

| <b>Permit Section</b> | <b>Submittal</b>  | <b>Frequency</b> | <b>First Submittal Date</b>                |
|-----------------------|---|------------------|--|
| S10.                  | Outfall evaluation, sediment, and monitoring feasibility study – sampling and analysis plan (SAP) | 1/permit cycle   | <b>April 1, 2028</b>                       |
| S10                   | Outfall evaluation report   | 1/permit cycle   | <b>December 31, 2028</b>                   |
| S11.A.1.              | Mixing Study Plan   | 1/permit cycle   | <b>April 1, 2028</b>                       |
| S11.B.1.              | Effluent Mixing Report  | 1/permit cycle   | <b>December 31, 2028</b>                   |
| S12.1                 | Receiving water study QAPP  | 1/permit cycle   | <b>March 1, 2025</b>                       |
| S12.7.                | Receiving water study of temperature  | Annually         | <b>December 15, 2025</b>                   |
| S13.1.                | Receiving Water Study – Metallic and conventional pollutants                                      | 1/permit cycle   | <b>December 31, 2028</b>                   |
| S14.1.                | Engineering Report  | 1/permit cycle   | <b>December 31, 2028</b>                   |
| S15.                  | Acute Toxicity Effluent Test Results - Submit with Permit Renewal Application                     | Once             | <b>With application for permit renewal</b> |
| S16.                  | Chronic Toxicity Effluent Test Results with Permit Renewal Application                            | Once             | <b>With application for permit renewal</b> |
| G1.                   | Notice of Change in Authorization   | As necessary     |  |
| G4.                   | Reporting Planned Changes   | As necessary     |  |
| G5.                   | Engineering Report for Construction or Modification Activities                                    | As necessary     |  |
| G7.                   | Notice of Permit Transfer   | As necessary     |  |
| G10.                  | Duty to Provide Information   | As necessary     |  |
| G20.                  | Compliance Schedules  | As necessary     |  |
| G21.                  | Service Agreement Review Contract Submittal   | As necessary     |  |

The Permittee must 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.

## **S10. Outfall evaluation, sediment, and monitoring feasibility study**

The Permittee must inspect, once during the permit term, the conveyance portion of the outfall line and revetment channel to document its integrity and continued function. The Permittee **must submit a sampling and analysis plan, (SAP), for approval by April 1, 2028**. If conditions allow for a photographic verification, the Permittee must include such verification in the report. **By December 31, 2028**, the Permittee must submit the inspection report to Ecology through the Water Quality Permitting Portal – Permit Submittals application. The Permittee must submit hard-copies of any video files to Ecology as required by Permit Condition S3.B. The Portal does not support submittal of video files. The evaluation must at minimum:

- Assess the physical condition of the outfalls to the conveyance channels, the conveyance channels, and outfalls to the revetment channel, flow monitoring device(s), and overall revetment channel condition.
- Determine the extent of sediment accumulation (if any) in the vicinity of the outfalls and revetment channel and complete the sediment accumulation check sheet.
- Determine feasibility of monitoring flow at the outfalls of the conveyance channels to determine the rate of infiltration.
- Determine feasibility of obtaining a representative sample of the combined outfalls to determine compliance with permit limits and adherence to water quality standards.

## **S11. Mixing study**

### **S11.A. General requirements**

The Permittee must:

1. Submit a Plan of Study to Ecology for review **by April 1, 2028**, prior to initiation of the effluent mixing study in surface and groundwater.
2. Determine the degree of mixing during critical conditions, as defined in WAC 173-201A-020 Definitions - "Critical Condition," or as close to critical conditions as reasonably possible.

3. Use the Guidance for Conducting Mixing Zone Analyses (Ecology, 2008) to establish the critical condition scenarios.
4. Measure the dilution ratio in the field with dye using study protocols specified in the Guidance, Section 5.0 “Conducting a Dye Study,” as well as other protocols listed in Subpart C “Protocols.” The Permittee may use mixing models as an acceptable alternative or adjunct to a dye study if:
  - a. The critical ambient conditions necessary for model input are known or will be established with field studies.
  - b. If the diffuser is visually inspected for integrity or has been recently tested for performance by the use of tracers.
5. Consult the Guidance mentioned above when choosing the appropriate model.
6. Use models if critical condition scenarios that need to be examined are quite different from the set of conditions present during the dye study.
7. Must conduct validation/calibration in accordance with the Guidance mentioned above, in particular, Section 5.2 “Quantify Dilution” if it determines it needs to validate (and possibly calibrate) a model.
8. Apply the resultant dilution ratios for acute and chronic boundaries in accordance with directions found in Ecology’s *Permit Writer’s Manual* (2010), Chapter 6 and Appendix C. You can obtain a copy of the manual at:  
<https://fortress.wa.gov/ecy/publications/documents/92109.pdf>.

#### **S11.B. Reporting requirements**

The Permittee must:

1. Include the results of the effluent mixing study in the Effluent Mixing Report **no later than December 31, 2028**.
2. Submit to Ecology any available information it has regarding background physical conditions or background concentrations of chemical substances in the receiving water (for which there are criteria in chapter 173-201A WAC) as part of the Effluent Mixing Report.
3. Locate the outfall and mixing zone boundaries with GPS coordinates and identify the accuracy of station locations in the report.

4. If the results of the mixing study, toxicity tests, and chemical analysis indicate that the concentration of any pollutant(s) exceeds or has a reasonable potential to exceed the state water quality standards, chapter 173-201A WAC, Ecology may issue an administrative order to require a reduction of pollutants or modify this permit to impose effluent limits to meet the water quality standards.

#### **S11.C. Protocols**

The Permittee must determine the dilution ratio using protocols outlined in the following references, approved modifications thereof, or by another method approved by Ecology:

1. Akar, P.J. and G.H. Jirka, Cormix2: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Multiport Diffuser Discharges, USEPA Environmental Research Laboratory, Athens, GA, Draft, July 1990.
2. Baumgartner, D.J., W.E. Frick, P.J.W. Roberts, and C.A. Bodeen, *Dilution Models for Effluent Discharges*, USEPA, Pacific Ecosystems Branch, Newport, OR, 1993.
3. Doneker, R.L. and G.H. Jirka, Cormix1: An Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Submerged Single Port Discharges, USEPA, Environmental Research Laboratory, Athens, GA, EPA/600-3-90/012, 1990.
4. Ecology, *Permit Writer's Manual*, Water Quality Program, Department of Ecology, Olympia, WA 98504, revised January 2015, including most current addenda.
5. Ecology, *Guidance for Conducting Mixing Zone Analyses*, *Permit Writer's Manual*, (Appendix 6.1), Water Quality Program, Department of Ecology, Olympia, WA 98504, October 1996.
6. Kilpatrick, F.A., and E.D. Cobb, *Measurement of Discharge Using Tracers, Chapter A16, Techniques of Water-Resources Investigations of the USGS*, Book 3, Application of Hydraulics, USGS, U.S. Department of the Interior, Reston, VA, 1985.
7. Wilson, J.F., E.D. Cobb, and F.A. Kilpatrick, *Fluorometric Procedures for Dye Tracing, Chapter A12. Techniques of Water-Resources Investigations of the USGS*, Book 3, Application of Hydraulics, USGS, U.S. Department of the Interior, Reston, VA, 1986.

Specific questions about data submittal may be directed to the EIM Data Coordinator.

4. Submit the final report, summarizing the results of the study to Ecology **by December 31, 2028**. The final report must document when the data was successfully loaded into EIM.

Any subsequent sampling and analysis must also meet these requirements. The Permittee may conduct a cooperative receiving water study with other NPDES Permittees discharging in the same vicinity.

## **S14. Engineering Report**

1. The Permittee must prepare and submit an approvable engineering report or facility plan in accordance with chapter 173-240 WAC to Ecology for review and approval by **December 31, 2028**. Engineering Report is to address and summarize the Outfall evaluation, mixing study, receiving water studies. The engineering report must also address treatment plant compliance for pollutants that are shown to have reasonable potential as required by the National Pollutant Discharge Elimination System (NPDES).
2. As required by RCW 90.48.112, the engineering report must address the feasibility of using reclaimed water as defined in RCW 90.46.010.
3. The report must contain any appropriate requirements as described in: *Criteria for Sewage Works Design* (Washington State Department of Ecology, Publication No. 98-37 WQ, 2008).

## **S15. Acute toxicity**

### **S15.A. Testing when there is no permit limit for acute toxicity**

The Permittee must:

1. Conduct acute toxicity testing on final effluent once in the last summer and once in the last winter prior to submission of the **application for permit renewal**.
2. Conduct acute toxicity testing on a series of at least five concentrations of effluent, including 100% effluent and a control.
3. Use each of the following species and protocols for each acute toxicity test:

| <b>Acute Toxicity Tests</b>                | <b>Species</b>             | <b>Method</b>    |
|--|----------------------------|------------------|
| Fathead minnow 96-hour static-renewal test | <i>Pimephales promelas</i> | EPA-821-R-02-012 |