	24-Hour Composite <sup>f</sup>
Boron (Average Monthly, Maximum Daily)	lbs/day <sup>g</sup>	1/month	Calculated
Boron (Total Monthly, Total Annual <sup>b</sup> , Annual Average <sup>c</sup> )	lbs	Recorded <sup>d</sup>	Calculated
Chloride (Average Monthly, Maximum Daily)	mg/L	1/month	24-Hour Composite <sup>f</sup>
Chloride (Average Monthly, Maximum Daily)	lbs/day <sup>g</sup>	1/month	Calculated
Chloride (Total Monthly, Total Annual <sup>b</sup> , Annual Average <sup>c</sup> )	lbs	Recorded <sup>d</sup>	Calculated
Sodium (Average Monthly, Maximum Daily)	mg/L	1/month	24-Hour Composite <sup>f</sup>
Sodium (Average Monthly, Maximum Daily)	lbs/day <sup>g</sup>	1/month	Calculated
Sodium (Total Monthly, Total Annual <sup>b</sup> , Annual Average <sup>c</sup> )	lbs	Recorded <sup>d</sup>	Calculated
Total Phosphorous (Average Monthly, Maximum Daily)	mg/L	1/month	24-Hour Composite <sup>f</sup>
Total Phosphorous (Average Monthly, Maximum Daily)	lbs/day <sup>g</sup>	1/month	Calculated
Total Phosphorous (Total Monthly, Total Annual <sup>b</sup> , Annual Average <sup>c</sup> )	lbs	Recorded <sup>d</sup>	Calculated
Total Nitrogen (Average Monthly, Maximum Daily)	mg/L	1/month	24-Hour Composite <sup>f</sup>
Total Nitrogen (Average Monthly, Maximum Daily)	lbs/day <sup>g</sup>	1/month	Calculated
Total Nitrogen (Total Monthly, Total Annual <sup>b</sup> , Annual Average <sup>c</sup> )	lbs	Recorded <sup>d</sup>	Calculated

Parameter	Units	Sampling Frequency	Sample Type
Total Kjeldahl Nitrogen (Average Monthly, Maximum Daily)	mg/L	1/month	24-Hour Composite <sup>f</sup>
Conductivity	mg/L	1/month	24-Hour Composite <sup>f</sup>
Manganese	mg/L	1/month	24-Hour Composite <sup>f</sup>
Fats, Oil, Grease (FOG)	mg/L	1/month	Grab <sup>h</sup>
Aluminium	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Arsenic (total)	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Beryllium	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Cadmium	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Calcium	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Chromium (total)	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Cobalt	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Copper (total)	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Fluoride	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Iron	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Lead (total)	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Lithium	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Magnesium	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Nickel (total)	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Selenium (total)	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Sodium Adsorption Ratio (SAR)	Ratio	1/year <sup>i</sup>	Calculated
Vanadium	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Zinc (total)	mg/L	1/year <sup>i</sup>	24-Hour Composite <sup>f</sup>
Cyanide	µg/L	Once per permit cycle <sup>j</sup>	Grab <sup>h</sup>
Total Phenolic Compounds	µg/L	Once per permit cycle <sup>j</sup>	Grab <sup>h</sup>
Priority Pollutants (PP) – Total Metals	µg/L; ng/L for mercury	Once per permit cycle <sup>j</sup>	24-Hour Composite <sup>f</sup> Grab for mercury <sup>h</sup>

Parameter	Units	Sampling Frequency	Sample Type
PP – Volatile Organic Compounds	µg/L	Once per permit cycle <sup>j</sup>	Grab <sup>h</sup>
PP – Acid-extractable Compounds	µg/L	Once per permit cycle <sup>j</sup>	24-Hour Composite <sup>f</sup>
PP – Base-neutral Compounds	µg/L	Once per permit cycle <sup>j</sup>	24-Hour Composite <sup>f</sup>
PP - Dioxin	pg/L	Once per permit cycle <sup>j</sup>	24-Hour Composite <sup>f</sup>
PP – Pesticides/PCBs	µg/L	Once per permit cycle <sup>j</sup>	24-Hour Composite <sup>f</sup>

Table 3 Footnotes:

<sup>a</sup> Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The time interval for the associated data logger must be no greater than 30 minutes. The Permittee must sample each batch before discharge when continuous monitoring is not possible.

<sup>b</sup> Total Annual discharge volume is a running total of flow for the calendar year (January through December) reporting the total each month on the DMR.

<sup>c</sup> Annual Average is an average of flow for the calendar year (January through December) reporting the average each month on the DMR.

<sup>d</sup> Recorded means daily flow values are not reported on the Discharge Monitoring Report; only a summary value is reported.

<sup>e</sup> Report the instantaneous minimum and maximum pH monthly. Do not average pH values.

<sup>f</sup> 24-Hour Composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample.

<sup>g</sup> lbs/day = Concentration (in mg/L) X Flow (in gpd) X 8.34 ÷ 1,000,000

<sup>h</sup> Grab means an individual sample collected over a 15-minute, or less, period.

<sup>i</sup> 1/year samples should be taken one time during the calendar year with data submitted by January 15 each year.

<sup>j</sup> Submit once per permit cycle monitoring results with the permit renewal application as specified in Special Condition S8 as an attachment to the application form.

## S2.B. Sampling and analytical procedures

Samples and measurements taken to meet the requirements of this permit must represent the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets and maintenance-related conditions affecting effluent quality.

Sampling and analytical methods used to meet the water and wastewater monitoring requirements specified in this permit must conform to the latest revision of the following rules and documents unless otherwise specified in this permit or approved in writing by Ecology.

- Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136
- Standard Methods for the Examination of Water and Wastewater (APHA)

### **S2.C. Flow measurement, field measurement, and continuous monitoring devices**

The Permittee must:

1. Select and use appropriate flow measurement, field measurement, and continuous monitoring devices and methods consistent with accepted scientific practices.
2. Install, calibrate, and maintain these devices to ensure the accuracy of the measurements is consistent with the accepted industry standard, the manufacturer's recommendation, and approved O&M manual procedures for the device and the wastestream.
3. Calibrate continuous monitoring instruments weekly unless it can demonstrate a longer period is sufficient based on monitoring records.

The Permittee:

- a. May calibrate apparatus for continuous monitoring of dissolved oxygen by air calibration.
  - b. Must calibrate continuous pH measurement instruments using a grab sample analyzed in the lab with a pH meter calibrated with standard buffers and analyzed within 15 minutes of sampling.
  - c. Must calibrate continuous chlorine measurement instruments using a grab sample analyzed in the laboratory within 15 minutes of sampling.
4. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
  5. Establish a calibration frequency for each device or instrument in the O&M manual that conforms to the frequency recommended by the manufacturer.
  6. Calibrate flow-monitoring devices at a minimum frequency of at least one calibration per year.
  7. Maintain calibration records for at least three years.

### **S2.D. Laboratory accreditation**

The Permittee must ensure that all monitoring data required by Ecology for permit specified parameters is prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, 'Accreditation of Environmental Laboratories'. Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement.

### **S2.E. Request for reduction in monitoring**

The Permittee may request a reduction of the sampling frequency after 12 months of monitoring. Ecology will review each request and at its discretion grant the request when it reissues the permit or by a permit modification.

The Permittee must:

1. Provide a written request.
2. Clearly state the parameters for which it is requesting reduced monitoring.
3. Clearly state the justification for the reduction.

## **S3. Reporting and recording requirements**

The Permittee must monitor and report in accordance with the following conditions. Falsification of information submitted to Ecology is a violation of the terms and conditions of this permit.

### **S3.A. Discharge monitoring reports**

The first monitoring period begins on the effective date of the permit (unless otherwise specified).

The Permittee must:

1. Summarize, report, and submit monitoring data obtained during each monitoring period on the electronic discharge monitoring report (DMR) form provided by Ecology within the Water Quality Permitting Portal. Include data for each of the parameters tabulated in Special Condition S2 and as required by the form. Report a value for each day sampling occurred (unless specifically exempted in the permit) and for the summary values (when applicable) included on the electronic form.

To find out more information and [to sign up](https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance) for the **Water Quality Permitting Portal** go to <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance>.

2. Enter the “No Discharge” reporting code for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate, if the Permittee did not discharge wastewater or a specific pollutant during a given monitoring period.
3. Report single analytical values below detection as “less than the detection level (DL)” by entering < followed by the numeric value of the detection level (e.g. < 2.0) on the DMR. If the method used did not meet the minimum DL and quantitation level (QL) identified in the permit, report the actual QL and DL in the comments or in the location provided.
4. Report the test method used for analysis in the comments if the laboratory used an alternative method not specified in the permit and as allowed in Appendix A.

5. Calculate average values and calculated total values (unless otherwise specified in the permit) using:
  - a. The reported numeric value for all parameters measured between the agency-required detection value and the agency-required quantitation value.
  - b. One-half the detection value (for values reported below detection) if the lab detected the parameter in another sample from the same monitoring point for the reporting period.
  - c. Zero (for values reported below detection) if the lab did not detect the parameter in another sample for the reporting period.
6. Report single-sample grouped parameters (for example: priority pollutants, PAHs, pulp and paper chlorophenolics, TTOs) on the WQWebDMR form and include: sample date, concentration detected, detection limit (DL) (as necessary), and laboratory quantitation level (QL) (as necessary).

The Permittee must also submit an electronic copy of the laboratory report as an attachment using WQWebDMR. The contract laboratory reports must also include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter.

7. Ensure that DMRs are electronically submitted no later than the dates specified below, unless otherwise specified in this permit.
8. Submit DMRs for parameters with the monitoring frequencies specified in S2 (monthly, quarterly, annual, etc.) at the reporting schedule identified below.

The Permittee must:

- a. Submit **monthly DMRs** by the 15<sup>th</sup> day of the following month.
  - b. Submit **1/year DMRs** by January 15 for the previous calendar year. The annual sampling period is the calendar year.
  - c. Submit **permit renewal application monitoring data** with the permit renewal application as specified in Special Condition S8 **by 05/31/2026**.
9. Submit copies of monthly DMRs to the Port of Moses Lake, 7810 Andrews St. N.E., Suite 200, Moses Lake, Washington 98837-3204. The Permittee may send their DMRs electronically if the Port agrees to this process.
  10. Submit DMR reports to Ecology online using Ecology's electronic WQWebDMR submittal forms (electronic DMRs) as required above.

### **S3.B. Permit Submittals and Schedules**

The Permittee must use the Water Quality Permitting Portal – Permit Submittals application (unless otherwise specified in the permit) to submit all other written permit-required reports by the date specified in the permit.

When another permit condition requires submittal of a paper (hard-copy) report, the Permittee must ensure that it is postmarked or received by Ecology no later than the dates specified by this permit. Send these paper reports to Ecology at:

Water Quality Program  
Department of Ecology  
Eastern Regional Office  
4601 N. Monroe Street  
Spokane, Washington 99205-1265

### **S3.C. Records retention**

The Permittee must retain records of all monitoring information for a **minimum of three years**. Such information must include all calibration and maintenance records and all original 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. The Permittee must extend this period of retention during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

### **S3.D. Recording of results**

For each measurement or sample taken, the Permittee must record the following information:

1. The date, exact place, method, and time of sampling or measurement.
2. The individual who performed the sampling or measurement.
3. The dates the analyses were performed.
4. The individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

### **S3.E. Additional monitoring by the Permittee**

If the Permittee monitors any pollutant more frequently than required by Condition S2 of this permit, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's DMR unless otherwise specified by Condition S2.

### **S3.F. Reporting permit violations**

The Permittee must take the following actions when it violates or is unable to comply with any permit condition:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.
2. If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to Ecology within 30 days of sampling.

**a. Immediate reporting**

The Permittee must report any noncompliance that may endanger health or the environment immediately to the Department of Ecology's Regional Office 24-hour number listed below:

Ecology Eastern Regional Office (509) 329-3400

**b. Twenty-four-hour reporting**

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at the telephone numbers listed above, within 24 hours from the time the Permittee becomes aware of any of the following circumstances.

The Permittee must report:

1. Any noncompliance that may endanger health or the environment, unless previously reported under immediate reporting requirements.
2. Any unanticipated bypass that causes an exceedance of an effluent limit in the permit (See Part S4.B., "Bypass Procedures").
3. Any upset that causes an exceedance of an effluent limit in the permit. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
4. Any violation of a maximum daily or instantaneous maximum discharge limit for any of the pollutants in Section S1.A of this permit.
5. Any overflow prior to the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limit in the permit. This requirement does not include industrial process wastewater overflows to impermeable surfaces which are collected and routed to the treatment works.

**c. Report within five days**

The Permittee must also submit a written report within five days of the time that the Permittee becomes aware of any reportable event under subparts a or b, above.

The report must contain:

1. A description of the noncompliance and its cause.
2. The period of noncompliance, including exact dates and times.

3. The estimated time the Permittee expects the noncompliance to continue if not yet corrected.
4. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
5. If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

**d. Waiver of written reports**

Ecology may waive the written report required in subpart c, above, on a case-by-case basis upon request if the Permittee has submitted a timely oral report.

**e. All other permit violation reporting**

The Permittee must report all permit violations, which do not require immediate or within 24 hours reporting, when it submits monitoring reports for S3.A ("Reporting"). The reports must contain the information listed in subpart c, above. Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

**S3.G. Other reporting**

**a. Spills of Oil or Hazardous Materials**

The Permittee must [Report a spill](#) of oil or hazardous materials in accordance with the requirements of RCW 90.56.280 and chapter 173-303-145 WAC.

Instructions on how to report a spill are available on the Ecology's website at <https://ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue/Report-a-spill>.

**b. Failure to submit relevant or correct facts**

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to Ecology, it must submit such facts or information promptly.

**S3.H. Maintaining a copy of this permit**

The Permittee must keep a copy of this permit at the facility and make it available upon request to Ecology inspectors.

**S3.I. Dangerous waste discharge notification**

The Permittee must notify the publicly owned treatment works (POTW) and Ecology in writing of the intent to discharge into the POTW any substance designated as a dangerous waste in accordance with the provisions of WAC 173-303-070.

It must make this notification at least 90 days prior to the date that it proposes to initiate the discharge. The Permittee must not discharge this substance until authorized by Ecology and the POTW. It must also comply with the notification requirements of Special Condition S8 and General Condition G4.

### **S3.J. Spill notification**

The Permittee must notify the POTW immediately (as soon as discovered) of all discharges that could cause problems to the POTW, such as process spills and unauthorized discharges (including slug discharges).

### **S3.K. Changes in Contract**

The Permittee must notify Ecology immediately of any changes in the user agreement or contract with the POTW.

## **S4. Operation and maintenance**

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

### **S4.A. Operations and maintenance manual**

#### **1. O&M manual submittal and requirements**

The Permittee must:

- a. **Update the existing Operations and Maintenance (O&M) Manual** that meets the requirements of WAC 173-240-150 and submit it to Ecology for review and approval **by December 15, 2022.**
- b. Submit to Ecology for review and approval substantial changes or updates to the O&M Manual.
- c. Keep the approved O&M Manual at the permitted facility.
- d. Follow the instructions and procedures of this manual.

#### **2. O&M manual components**

In addition to the requirements of WAC 173-240-150, the O&M manual must include:

- a. Emergency procedures for plant shutdown and cleanup in event of wastewater system upset, spill, failure, or demand by the publicly owned treatment works (POTW) treating the discharge.
- b. Wastewater system maintenance procedures that contribute to the generation of process wastewater.

- c. Any directions to maintenance staff when cleaning, or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (for example, defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine.)
- d. Wastewater sampling protocols and procedures for compliance with the sampling and reporting requirements in the wastewater discharge permit.
- e. Minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit.
- f. Treatment plant process control monitoring schedule.

#### **S4.B. Bypass procedures**

This permit prohibits a bypass, which is the intentional diversion of waste streams from any portion of a treatment facility. Ecology may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies.

1. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

This permit authorizes a bypass if it allows for essential maintenance and does not have the potential to cause violations of limits or other conditions of this permit, or adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least ten days before the date of the bypass.

2. Bypass is unavoidable, unanticipated, and results in noncompliance of this permit.

This permit authorizes such a bypass only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
- b. No feasible alternatives to the bypass exist, such as:
  - The use of auxiliary treatment facilities.
  - Retention of untreated wastes.
  - Stopping production.
  - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass.
  - Transport of untreated wastes to another treatment facility.

- c. The Permittee has properly notified Ecology of the bypass as required in Condition S3.E of this permit.
3. If bypass is anticipated and has the potential to result in noncompliance of this permit.
- a. The Permittee must notify Ecology at least 30 days before the planned date of bypass.

The notice must contain:

- A description of the bypass and its cause.
  - An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
  - A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
  - The minimum and maximum duration of bypass under each alternative.
  - A recommendation as to the preferred alternative for conducting the bypass.
  - The projected date of bypass initiation.
  - A statement of compliance with SEPA.
  - A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.
  - Details of the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.
- b. For probable construction bypasses, the Permittee must notify Ecology of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during the project planning and design process. The project-specific engineering report or facilities plan as well as the plans and specifications must include details of probable construction bypasses to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.
  - c. Ecology will consider the following prior to issuing an administrative order for this type of bypass:
    - If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
    - If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
    - If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve or deny the request. Ecology will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Ecology will approve a request to bypass by issuing an administrative order under RCW 90.48.120.

## **S5. Prohibited discharges**

The Permittee must comply with these General and Specific Prohibitions.

### **S5.A. General prohibitions**

The Permittee must not introduce into the POTW pollutant(s), which cause Pass Through or Interference.

### **S5.B. Specific prohibitions**

In addition, the Permittee must not introduce the following into the POTW:

1. Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, waste streams with a closed cup flashpoint of less than 60 degrees C (140 degrees F) using the test methods specified in 40 CFR 261.21
2. Solid or viscous pollutants in amounts, which will cause obstruction to the flow in the POTW resulting in interference
3. Any pollutant (including oxygen-demanding pollutants (BOD<sub>5</sub>, etc.), released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the POTW
4. Heat in amounts which will inhibit biological activity in the POTW resulting in interference, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees C (104 degrees F) unless the approval authority, upon request of the POTW, approves alternative temperature limits
5. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through
6. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems
7. Any trucked or hauled pollutants, except at discharge points designated by the POTW
8. Pollutants that will cause corrosive structural damage to the POTW.

### **S5.C. Prohibited unless approved**

Any of the following discharges are prohibited unless approved by Ecology under extraordinary circumstances (such as a lack of direct discharge alternatives due to combined sewer service or a need to augment sewage flows due to septic conditions):

1. Noncontact cooling water in significant volumes
2. Storm water and other direct inflow sources
3. Wastewaters significantly affecting system hydraulic loading, which do not require treatment or would not be afforded a significant degree of treatment by the system
4. The discharge of dangerous wastes as defined in Chapter 173-303 WAC (Unless specifically authorized in this permit)

## **S6. Dilution prohibited**

The Permittee must not dilute the wastewater discharge with stormwater or increase the use of potable water, process water, noncontact cooling water, or, in any way, attempt to dilute an effluent as a partial or complete substitute for adequate treatment to achieve compliance with the limits contained in this permit.

## **S7. Solid waste disposal**

### **S7.A. Solid waste handling**

The Permittee must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

### **S7.B. Leachate**

The Permittee must not allow leachate from its solid waste material to enter state waters without providing all known, available, and reasonable methods of treatment, nor allow such leachate to cause violations of the State Surface Water Quality Standards, Chapter 173-201A WAC, or the State Ground Water Quality Standards, Chapter 173-200 WAC. The Permittee must apply for a permit or permit modification as may be required for such discharges to state ground or surface waters.

## **S8. Application for permit renewal or modification for facility changes**

The Permittee must submit an application for renewal of this permit **by May 31, 2026**.

Mail the **original, signed application** to the Water Quality Permit Coordinator, Eastern Regional Office, Department of Ecology, 4601 N. Monroe Street, Spokane, Washington 99205.

Send an electronic copy of the application (preferably as a PDF) by email to the Permit Coordinator at [stra461@ecy.wa.gov](mailto:stra461@ecy.wa.gov). Scan any attachments to the application and submit them with the application.

The Permittee must also submit a new application or addendum at least 180 days prior to commencement of discharges, resulting from the activities listed below, which may result in permit violations. These activities include any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility.

## **S9. Non-routine and unanticipated discharges**

1. Beginning on the effective date of this permit, the Permittee is authorized to discharge non-routine wastewater on a case-by-case basis to the sanitary sewer if approved by Ecology and the POTW. Prior to any such discharge, the Permittee must contact Ecology and **at a minimum** provide the following information:
  - a. The proposed discharge location
  - b. The nature of the activity that will generate the discharge
  - c. Any alternatives to the discharge, such as reuse, storage, or recycling of the water
  - d. The total volume of water it expects to discharge
  - e. The results of the chemical analysis of the water
  - f. The date of proposed discharge
  - g. The expected rate of discharge discharged, in gallons per day
  - h. The expected rate of discharge in gallons per minute for discharges greater than 20,000 gallons
2. The Permittee must analyze the water for all constituents limited for the discharge and report them as required by subpart 1.e above. The analysis must also include any parameter deemed necessary by Ecology. All discharges must comply with the effluent limits as established in Condition S1 of this permit and any other limits imposed by Ecology.
3. The discharge cannot proceed until Ecology has reviewed the information provided and has authorized the discharge by letter to the Permittee or by an Administrative Order.

## **S10. Spill control plan**

### **S10.A. Spill control plan submittals and requirements**

The Permittee must:

1. Submit to Ecology an **update to the existing spill control plan by December 15, 2022.**
2. Submit all revisions or updates of this existing plan to Ecology for review and approval.
3. Follow the plan and any supplements throughout the term of the permit.
4. Submit updates and changes electronically through the WQWebPortal.

### **S10.B. Spill control plan components**

The spill control plan must include the following:

1. A list of all oil and petroleum products and other materials used and/or stored on-site, which when spilled, or otherwise released into the environment, designate as Dangerous Waste (DW) or Extremely Hazardous Waste (EHW) by the procedures set forth in WAC 173-303-070.

Include other materials used and/or stored on-site, which may become pollutants or cause pollution upon reaching state's waters.

2. A description of preventive measures and facilities (including an overall facility plot showing drainage patterns) which prevent, contain, or treat spills of these materials.
3. A description of the reporting system the Permittee will use to alert responsible managers and legal authorities in the event of a spill.
4. A description of operator training to implement the plan.

The Permittee may submit plans and manuals required by 40 CFR Part 112, contingency plans required by Chapter 173-303 WAC, or other plans required by other agencies, which meet the intent of this section.

## **S11. Slug discharge control plan**

### **S11.A. Slug discharge control plan submittal and requirements**

The Permittee must:

1. Submit to Ecology an **update to the existing slug discharge control plan by December 15, 2022.**
2. Submit all revisions or updates of this plan to Ecology for review and approval.
3. Keep the current approved plan on the plant site and make it readily available to facility personnel.
4. Follow the approved plan and any approved supplements throughout the term of the permit.

### **S11.B. Slug discharge control plan components**

The slug discharge control plan must include the following information and procedures relating to the prevention of unauthorized slug discharges; it must include:

1. A description of a reporting system the Permittee will use to immediately notify facility management, the POTW operator, and appropriate state, federal, and local authorities of any slug discharges, and provisions to provide a written follow-up report within five days.
2. A description of operator training, equipment, and facilities (including overall facility plan) for preventing, containing, or treating slug discharges.
3. Procedures to prevent adverse impact from accidental spills including:
  - a. Inspection and maintenance of storage areas
  - b. Handling and transfer of materials
  - c. Loading and unloading operations
  - d. Control of plant site run-off

- e. Worker training
  - f. Building of containment structures or equipment
  - g. Measures for containing toxic organic pollutants (including solvents)
  - h. Measures and equipment for emergency response
4. A list of all raw materials, products, chemicals, and hazardous materials used, processed, or stored at the facility; the normal quantity maintained on the premises for each listed material; and a map showing where they are located.
  5. A description of discharge practices for batch and continuous processes under normal and non-routine circumstances.
  6. A brief description of any unauthorized discharges which occurred during the 36-month period preceding the effective date of this permit and subsequent measures taken by Permittee to prevent or to reduce the possibility of further unauthorized discharges.
  7. An implementation schedule including additional operator training and procurement and installation of equipment or facilities required to properly implement the plan.

## General Conditions

### G1. Signatory requirements

All applications, reports, or information submitted to Ecology must be signed as follows:

1. All permit applications must be signed by either a principal executive officer or ranking elected official.
2. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by the person described above and is submitted to Ecology at the time of authorization, and
  - b. The authorization specifies either a named individual or any individual occupying a named position.
3. Changes to authorization. If an authorization under paragraph G1.2. above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under this section must make the following certification:

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

### G2. Right of entry

Representatives of Ecology have the right to enter at all reasonable times in or upon any property, public or private, for the purpose of inspecting and investigating conditions relating to the pollution or the possible pollution of any waters of the state. Reasonable times include normal business hours; hours during which production, treatment, or discharge occurs; or times when Ecology suspects a violation requiring immediate inspection. Representatives of Ecology must be allowed to have access to, and copy at reasonable cost, any records required to be kept under terms and conditions of the permit; to inspect any monitoring equipment or method required in the permit; and to sample the discharge, waste treatment processes, or internal waste streams.

### **G3. Permit actions**

This permit is subject to modification, suspension, or termination, in whole or in part by Ecology for any of the following causes:

1. Violation of any permit term or condition;
2. Obtaining a permit by misrepresentation or failure to disclose all relevant facts;
3. A material change in quantity or type of waste disposal;
4. A material change in the condition of the waters of the state; or
5. Nonpayment of fees assessed pursuant to RCW 90.48.465.

Ecology may also modify this permit, including the schedule of compliance or other conditions, if it determines good and valid cause exists, including promulgation or revisions of regulations or new information.

### **G4. Reporting a cause for modification**

The Permittee must submit a new application, or a supplement to the previous application, along with required engineering plans and reports, whenever a new or increased discharge or change in the nature of the discharge is anticipated which is not specifically authorized by this permit. This application must be submitted at least 180 days prior to any proposed changes. Submission of this application does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

### **G5. Plan review required**

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to Ecology for approval in accordance with Chapter 173-240 WAC. Engineering reports, plans, and specifications should be submitted at least 180 days prior to the planned start of construction. Facilities must be constructed and operated in accordance with the approved plans.

### **G6. Compliance with other laws and statutes**

Nothing in the permit excuses the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

### **G7. Transfer of this permit**

This permit is automatically transferred to a new owner or operator if:

1. A written agreement between the old and new owner or operator containing a specific date for transfer of permit responsibility, coverage, and liability is submitted to Ecology;
2. A copy of the permit is provided to the new owner and;
3. Ecology does not notify the Permittee of the need to modify the permit.

Unless this permit is automatically transferred according to Section 1. above, this permit may be transferred only if it is modified to identify the new Permittee and to incorporate such other requirements as determined necessary by Ecology.

## **G8. Reduced production for compliance**

The Permittee must control production or discharge to the extent necessary to maintain compliance with the terms and conditions of this permit upon reduction of efficiency, loss, or failure of its treatment facility until the treatment capacity is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power for the treatment facility is reduced, lost, or fails.

## **G9. Removed substances**

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the effluent stream for discharge.

## **G10. Payment of fees**

The Permittee must submit payment of fees associated with this permit as assessed by Ecology. Ecology may revoke this permit if the permit fees established under Chapter 173-224 WAC are not paid.

## **G11. Penalties for violating permit conditions**

Any person who is found guilty of willfully violating the terms and conditions of this permit is guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs is a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit incurs, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars for every such violation. Each and every such violation is a separate and distinct offense, and in case of a continuing violation, every day's continuance is a separate and distinct violation.

## **G12. Duty to provide information**

The Permittee must submit to Ecology, within a reasonable time, all information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology upon request, copies of records required to be kept by this permit.

## **G13. Duty to comply**

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of chapter 90.48 RCW and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

## Appendix A

### List of Pollutants With Analytical Methods, Detection Limits and Quantitation Levels

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for permit and application required monitoring unless:

- Another permit condition specifies other methods, detection levels, or quantitation levels.
- The method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136. If the Permittee uses an alternative method, not specified in the permit and as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

If the Permittee is unable to obtain the required DL and QL in its effluent due to matrix effects, the Permittee must submit a matrix-specific detection limit (MDL) and a quantitation limit (QL) to Ecology with appropriate laboratory documentation.

When the permit requires the Permittee to measure the base neutral compounds in the list of priority pollutants, it must measure all of the base neutral pollutants listed in the table below. The list includes EPA required base neutral priority pollutants and several additional polynuclear aromatic hydrocarbons (PAHs). The Water Quality Program added several PAHs to the list of base neutrals below from Ecology's Persistent Bioaccumulative Toxics (PBT) List. It only added those PBT parameters of interest to Appendix A that did not increase the overall cost of analysis unreasonably.

Ecology added this appendix to the permit in order to reduce the number of analytical "non-detects" in permit-required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost.

The lists below include conventional pollutants (as defined in CWA section 502(6) and 40 CFR Part 122.), toxic or priority pollutants as defined in CWA section 307(a)(1) and listed in 40 CFR Part 122 Appendix D, 40 CFR Part 401.15 and 40 CFR Part 423 Appendix A), and nonconventionals. 40 CFR Part 122 Appendix D (Table V) also identifies toxic pollutants and hazardous substances which are required to be reported by dischargers if expected to be present. This permit appendix A list does not include those parameters.

**Conventional Pollutants**

<b>Pollutant</b>	<b>CAS Number (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L</b> Unless specified	<b>Quantitation Level (QL)<sup>2</sup> µg/L</b> Unless specified
Biochemical Oxygen Demand		SM5210-B		2 mg/L
Biochemical Oxygen Demand, Soluble		SM5210-B <sup>3</sup>		2 mg/L
Oil and Grease (HEM) (Hexane Extractable Material)		1664 A or B	1,400	5,000
pH		SM4500-H <sup>+</sup> B	N/A	N/A
Total Suspended Solids		SM2540-D		5 mg/L

**Nonconventional Pollutants**

<b>Pollutant</b>	<b>CAS Number (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L</b> Unless specified	<b>Quantitation Level (QL)<sup>2</sup> µg/L</b> Unless specified
Alkalinity, Total		SM2320-B		5 mg/L as CaCO <sub>3</sub>
Aluminum, Total	7429-90-5	200.8	2.0	10
Ammonia, Total (as N)		SM4500-NH <sub>3</sub> -B and C/D/E/G/H		20
Barium Total	7440-39-3	200.8	0.5	2.0
BTEX (benzene +toluene + ethylbenzene + m,o,p xylenes)		EPA SW 846 8021/8260	1	2
Boron, Total	7440-42-8	200.8	2.0	10.0
Chemical Oxygen Demand		SM5220-D		10 mg/L
Chloride		SM4500-CI B/C/D/E and SM4110 B		Sample and limit dependent
Chlorine, Total Residual		SM4500 CI G		50.0
Cobalt, Total	7440-48-4	200.8	0.05	0.25

Pollutant	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
Color		SM2120 B/C/E		10 color units
Dissolved oxygen		SM4500-OC/OG		0.2 mg/L
E.coli		SM 9221B, 9221F, 9223B	N/A	Specified in method - sample aliquot dependent
Enterococci		SM 9230B, 9230C, 9230D	N/A	Specified in method - sample aliquot dependent
Flow		Calibrated device		
Fluoride	16984-48-8	SM4500-F E	25	100
Hardness, Total		SM2340B		200 as CaCO <sub>3</sub>
Iron, Total	7439-89-6	200.7	12.5	50
Magnesium, Total	7439-95-4	200.7	10	50
Manganese, Total	7439-96-5	200.8	0.1	0.5
Molybdenum, Total	7439-98-7	200.8	0.1	0.5
Nitrate + Nitrite Nitrogen (as N)		SM4500-NO <sub>3</sub> -E/F/H		100
Nitrogen, Total Kjeldahl (as N)		SM4500-N <sub>org</sub> B/C and SM4500NH <sub>3</sub> -B/C/D/EF/G/H		300
NWTPH Dx <sup>4</sup>		Ecology NWTPH Dx	250	250
NWTPH Gx <sup>5</sup>		Ecology NWTPH Gx	250	250
Phosphorus, Total (as P)		SM 4500 PB followed by SM4500-PE/PF	3	10
Salinity		SM2520-B		3 practical salinity units or scale (PSU or PSS)

Pollutant	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
Settleable Solids		SM2540 -F		Sample and limit dependent
Soluble Reactive Phosphorus (as P)		SM4500-P E/F/G	3	10
Sulfate (as mg/L SO <sub>4</sub> )		SM4110-B		0.2 mg/L
Sulfide (as mg/L S)		SM4500-S <sup>2</sup> F/D/E/G		0.2 mg/L
Sulfite (as mg/L SO <sub>3</sub> )		SM4500-SO3B		2 mg/L
Temperature (max. 7-day avg.)		Analog recorder or Use micro-recording devices known as thermistors		0.2° C
Tin, Total	7440-31-5	200.8	0.3	1.5
Titanium, Total	7440-32-6	200.8	0.5	2.5
Total Coliform		SM 9221B, 9222B, 9223B	N/A	Specified in method - sample aliquot dependent
Total Organic Carbon		SM5310-B/C/D		1 mg/L
Total dissolved solids		SM2540 C		20 mg/L

**Priority Pollutants**

**Metals, Cyanide & Total Phenols**

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
Antimony, Total	114	7440-36-0	200.8	0.3	1.0
Arsenic, Total	115	7440-38-2	200.8	0.1	0.5
Beryllium, Total	117	7440-41-7	200.8	0.1	0.5

<b>Priority Pollutants</b>	<b>PP #</b>	<b>CAS Number (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L Unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L Unless specified</b>
Cadmium, Total	118	7440-43-9	200.8	0.05	0.25
Chromium (hex) dissolved	119	18540-29-9	SM3500-Cr C	0.3	1.2
Chromium, Total	119	7440-47-3	200.8	0.2	1.0
Copper, Total	120	7440-50-8	200.8	0.4	2.0
Lead, Total	122	7439-92-1	200.8	0.1	0.5
Mercury, Total	123	7439-97-6	1631E	0.0002	0.0005
Nickel, Total	124	7440-02-0	200.8	0.1	0.5
Selenium, Total	125	7782-49-2	200.8	1.0	1.0
Silver, Total	126	7440-22-4	200.8	0.04	0.2
Thallium, Total	127	7440-28-0	200.8	0.09	0.36
Zinc, Total	128	7440-66-6	200.8	0.5	2.5
Cyanide, Total	121	57-12-5	335.4	5	10
Cyanide, Weak Acid Dissociable	121		SM4500-CN I	5	10
Cyanide, Free Amenable to Chlorination (Available Cyanide)	121		SM4500-CN G	5	10
Phenols, Total	65		EPA 420.1		50

### Acid Compounds

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
2-Chlorophenol	24	95-57-8	625.1	3.3	9.9
2,4-Dichlorophenol	31	120-83-2	625.1	2.7	8.1
2,4-Dimethylphenol	34	105-67-9	625.1	2.7	8.1
4,6-dinitro-o-cresol (2-methyl-4,6-dinitrophenol)	60	534-52-1	625.1/1625B	24	72
2,4-dinitrophenol	59	51-28-5	625.1	42	126
2-Nitrophenol	57	88-75-5	625.1	3.6	10.8
4-Nitrophenol	58	100-02-7	625.1	2.4	7.2
Parachlorometa cresol (4-chloro-3-methylphenol)	22	59-50-7	625.1	3.0	9.0
Pentachlorophenol	64	87-86-5	625.1	3.6	10.8
Phenol	65	108-95-2	625.1	1.5	4.5
2,4,6-Trichlorophenol	21	88-06-2	625.1	2.7	8.1

### Volatile Compounds

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
Acrolein	2	107-02-8	624.1	5	10
Acrylonitrile	3	107-13-1	624.1	1.0	2.0
Benzene	4	71-43-2	624.1	4.4	13.2

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
Bromoform	47	75-25-2	624.1	4.7	14.1
Carbon tetrachloride	6	56-23-5	624.1/601 or SM6230B	2.8	8.4
Chlorobenzene	7	108-90-7	624.1	6.0	18.0
Chloroethane	16	75-00-3	624/601	1.0	2.0
2-Chloroethylvinyl Ether	19	110-75-8	624.1	1.0	2.0
Chloroform	23	67-66-3	624.1 or SM6210B	1.6	4.8
Dibromochloromethane (chlordibromomethane)	51	124-48-1	624.1	3.1	9.3
1,2-Dichlorobenzene	25	95-50-1	624.1	1.9	7.6
1,3-Dichlorobenzene	26	541-73-1	624.1	1.9	7.6
1,4-Dichlorobenzene	27	106-46-7	624.1	4.4	17.6
Dichlorobromomethane	48	75-27-4	624.1	2.2	6.6
1,1-Dichloroethane	13	75-34-3	624.1	4.7	14.1
1,2-Dichloroethane	10	107-06-2	624.1	2.8	8.4
1,1-Dichloroethane	29	75-35-4	624.1	2.8	8.4
1,2-Dichloropropane	32	78-87-5	624.1	6.0	18.0

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) <sup>6</sup>	33	542-75-6	624.1	5.0	15.0
Ethylbenzene	38	100-41-4	624.1	7.2	21.6
Methyl bromide (Bromomethane)	46	74-83-9	624/601	5.0	10.0
Methyl chloride (Chloromethane)	45	74-87-3	624.1	1.0	2.0
Methylene chloride	44	75-09-2	624.1	2.8	8.4
1,1,2,2-Tetrachloroethane	15	79-34-5	624.1	6.9	20.7
Tetrachloroethylene	85	127-18-4	624.1	4.1	12.3
Toluene	86	108-88-3	624.1	6.0	18.0
1,2-Trans-Dichloroethylene (Ethylene dichloride)	30	156-60-5	624.1	1.6	4.8
1,1,1-Trichloroethane	11	71-55-6	624.1	3.8	11.4
1,1,2-Trichloroethane	14	79-00-5	624.1	5.0	15.0
Trichloroethylene	87	79-01-6	624.1	1.9	5.7
Vinyl chloride	88	75-01-4	624/SM6200B	1.0	2.0

**Base/Neutral Compounds (Compounds in Bold are Ecology PBTS)**

<b>Priority Pollutants</b>	<b>PP #</b>	<b>CAS Number (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L Unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L Unless specified</b>
Acenaphthene	1	83-32-9	625.1	1.9	5.7
Acenaphthylene	77	208-96-8	625.1	3.5	10.5
Anthracene	78	120-12-7	625.1	1.9	5.7
Benzidine	5	92-87-5	625.1	44	132
Benzyl butyl phthalate	67	85-68-7	625.1	2.5	7.5
Benzo(a)anthracene	72	56-55-3	625.1	7.8	23.4
Benzo(b)fluoranthene (3,4-benzofluoranthene) <sup>7</sup>	74	205-99-2	610/625.1	4.8	14.4
<b>Benzo(j)fluoranthene<sup>7</sup></b>		205-82-3	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) <sup>7</sup>	75	207-08-9	610/625.1	2.5	7.5
<b>Benzo(r,s,t)pentaphene</b>		189-55-9	625	1.3	5.0
Benzo(a)pyrene	73	50-32-8	610/625.1	2.5	7.5
Benzo(ghi)Perylene	79	191-24-2	610/625.1	4.1	12.3
Bis(2-chloroethoxy)methane	43	111-91-1	625.1	5.3	15.9
Bis(2-chloroethyl)ether	18	111-44-4	611/625.1	5.7	17.1
Bis(2-chloro-1-methylethyl)Ether (Bis(2-	42	108-60-1	625.1	5.7	17.1

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
chloroisopropyl)ether) <sup>10</sup>					
Bis(2-ethylhexyl)phthalate	66	117-81-7	625.1	2.5	7.5
4-Bromophenyl phenyl ether	41	101-55-3	625.1	1.9	5.7
2-Chloronaphthalene	20	91-58-7	625.1	1.9	5.7
4-Chlorophenyl phenyl ether	40	7005-72-3	625.1	4.2	12.6
Chrysene	76	218-01-9	610/625.1	2.5	7.5
<b>Dibenzo (a,h)acridine</b>		226-36-8	610M/625M	2.5	10.0
<b>Dibenzo (a,j)acridine</b>		224-42-0	610M/625M	2.5	10.0
Dibenzo(a-h)anthracene (1,2,5,6-dibenzanthracene)	82	53-70-3	625.1	2.5	7.5
<b>Dibenzo(a,e)pyrene</b>		192-65-4	610M/625M	2.5	10.0
<b>Dibenzo(a,h)pyrene</b>		189-64-0	625M	2.5	10.0
3,3-Dichlorobenzidine	28	91-94-1	605/625.1	16.5	49.5
Diethyl phthalate	70	84-66-2	625.1	1.9	5.7
Dimethyl phthalate	71	131-11-3	625.1	1.6	4.8
Di-n-butyl phthalate	68	84-74-2	625.1	2.5	7.5

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
2,4-dinitrotoluene	35	121-14-2	609/625.1	5.7	17.1
2,6-dinitrotoluene	36	606-20-2	609/625.1	1.9	5.7
Di-n-octyl phthalate	69	117-84-0	625.1	2.5	7.5
1,2-Diphenylhydrazine (as Azobenzene)	37	122-66-7	1625B	5.0	20
Fluoranthene	39	206-44-0	625.1	2.2	6.6
Fluorene	80	86-73-7	625.1	1.9	5.7
Hexachlorobenzene	9	118-74-1	612/625.1	1.9	5.7
Hexachlorobutadiene	52	87-68-3	625.1	0.9	2.7
Hexachlorocyclopentadiene	53	77-47-4	1625B/625	2.0	4.0
Hexachloroethane	12	67-72-1	625.1	1.6	4.8
Indeno(1,2,3-cd)Pyrene	83	193-39-5	610/625.1	3.7	11.1
Isophorone	54	78-59-1	625.1	2.2	6.6
<b>3-Methylcholanthrene</b>		56-49-5	625	2.0	8.0
Naphthalene	55	91-20-3	625.1	1.6	4.8
Nitrobenzene	56	98-95-3	625.1	1.9	5.7
N-Nitrosodimethylamine	61	62-75-9	607/625	2.0	4.0
N-Nitrosodi-n-propylamine	63	621-64-7	607/625	0.5	1.0
N-Nitrosodiphenylamine	62	86-30-6	625	1.0	2.0

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
Perylene		198-55-0	625	1.9	7.6
Phenanthrene	81	85-01-8	625.1	5.4	16.2
Pyrene	84	129-00-0	625.1	1.9	5.7
1,2,4-Trichlorobenzene	8	120-82-1	625.1	1.9	5.7

**Dioxin**

Priority Pollutant	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (2,3,7,8 TCDD)	129	1746-01-6	1613B	1.3 pg/L	5 pg/L

**Pesticides/PCBS**

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L Unless specified	Quantitation Level (QL) <sup>2</sup> µg/L Unless specified
Aldrin	89	309-00-2	608.3	4.0 ng/L	12 ng/L
alpha-BHC	102	319-84-6	608.3	3.0 ng/L	9.0 ng/L
beta-BHC	103	319-85-7	608.3	6.0 ng/L	18 ng/L
gamma-BHC (Lindane)	104	58-89-9	608.3	4.0 ng/L	12 ng/L
delta-BHC	105	319-86-8	608.3	9.0 ng/L	27 ng/L
Chlordane <sup>8</sup>	91	57-74-9	608.3	14 ng/L	42 ng/L
4,4'-DDT	92	50-29-3	608.3	12 ng/L	36 ng/L
4,4'-DDE	93	72-55-9	608.3	4.0 ng/L	12 ng/L
4,4' DDD	94	72-54-8	608.3	11ng/L	33 ng/L
Dieldrin	90	60-57-1	608.3	2.0 ng/L	6.0 ng/L

<b>Priority Pollutants</b>	<b>PP #</b>	<b>CAS Number (if available)</b>	<b>Recommended Analytical Protocol</b>	<b>Detection (DL)<sup>1</sup> µg/L Unless specified</b>	<b>Quantitation Level (QL)<sup>2</sup> µg/L Unless specified</b>
alpha-Endosulfan	95	959-98-8	608.3	14 ng/L	42 ng/L
beta-Endosulfan	96	33213-65-9	608.3	4.0 ng/L	12 ng/L
Endosulfan Sulfate	97	1031-07-8	608.3	66 ng/L	198 ng/L
Endrin	98	72-20-8	608.3	6.0 ng/L	18 ng/L
Endrin Aldehyde	99	7421-93-4	608.3	23 ng/L	70 ng/L
Heptachlor	100	76-44-8	608.3	3.0 ng/L	9.0 ng/L
Heptachlor Epoxide	101	1024-57-3	608.3	83 ng/L	249 ng/L
PCB-1242 <sup>9</sup>	106	53469-21-9	608.3	0.065	0.195
PCB-1254	107	11097-69-1	608.3	0.065	0.195
PCB-1221	108	11104-28-2	608.3	0.065	0.195
PCB-1232	109	11141-16-5	608.3	0.065	0.195
PCB-1248	110	12672-29-6	608.3	0.065	0.195
PCB-1260	111	11096-82-5	608.3	0.065	0.195
PCB-1016 <sup>9</sup>	112	12674-11-2	608.3	0.065	0.195
Toxaphene	113	8001-35-2	608.3	240 ng/L	720 ng/L

## Analytical Methods

1. **Detection level (DL)** – or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.
2. **Quantitation Level (QL)** – also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to  $(1, 2, \text{ or } 5) \times 10^n$ , where n is an integer. (64 FR 30417). **Also Given As:** The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).
3. **Soluble Biochemical Oxygen Demand** – method note: First, filter the sample through a Millipore Nylon filter (or equivalent) - pore size of 0.45-0.50 um (prep all filters by filtering 250 ml of laboratory grade deionized water through the filter and discard). Then, analyze sample as per method 5210-B.
4. **Northwest Total Petroleum Hydrocarbons Diesel Extended Range OR NWTPH Dx** – [Analytical Methods for Petroleum Hydrocarbons](https://fortress.wa.gov/ecy/publications/documents/97602.pdf)  
<https://fortress.wa.gov/ecy/publications/documents/97602.pdf>.
5. **Northwest Total Petroleum Hydrocarbons Gasoline Extended Range OR NWTPH Gx** – [Analytical Methods for Petroleum Hydrocarbons](https://fortress.wa.gov/ecy/publications/documents/97602.pdf)  
<https://fortress.wa.gov/ecy/publications/documents/97602.pdf>.
6. **1, 3-dichloropropylene (mixed isomers)** – You may report this parameter as two separate parameters: cis-1, 3-dichloropropene (10061-01-5) and trans-1, 3-dichloropropene (10061-02-6).
7. **Total Benzofluoranthenes** – Because Benzo(b)fluoranthene, Benzo(j)fluoranthene and Benzo(k)fluoranthene co-elute you may report these three isomers as total benzofluoranthenes.
8. **Chlordane** – You may report alpha-chlordane (5103-71-9) and gamma-chlordane (5103-74-2) in place of chlordane (57-74-9). If you report alpha and gamma-chlordane, the DL/PQLs that apply are 14/42 ng/L.
9. **PCB 1016 & PCB 1242** – You may report these two PCB compounds as one parameter called PCB 1016/1242.
10. **Bis(2-Chloro-1-Methylethyl) Ether** – This compound was previously listed as Bis(2-Chloroisopropyl) Ether (39638-32-9)