

Issuance Date: XX XX, 20XX
Effective Date: XX XX, 20XX
Expiration Date: XX XX, 20XX

State Waste Discharge Permit Number ST0501319

State of Washington
DEPARTMENT OF ECOLOGY
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

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

Terramar Brewery
PO Box 3000
Bow, WA 98232

is authorized to discharge wastewater in accordance with the Special and General Conditions that follow.

Facility Location: 5712 Gilkey Street Edison, WA Treatment Type: pH adjustment, land treatment Industry Type: Brewery and Distillery	Discharge Location: 2.5 acres grass/turf Legal Description: NW ¼, SW ¼, Section 33, T36N SIC Codes: 2082, 2085 NAICS Codes: 312120, 312140 Categorical Industry: Ale brewing, alcoholic beverages distilling
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Summary of Permit Report Submittals

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

Permit Section	Submittal	Frequency	First Submittal Date
S3.A	Discharge Monitoring Report (DMR)	2 / Week ^a	XX XX, 20XX
S3.A	Discharge Monitoring Report (DMR)	Weekly ^b	XX XX, 20XX
S3.A	Discharge Monitoring Report (DMR)	Monthly	XX XX, 20XX
S3.A	Discharge Monitoring Report (DMR)	Quarterly	XX XX, 20XX
S3.A	Discharge Monitoring Report (DMR)	Semiannual	XX XX, 20XX
S3.F	Reporting Permit Violations	As necessary	
S4.A	Operations and Maintenance Manual	1/permit cycle	XX XX, 20XX
S4.B	Reporting Bypasses	As necessary	
S6	Application for Permit Renewal	1/permit cycle	XX XX, 20XX
S7	Non-Routine Discharge Report	As necessary	
S9	Groundwater Quality Evaluation Scope of Work	1/permit cycle	XX XX, 20XX
S10	Groundwater Monitoring Wells	1/permit cycle	XX XX, 20XX
S11	Annual Summary Report	1/year	XX XX, 20XX
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	
G10	Duty to Provide Information	As necessary	
^a	Samples are collected two times per week. Results are reported monthly.		
^b	Samples are collected once per week. Results are reported monthly.		

Special Conditions

S1. Discharge limits

S1.A. Effluent 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 violates the terms and conditions of this permit.

Beginning on XX XX, 20XX, the Permittee is authorized to apply process wastewater to the designated land treatment site via spray irrigation not to exceed the agronomic rates for nitrogen and water, and at rates for any other wastewater constituents to protect background water quality. The Permittee may not apply wastewater seasonally from October 1 to May 1 in amounts greater than one inch per week including precipitation. The week for determination of precipitation shall be the seven days before the wastewater application. Wastewater shall not be applied if precipitation is forecast within 36 hours after application.

The Permittee is authorized to apply process wastewater for final treatment on the following designated land treatment sites:

Approximately 2.5 acres located in the city of Edison, within the NW ¼ section, SE ¼ of section 33, T 36 N, R 03 E.

Total nitrogen and water applied to the land treatment site must not exceed the crop requirements as determined by the Permittee's Irrigation and Crop Management Plan, Special Condition S12.

The Permittee must operate the spray fields in such a manner as to:

1. Protect the existing and future beneficial uses of both groundwater and surface water.
2. Not cause a violation of the groundwater standards (chapter 173-200 WAC) or the surface water quality standards (chapter 173-201A WAC).

Discharges are subject to the following limits:

Effluent Limits: Outfall # 001		
Latitude: 48.5638222 Longitude: -122.4436778		
Parameter	Average Monthly ^a	Maximum Daily ^b
Flow	467 gallons per day (gpd)	1,325 gallons per day
	Loading Rate	Maximum Application Frequency
Application Rate	5,650 gal/acre/day	4 days/week
Biochemical Oxygen Demand (BOD ₅)	75 lbs/acre/day	4 days/week
	Minimum	Maximum
pH	6.0	9.0
^a	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.	
^b	Maximum daily effluent limit means the highest allowable daily discharge. The daily discharge means the 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.	

S1.B. Prohibited discharges

1. Do **not** discharge wastewater to irrigation lands in quantities that:
 - a. Degrade the soil so it **no** longer supports vegetation and effectively treats wastewater.
 - b. Cause ponding on the irrigation lands.
 - c. Erode the soil on the irrigation lands.
 - d. Cause wastewater to flow off the irrigation lands.
 - e. Create nuisances (objectionable odors, vectors, etc.).
2. Do **not** discharge wastewater to irrigation lands:
 - a. Between October 1 and May 1 in amounts greater than one inch per week **including** precipitation.
 1. Precipitation shall be determined from the seven days before wastewater application.
 2. Wastewater shall not be applied if precipitation is forecast within 36 hours **after** application.
 - b. At rates that will exceed the application rates and loading rates as specified by this permit.
 - c. That are frozen, snow covered, saturated, or flooded.
 - d. During precipitation events, large enough to cause wastewater to flow off the irrigation lands.

- e. That are bare or have **no managed vegetation**.
- f. Within fifty feet (50 ft) of a surface water or within one hundred feet (100 ft) of a potable water supply well.

S1.C. Discharge best management practices/pollution prevention

The Permittee must comply with the following Best Management Practices to prevent pollution to waters of the State:

- 1. Do **not** commingle process wastewater streams with sanitary (domestic) sewage.
- 2. Wastewater discharged to irrigation lands must **not** have a pH less than 6.0 or greater than 9.0.
- 3. Do **not** exceed a weekly average-loading rate of seventy-five (75) lbs of BOD₅ per acre per day (lbs/acre/day), for each irrigation land.

Use the following equation to calculate the weekly average-loading rate.

$$= \frac{\text{Concentration}^a \times \text{Volume}^b \times 0.000000834^c}{\text{Number of Acres}^d \times \text{Number of Weeks}^e \times 7^f}$$

Notes:

a = Concentration is expressed in mg/L. It is the concentration of BOD₅ in the wastewater that was discharged to the land treatment site(s). Use the average concentration of BOD₅ for the month, if more than one sample is analyzed.

b = Total volume applied is expressed in gallons (Gal). It is the total volume of wastewater discharged to the land treatment site(s) over the entire month.

c = Conversion factor to convert milligrams per liter to pounds per gallons.

d = Number of acres of the land treatment site. It is the total area of the land receiving any wastewater discharge.

e = The total number of calendar weeks a discharge occurred during that month. Dividing the loading rate by the number of weeks a discharge occurred that month will provide a weekly loading rate.

f = Seven is the number of days in a calendar week. Dividing the weekly loading rate by the number of days in a week will provide an average daily loading rate in pounds of BOD per acre per day.

Results of this calculation must be reported in your DMR (Special Condition S3.A).

- 4. Do **not** discharge in excess of the hydraulic capacity of the spray field so that ponding or runoff occurs.

5. Do **not** irrigate with wastewater more than four (4) days per week or on two (2) consecutive days. There must be at least one (1) day of rest (**not** irrigating with wastewater) before and after each day you **do** irrigate with wastewater.
6. Do **not** irrigate with wastewater more than sixteen (16) days per month.
7. If you combine **supplemental irrigation water** (non-wastewater) with wastewater in an irrigation system, you must have a backflow prevention method consisting of either a Department of Health-approved backflow prevention device, or an atmospheric break.
8. Do **not** discharge priority pollutants, dangerous wastes, or toxics in toxic amounts.

S2. Monitoring requirements

S2.A. Irrigation wastewater monitoring

The Permittee must sample at a location that best represents the discharge pumped and applied to the spray field. The sampling point for the irrigated wastewater (designated as Outfall 001) is on the irrigation line from the 30,000-gallon storage tank to the sprinkler system. The Permittee must report results in the annual Irrigation and Crop Plan, Section S11.

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

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Flow	gallons/day (gpd)	Continuous ^a	Metered ^b
BOD ₅	mg/L	2/Week / Weekly ^c	Grab ^d
Application Rate	gal/ac/day	2/Week / Weekly	Calculated ^g
Total Suspended Solids (TSS)	mg/L	2/Week / Weekly	Grab
Total Dissolved Solids (TDS)	mg/L	2/Week / Weekly	Grab
pH	Standard Units	Weekly	Measured ⁱ
Specific Conductivity	micromhos/cm	Weekly	Measured
Total Kjeldahl Nitrogen (TKN)	mg/L as N	Weekly / Monthly ^e	Grab
Nitrate plus Nitrite Nitrogen	mg/L as N	Weekly / Monthly	Grab
Ammonia – Nitrogen	mg/L as N	Weekly / Monthly	Grab
Total Nitrogen	mg/L as N	Weekly / Monthly	Calculated
Total Phosphorous	mg/L	Weekly / Monthly	Grab
Total Organic Carbon (TOC)	mg/L	Weekly / Monthly	Grab
Chloride	mg/L	Weekly / Monthly	Grab
BOD ₅	lbs/day	Monthly	Calculated
TSS	lbs/day	Monthly / Quarterly ^f	Calculated
Nitrate plus Nitrite Nitrogen	lbs/day as N	Monthly / Quarterly	Calculated
Alkalinity	mg/L	Monthly / Semi-Annually ^h	Grab
Hardness	mg/L	Monthly / Semi-Annually	Grab

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Calcium	mg/L	Monthly / Semi-Annually	Grab
Iron	mg/L	Monthly / Semi-Annually	Grab
Magnesium	mg/L	Monthly / Semi-Annually	Grab
Manganese	mg/L	Monthly / Semi-Annually	Grab
Potassium	mg/L	Monthly / Semi-Annually	Grab
Sodium	mg/L	Monthly / Semi-Annually	Grab
Sulfate	mg/L	Monthly / Semi-Annually	Grab
^a	Continuous ≡ a recording instrument, such as a totalizing flow meter, which makes measurements continuously.		
^b	Metered ≡ The parameter of interest is measured with a recording meter such as for flow, turbidity, TOC, temperature, pH, and conductivity.		
^c	2/Week / Weekly ≡ Samples are to be collected at a frequency of two per week for permit years 1 and 2. Sample frequency then drops to once per week for permit years 3 – 5.		
^d	Grab ≡ An individual sample collected in less than 15-minute time - more or less represents instantaneous conditions.		
^e	Weekly / Monthly ≡ Samples are to be collected at the frequency of once per week for permit years 1 and 2. Then once per month using the maximum weekly result of the parameter of interest for permit years 3 – 5.		
^f	Monthly / Quarterly ≡ Samples are to be calculated at the frequency of once per month for permit years 1 and 2. Then once per quarter using the maximum weekly result of the parameter of interest for permit years 3 – 5.		
^g	Calculated ≡ The value for this parameter is calculated from another constituent.		
^h	Monthly / Semi-Annually ≡ Samples are to be collected at the frequency of once per month for permit years 1 and 2. Then twice per year for permit years 3 – 5.		
ⁱ	Measured ≡ The parameter of interest is measured in the field or on-site at the point of discharge with a field kit, etc.		

S2.B. Vadose zone monitoring

Vadose zone monitoring shall be done at one location near the proposed wastewater drain field and at two random locations within the land treatment area. The sampling point for the treated wastewater is at the contact between the fill and the native soil where perched water was observed during the on-site soils investigation, and prior to entry into the groundwater.

The Permittee must monitor the vadose zone for moisture content (matric potential). If the moisture content shows continuous saturated conditions for more than one month, then the Permittee must begin sampling of the vadose zone wastewater/percolate according to the following schedule:

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Matric Potential	Kilopascals (Kpa)	Monthly / Quarterly ^a	Field Measurement ^b
Measured Depth to Perched Water	Feet (nearest 0.01 ft)	Monthly / Quarterly	Field Measurement
pH	Standard Units	Monthly / Quarterly	Field Measurement
Conductivity	Micromhos/cm	Monthly / Quarterly	Field Measurement
Temperature	Degrees C	Monthly / Quarterly	Field Measurement
Dissolved Oxygen	mg/L	Monthly / Quarterly	Field Measurement
Turbidity	NTU	Monthly / Quarterly	Field Measurement
Oxidation/Reduction Potential (ORP)	millivolts	Monthly / Quarterly	Field Measurement
TOC	mg/L	Monthly / Quarterly	Grab ^c
BOD ₅	mg/L	Monthly / Quarterly	Grab
Chloride	mg/L	Monthly / Quarterly	Grab
Sulfate	mg/L	Monthly / Quarterly	Grab
TDS	mg/L	Monthly / Quarterly	Grab
TSS	mg/L	Monthly / Quarterly	Grab
Nitrate plus Nitrite Nitrogen	mg/L as N	Monthly / Quarterly	Grab
Total Kjeldahl Nitrogen (TKN)	mg/L as N	Monthly / Quarterly	Grab
Ammonia – Nitrogen	mg/L as N	Monthly / Quarterly	Grab
Total Nitrogen	mg/L as N	Monthly / Quarterly	Grab
Bicarbonate Alkalinity	mg/L as CaCO ₃	Quarterly / Semi-Annually ^d	Grab
Hardness	mg/L as CaCO ₃	Quarterly / Semi-Annually	Grab
Calcium (Total)	mg/L	Quarterly / Semi-Annually	Grab
Iron (Total)	mg/L	Quarterly / Semi-Annually	Grab
Magnesium (Total)	mg/L	Quarterly / Semi-Annually	Grab
Manganese (Total)	mg/L	Quarterly / Semi-Annually	Grab
Potassium (Total)	mg/L	Quarterly / Semi-Annually	Grab
Sodium (Total)	mg/L	Quarterly / Semi-Annually	Grab
^a	Monthly / Quarterly ≡ Samples will be collected monthly for permit years 1 and 2. Sampling frequency may then decrease to quarterly for permit years 3 – 5.		
^b	Field Measurement ≡ The parameter of interest is measured in the field or on-site at the point of discharge with a field kit, measuring tape, etc.		
^c	Grab ≡ an individual sample collected in less than 15-minute time - more or less represents instantaneous conditions.		
^d	Quarterly / Semi-Annually ≡ Samples will be collected quarterly for permit years 1 and 2. Sampling frequency may then decrease to twice per year for permit years 3 – 5.		

Based on the results from sample collection during permit years 1 and 2, sampling frequency will be reduced as shown in the table above. If sample results show a close correlation to either irrigated wastewater or groundwater, then the Permittee may request vadose sampling be discontinued and removed from the permit through a permit modification.

S2.C. Groundwater monitoring

The Permittee must begin monitoring the groundwater at the new monitoring wells specified in Special Conditions S10 and S11 within 30 days of well completion and in accordance with the following schedule and the requirements specified in Appendix A.

Parameter	Units & Speciation	Sampling Frequency	Sample Type
Measured Depth to Groundwater	Feet(nearest 0.01 ft)	Monthly / Quarterly ^a	Field Measurement ^b
pH	Standard Units	Monthly / Quarterly	Field Measurement
Conductivity	Micromhos/cm	Monthly / Quarterly	Field Measurement
Temperature	Degrees C	Monthly / Quarterly	Field Measurement
Dissolved Oxygen	mg/L	Monthly / Quarterly	Field Measurement
Turbidity	NTU	Monthly / Quarterly	Field Measurement
Oxidation/Reduction Potential (ORP)	millivolts	Monthly / Quarterly	Field Measurement
TOC	mg/L	Monthly / Quarterly	Grab ^c
BOD ₅	mg/L	Monthly / Quarterly	Grab
Chloride	mg/L	Monthly / Quarterly	Grab
Sulfate	mg/L	Monthly / Quarterly	Grab
TDS	mg/L	Monthly / Quarterly	Grab
TSS	mg/L	Monthly / Quarterly	Grab
Nitrate plus Nitrite Nitrogen	mg/L as N	Monthly / Quarterly	Grab
Total Kjeldahl Nitrogen (TKN)	mg/L as N	Monthly / Quarterly	Grab
Ammonia – Nitrogen	mg/L as N	Monthly / Quarterly	Grab
Total Nitrogen	mg/L as N	Monthly / Quarterly	Calculated
Alkalinity	mg/L as CaCO ₃	Quarterly / Semi-Annually ^d	Grab
Hardness	mg/L as CaCO ₃	Quarterly / Semi-Annually	Grab
Calcium (Total)	mg/L	Quarterly / Semi-Annually	Grab
Iron (Total)	mg/L	Quarterly / Semi-Annually	Grab
Magnesium (Total)	mg/L	Quarterly / Semi-Annually	Grab
Manganese (Total)	mg/L	Quarterly / Semi-Annually	Grab
Potassium (Total)	mg/L	Quarterly / Semi-Annually	Grab
Sodium (Total)	mg/L	Quarterly / Semi-Annually	Grab
^a	Monthly / Quarterly ≡ Samples will be collected monthly for permit years 1 and 2. Sampling frequency then decreases to quarterly for permit years 3 – 5.		
^b	Field Measurement ≡ The parameter of interest is measured in the field or on-site at the point of discharge with a field kit, measuring tape, etc.		
^c	Grab ≡ An individual sample collected in less than 15-minute time - more or less represents instantaneous conditions.		
^d	Quarterly / Semi-Annually ≡ Samples will be collected quarterly for permit years 1 and 2. Sampling frequency then decreases to twice per year for permit years 3 – 5.		

S2.D. Soil monitoring

The Permittee must monitor soil on the land treatment site as follows; the Permittee must:

1. Monitor once per year unless otherwise specified.
2. Locate sampling sites so they represent each irrigation zone of the land treatment site or as identified in the crop management plan.
3. Locate sampling sites in the same vicinity each year if possible.
4. Test soil at each sampling site on one-foot soil increments.
5. Submit results annually with the Irrigation and Crop Management Plan.
6. Composite a minimum of four (4) core samples at the six-depth increments as defined in the table below (or until auger refusal or groundwater, whichever is shallower).
7. Collect samples at a time that best represents soil conditions at the beginning or the end of the crop-growing season.

The Permittee must monitor the soils in the spray field according to the following schedule. The first table applies to one location selected at random from the land treatment area.

Parameter	Units & Speciation	Sample Point	Depth Increments ^a
Exchangeable Sodium Percentage	%	Random 1 ^b	1 – 6 ^c
Cation Exchange Capacity	meq/100g	Random 1	1 - 6
Organic Matter	%	Random 1	1 - 6
Moisture Content	%	Random 1	1 - 6
Total Kjeldahl Nitrogen (TKN)	mg/Kg as N	Random 1	1 - 6
Nitrate plus Nitrite Nitrogen	mg/Kg as N	Random 1	1 - 6
Ammonia – Nitrogen	mg/Kg as N	Random 1	1 - 6
Phosphorus (Total)	mg/Kg	Random 1	1 - 6
Conductivity	micromhos/cm	Random 1	1 - 6
Calcium (Total)	meq/100g	Random 1	1 - 6
Iron (Total)	mg/Kg	Random 1	1 - 6
Magnesium (Total)	meq/100g	Random 1	1 - 6
Manganese (Total)	mg/Kg	Random 1	1 - 6
Potassium (Total)	mg/Kg	Random 1	1 - 6
Sodium (Total)	meq/100g	Random 1	1 - 6
Chloride	mg/Kg	Random 1	1 - 6
Sulfate	mg/Kg as S	Random 1	1 - 6
pH	Standard Units	Random 1	1 - 6
^a	Depth increment (ft.) vs. Depth (inches) for composite samples:		
Increment 1	1 ft.	(0 - 12 inches)	
Increment 2	2 ft.	(12 - 24 inches)	
Increment 3	3 ft.	(24 - 36 inches)	
Increment 4	4 ft.	(36 - 48 inches)	
Increment 5	5 ft.	(48 - 60 inches)	

Parameter	Units & Speciation	Sample Point	Depth Increments ^a
Increment 6	6 ft. (60 - 72 inches)		
^b	Random 1 \equiv Each year one of the five locations will be sampled for these extra depths until all five locations have been sampled once.		
^c	Every effort shall be made to collect samples in areas without fill, yet maintain good spatial coverage of the land treatment area. If a sample location has identifiable fill at a given depth, that clearly contains less than a combined 60 percent of sand, clay, and/or organic matter, then no sample needs to be collected at that depth. If a sample is not collected, provide a note in the annual report that the depth contained fill.		

The following table applies to the remaining four locations from the land treatment area.

Parameter	Units & Speciation	Sample Point	Depth Increments ^a
Exchangeable Sodium Percentage	%	Random 2 - 4 ^b	1, 2, 4, 5 ^c
Cation Exchange Capacity	meq/100g	Random 2 - 4	1, 2, 4, 5
Organic Matter	%	Random 2 - 4	1, 2, 4, 5
Moisture Content	%	Random 2 - 4	1, 2, 4, 5
Total Kjeldahl Nitrogen (TKN)	mg/Kg as N	Random 2 - 4	1, 2, 4, 5
Nitrate plus Nitrite Nitrogen	mg/Kg as N	Random 2 - 4	1, 2, 4, 5
Ammonia – Nitrogen	mg/Kg as N	Random 2 - 4	1, 2, 4, 5
Phosphorus (Total)	mg/Kg	Random 2 - 4	1, 2, 4, 5
Conductivity	micromhos/cm	Random 2 - 4	1, 2, 4, 5
Calcium (Total)	meq/100g	Random 2 - 4	1, 2, 4, 5
Iron (Total)	mg/Kg	Random 2 - 4	1, 2, 4, 5
Magnesium (Total)	meq/100g	Random 2 - 4	1, 2, 4, 5
Manganese (Total)	mg/Kg	Random 2 - 4	1, 2, 4, 5
Potassium (Total)	mg/Kg	Random 2 - 4	1, 2, 4, 5
Sodium (Total)	meq/100g	Random 2 - 4	1, 2, 4, 5
Chloride	mg/Kg	Random 2 - 4	1, 2, 4, 5
Sulfate	mg/Kg as S	Random 2 - 4	1, 2, 4, 5
pH	Standard Units	Random 2 - 4	1, 2, 4, 5
^a	Depth increment (ft.) vs. Depth (inches) for composite samples:		
Increment 1	1 ft. (0 - 12 inches)		
Increment 2	2 ft. (12 - 24 inches)		
Increment 3	3 ft. (24 - 36 inches)		
Increment 4	4 ft. (36 - 48 inches)		
Increment 5	5 ft. (48 - 60 inches)		
Increment 6	6 ft. (60 - 72 inches)		
^b	Random 2 - 4 \equiv Each year the remaining four locations will be sampled at these depths.		
^c	Every effort shall be made to collect samples in areas without fill, yet maintain good spatial coverage of the land treatment area. If a sample location has identifiable fill at a given depth, that clearly contains less than a combined 60 percent of sand, clay, and/or organic matter, then no sample needs to be collected at that depth. If a sample is not collected, provide a note in the annual report that the depth contained fill.		

S2.E. Crop monitoring

The Permittee must:

1. Monitor the crops for the parameters listed below once per cutting.
2. Comprise composite samples of at least ten (10) random samples collected from the entire land treatment area.
3. Submit results in the annual summary specified in Special Condition S12.

Parameter	Units, Speciation, & Measurement Basis
Crop Production	dry tons/acre
Nitrate plus Nitrite Nitrogen	mg/Kg as N (dry weight)
Phosphorus	%

S2.F. 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.

Groundwater sampling must conform to the latest protocols in the *Implementation Guidance for the Ground Water Quality Standards* (Ecology 2005).

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).

The Permittee must conduct and report all soil analysis in accordance with the *Western States Laboratory Plant, Soil and Water Analysis Manual, Soil, Plant and Water Reference Methods for the Western Region*, 4th Edition, 2013. You can find more information at:

<http://www.naptprogram.org/files/napt/publications/method-papers/western-states-methods-manual-2013.pdf>

The Permittee must also participate in a proficiency testing program, such as the North American Proficiency Testing Program. You can find more information at: <http://www.naptprogram.org/>.

S2.G. Flow measurement, field measurement, and continuous monitoring devices

The Permittee must:

1. Select and use appropriate flow measurement, field measurement, and continuous flow 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 waste stream.
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.
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.H. 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, depth to water, temperature, conductivity, pH, dissolved oxygen, oxidation-reduction potential, settleable solids, and internal process control parameters are exempt from this requirement.

Crops and soils data are considered process control parameters, which do not require preparation by an accredited laboratory. However, the Permittee must obtain this data from a reputable agricultural test lab that is an active participant in a nationally recognized agricultural laboratory proficiency testing program.

S2.I. Request for reduction in monitoring

The Permittee may request a reduction of the sampling frequency after twelve (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 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. For example, if samples are to be collected twice a week and irrigation only occurs on one day that week, the second sample is marked as "No Discharge" in the DMR.
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. Ensure that DMRs are electronically submitted no later than the dates specified below, unless otherwise specified in this permit.
7. 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 **continuous** monitoring results, unless otherwise specified in the permit, by the 28th day of the following month. Report continuous data as the maximum value for each day of the month.
 - b. Submit **2/weekly** monitoring results, unless otherwise specified in the permit, by the 28th day of the following month. Twice weekly data must report two values as specified in Special Conditions S1.A and S2 for each week of the month.
 - c. Submit **weekly** monitoring results, unless otherwise specified in the permit, by the 28th day of the month following the monitoring period. Weekly data must have at least one value as specified in Special Conditions S1.A and S2 reported for each week of the month.
 - d. Submit **monthly** monitoring results by the 28th day of the following month. Monthly data must have at least one value as specified in Special Conditions S1.A and S2 reported for the month.

The first monitoring results for monitoring frequencies a through d above will be XX XX, 20XX.

- e. Submit **quarterly** monitoring results, unless otherwise specified in the permit, by the 28th day of the month following the monitoring period. Quarterly sampling periods are January through March, April through June, July through September, and October through December. The Permittee must submit the first quarterly DMR on XX XX, 20XX, for the quarter beginning on XX XX, 20XX.
- f. Submit **semiannual** DMRs, unless otherwise specified in the permit, by July 28 and January 28 of each year. Semiannual sampling periods are January through June, and July through December.

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 Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452**

S3.C. Records retention

The Permittee must retain records of all monitoring information for a minimum of three (3) 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.

The Permittee must retain all records pertaining to the monitoring of sludge for a minimum of five years.

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 Special 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 Special 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 thirty (30) days of sampling.

a. Immediate reporting

The Permittee must immediately report to the Department of Ecology and the Department of Health, Drinking Water Program (at the numbers listed below), all:

- Overflows or leaks of transmission or irrigation pipelines that discharge to a waterbody used as a source of drinking or irrigation water.

Northwest Regional Office 425-649-7000

Skagit County Public Health 360-336-9380

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. Maps, drawings, aerial photographs, or pictures to show the location and cause(s) of the noncompliance.
3. The period of noncompliance, including exact dates and times.
4. The estimated time the Permittee expects the noncompliance to continue if not yet corrected.
5. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
6. 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. You can obtain further instructions at the following website:

<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.

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 also includes keeping a daily operation logbook (paper or electronic), 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 (O&M) manual

a. O&M manual submittal and requirements

The Permittee must:

1. Prepare an O&M manual that meets the requirements of 173-240-150 WAC and submit it to Ecology for approval by XX XX, 20XX. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format (PDF)).
2. Review the O&M manual at least annually.
3. Submit to Ecology for review and approval substantial changes or updates to the O&M manual whenever it incorporates them into the manual.
4. Keep the approved O&M manual at the permitted facility.
5. Follow the instructions and procedures of this manual.

b. O&M manual components

In addition to the requirements of WAC 173-240-150, the O&M manual must be consistent with the guidance in Table G1-3 in the Criteria for Sewage Works Design (Orange Book), 2008. The O&M manual must include:

1. Provisions for disposing of excess wastewater, high strength wastes such as spoiled wort or mash, or spilled product.
2. Emergency procedures for plant shutdown and cleanup in the event of a wastewater system upset or failure including pipeline leaks.
3. Irrigation system operational controls and procedures.
4. Wastewater system maintenance procedures that contribute to the generation of wastewater.
5. 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.)

6. Treatment plant process control monitoring schedule.
7. Wastewater sampling protocols and procedures for compliance with the sampling and reporting requirements in the wastewater discharge permit.
8. Minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit.
9. Protocols and procedures for groundwater monitoring network, vadose zone, and soil sampling and testing.

c. Spill prevention and emergency cleanup plan (SPECP)

The O&M manual shall include a SPECP that includes BMPs to prevent spills that can contaminate soils, storm water, surface water or groundwater. The SPECP shall specify BMPs for material handling procedures, storage requirements, cleanup equipment and procedures, and spill logs, as appropriate. The Permittee shall:

1. Store all chemical liquids, fluids, and petroleum products, on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater.
2. Prevent precipitation from accumulating in containment areas with a roof or equivalent structure or include a plan on how it will manage and dispose of accumulated water if a containment area cover is not practical.
3. Locate spill kits within 25 feet of all stationary chemical storage and used oil storage/transfer areas. At a minimum, spill kits shall include:
 - i. Absorbents capable of absorbing 15 gallons of material.
 - ii. A storm drain plug or cover kit.
 - iii. A non-water containment boom, a minimum of 10 feet in length with a 12-gallon absorbent capacity.
 - iv. A non-metallic shovel.
 - v. Two five-gallon buckets with lids.
4. Locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas).
5. Use drip pans and absorbents under or around leaky vehicles and equipment or store indoors where feasible. Drain fluids from equipment and vehicles prior to on-site storage or disposal.

6. Maintain a spill log that includes the following information for chemical and petroleum spills: date, time, amount, location, and reason for spill; date/time cleanup completed, notifications made and staff involved.

S4.B. Bypass procedures

This permit prohibits a bypass, which is the intentional diversion of waste streams from any portion of a treatment facility to an on-site discharge.

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 affect public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least ten (10) 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.
- The Permittee has properly notified Ecology of the bypass as required in Special Condition S3.F 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 thirty (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 that 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.

S4.C. Irrigation land application best management practices

The Permittee must:

1. Operate the spray field system to protect the existing and future beneficial uses of the groundwater, and not cause a violation of the groundwater standards.
2. Not allow spray irrigation practices to result in runoff of wastewater to any surface waters of the state or to any land not owned by or under its control.
3. Use recognized good practices, and all available and reasonable procedures to control odors from the land application system.
4. Implement measures to reduce odors to a reasonable minimum when notified by Ecology.
5. Not apply wastewater to the land treatment sites in quantities that:
 - a. Significantly reduce or destroy the long-term infiltration rate of the soil.
 - b. Would cause long-term anaerobic conditions in the soil.
 - c. Would cause ponding of wastewater and produce objectionable odors or support insects or vectors.
 - d. Would cause leaching losses of constituents of concern beyond the treatment zone or in excess of the approved design. Constituents of concern are constituents in the wastewater, partial decomposition products, or soil constituents that would alter groundwater quality in amounts that would affect current and future beneficial uses.
6. Maintain all irrigation agreements for lands not owned for the duration of the permit cycle. Any reduction in irrigation lands by termination of any irrigation agreements may result in permit modification or revocation.
7. Immediately inform Ecology in writing of any proposed changes to existing irrigation agreements.
8. Maintain a viable and healthy cover crop on all fields that receive wastewater.
9. Use supplemental water or precipitation to meet the leaching requirement to control soil salinity.
10. Adjust irrigation plans during high precipitation events to minimize percolate losses.
11. Discontinue operation during periods of heavy or prolonged rainfall to prevent ground saturation and runoff.
12. Use BMPs when discharging wastewater as irrigation to managed vegetation to prevent:
 - a. Groundwater contamination.
 - b. The ponding of wastewater on irrigation lands.
 - c. The *erosion* of soil on irrigation lands.

- d. Runoff of wastewater to any Surface Waters of the State or to any land **not** owned by you or under your control.
 - e. Subsurface drainage through *tile drainage*.
- 13. Select crops or vegetation with adequate nutrient uptake capacity and based on their tolerance to high soil moisture conditions and irrigation requirements.
 - 14. Maintain viable and healthy vegetation on all irrigation lands that receive wastewater.
 - 15. Use an application system that provides even distribution of the wastewater over the irrigation lands.
 - 16. Maintain irrigation agreements for lands you do **not** own, for the entire duration of the permit cycle. In your SWPPP, document the address or coordinates of the irrigation lands, the receiving party's name, the volume of wastewater to be applied, and the total area of the irrigation lands.
 - 17. Apply wastewater according to the rates specified in this permit. Use supplemental irrigation water (non-wastewater) to irrigate vegetation as needed to maintain healthy and viable vegetation and to comply with the benchmarks in Special Condition S4.A (Discharge Limits).
 - 18. Provide sufficient self-contained storage for all wastewater during any period when discharges to irrigation lands are prohibited (e.g., the irrigation lands are frozen or saturated).

S5. Solid wastes

S5.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.

S5.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.

S6. Application for permit renewal or modification for facility changes

The Permittee must submit an application for renewal of this permit by XX XX, 20XX.

The Permittee must also submit a new application or addendum at least sixty (60) 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.

S7. Non-routine and unanticipated wastewater

1. Beginning on the effective date of this permit, the Permittee is authorized to discharge non-routine wastewater or unanticipated wastewater and therefore not listed on the permit application, on a case-by-case basis if approved by Ecology. 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 minute.
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 Special Condition S1 of this permit, water quality standards, and any other limits imposed by Ecology.
3. The Permittee must limit the discharge rate, as referenced in subpart 1.g, above, so it will not cause erosion of ditches or structural damage to culverts and their entrances or exits.
4. 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. Once approved and if the proposed discharge is to a municipal storm drain, the Permittee must obtain prior approval from the municipality and notify it when it plans to discharge.

S8. Industrial stormwater discharge

If the Permittee discharges stormwater exposed to industrial activities to surface waters or to a storm sewer system that drains to surface water, the Permittee must apply for coverage under the NPDES Industrial Stormwater General Permit.

Facilities are eligible for a conditional no exposure (CNE) exemption if there is “no exposure” of industrial materials and activities to rain, snow, snow melt, and/or runoff. To obtain a CNE exemption, the Permittee must submit an online No Exposure Certification Form to Ecology.

Information about the permit and CNE and application forms are available at:
<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Industrial-stormwater-permit> .

S8.A. Maintenance of hoses, soil chutes, and piping

The Permittee must:

1. Immediately replace or repair leaking connections, valves, pipes, and hoses, carrying either water or wastewater.
2. Maintain chutes and hose connections for grain transfer to prevent dust emissions.

S8.B. Chemical storage

The Permittee must store solid chemicals, chemical solutions, paints, oils, solvents, acids, caustic solutions, and waste materials, in a manner which will prevent the inadvertent entry of these materials into waters of the state, including ground water. Storage methods must prevent spills due to overfilling, tipping, or rupture. In addition, the Permittee must use the following practices:

1. Store all liquid products on durable impervious surfaces and within bermed containment capable of containing 110% of the largest single container in the storage area. Segregate and secure incompatible or reactive materials stored in separate containment areas to prevent inadvertent mixing and reaction of spilled chemicals.
2. Store waste liquids and solids under cover to prevent mixing with rain using tarpaulins, roofed structures, container lids, etc.
3. No batch discharge of disinfection chemicals to treatment system.

S8.C. Pollutant source control guidelines

1. Water-conserving devices (e.g. pressure washers, trigger-handled spray nozzles, automatic barrel cleaners, stainless steel tanks, and smooth floors) should be used to minimize wastewater generation.
2. Use of cleaning chemicals should be minimized. Less toxic ozonated washwater and oxygen-based cleaners are preferred.
3. Grain, hops, trub, settling agents, and other residual solids should be disposed as solid waste and excluded from the spray field system.
4. Septic tank(s) contents should be easily accessible to inspect solids levels, pump out solids, and clean/replace effluent filters.

S8.D. Prohibitions

1. The discharge of any waste to surface waters is prohibited.
2. The discharge of waste other than brewery wastewater (e.g. domestic wastewater) into a surface treatment and disposal system is prohibited.
3. The discharge of trub of grain to the spray field is prohibited.
4. Maintain a 100-foot minimum buffer between the brewery wastewater application area and the drainfield for the on-site septic system.

5. Not discharge concentrated waste or spilled chemicals to land application system or state waters.
6. Keep all dumpsters under cover or fit with a lid that must remain closed when not in use.
7. Immediately clean up outdoor spills and leaks (e.g., using absorbents, vacuuming) to prevent the discharge of pollutants.
8. Minimize the exposure and material storage areas (including loading and unloading, storage, disposal) to rain, snow, snowmelt, and runoff by either locating these industrial materials and activities inside or protecting them with storm-resistant coverings.
9. Water from washing vehicles or equipment, steam cleaning and/or pressure washing is considered process wastewater.

S8.E. Training

1. The Permittee must conduct annual training for employees who work with beer and alcohol production. At a minimum, the training shall include:
 - a) Spill response procedures, good housekeeping, maintenance requirements, and material management practices.
 - b) A log of the dates on which specific employees received training.
- 1) **Inspections and record keeping:** The SWPPP shall include documentation of procedures to ensure compliance with requirements for inspections and record keeping.

S8.F. Prohibited discharges

Unless authorized by a separate NPDES or state waste discharge permit, the following discharges are prohibited:

- Permittees shall manage storm water to divert it away from surface waters of the State and the land application area.

S9. Groundwater monitoring network evaluation

The Permittee must evaluate the impacts of its activities on groundwater quality by completing the elements below to include a scope of work for a groundwater monitoring network evaluation, conducting the groundwater monitoring network evaluation, installation of a groundwater monitoring network, a final report of network evaluation installation and results, and ongoing monitoring.

1. By XX XX, 20XX, the Permittee must submit a scope of work to Ecology for a groundwater monitoring network evaluation at the wastewater application site, in accordance with WAC 173-200-080. The scope of work must conform to *Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*, Ecology 1993.

2. Upon approval of the scope of work by Ecology, the Permittee must conduct the study to determine site-specific hydrogeologic conditions, well siting, quality control protocols, a sampling plan, and sampling protocols. The Permittee must submit a draft report with the recommendations for groundwater monitoring well locations within 180 days of approval of the scope of work.
3. Within sixty (60) days after review and approval of the draft report by Ecology, the Permittee must begin construction of the groundwater monitoring network. The Permittee must construct wells in accordance with Chapter 173-160 WAC.
4. After completion of the installation of the groundwater monitoring network, the Permittee must submit a final network evaluation report to Ecology and begin monitoring according to S2.

S10. Groundwater monitoring wells

To meet the requirements of this permit, the Permittee must install three (3) permanent groundwater monitoring wells. It is anticipated that one well will be located within the land treatment area, and the other two wells between the land treatment area and Edison Slough (likely one to the east and one to the west). The final location of the monitoring wells will be based on results of the study outlined in Special Condition SXX above and approved by Ecology. The Permittee must:

1. Install monitoring wells in accordance with the approved hydrogeologic study.
2. Meet the requirements of Chapters 173-160 and 173-162 WAC during groundwater well construction.
3. Report to Ecology the tag numbers, latitude and longitude (NAD83/WGS84 datum), and top-of-casing elevations (NAVD88 datum) of each monitoring well.
4. Complete well installation and commence sampling by XX XX 20XX.

S11. Annual summary report

The Permittee must submit an annual summary report by March 1st of each year for Ecology review. The plan must be prepared or reviewed by a soil scientist and must generally conform to the *Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*, Ecology 1993.

The annual summary report must include a summary of operations for the previous year as described in the section below.

S11.A. Annual summary of operations for previous year

The annual summary must include:

1. For each crop grown, the total acreage and quantity harvested.
2. Calculated balances for nitrate + nitrite, total nitrogen, total phosphorous, and TDS. The calculations must include crop consumptive use, wastewater loadings of nitrate + nitrite, total nitrogen, total phosphorous, and TDS, and contributions from commercial fertilizers applied, and supplemental water used.

3. A **water balance**, including the following calculations:
 - a. Irrigation system efficiency and application uniformity, determined qualitatively based on sprinkler specifications and measured sprinkler output and coverage.
 - b. The quantity of supplemental irrigation water and wastewater applied.
 - c. Crop consumptive use.
 - d. Water stored in the soil profile outside the normal growing season.
 - e. Salt leaching requirements.
 - f. The leaching fraction for each field.
4. A summary and evaluation of the **soil testing results**.
5. A summary and evaluation of the **crop testing results**.
6. A summary of groundwater monitoring test results and an evaluation of whether the current operation of the land treatment site is protecting groundwater quality.
7. A detailed list of changes or improvements in the management of the land treatments practices to comply with agronomic rates and leaching requirements.

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 at least one hundred eighty (180) days before it wants to discharge more of any pollutant, a new pollutant, or more flow than allowed under this permit. The Permittee should use the State Waste Discharge Permit application, and submit required plans at the same time. Required plans include an engineering report, plans and specifications, and an operations and maintenance manual (see Chapter 173-240 WAC). Ecology may waive these plan requirements for small changes, so contact Ecology if they do not appear necessary. The Permittee must obtain the written concurrence of the receiving POTW on the application before submitting it to Ecology. The Permittee must continue to comply with the existing permit until it is modified or reissued. Submitting a notice of dangerous waste discharge (to comply with pretreatment or dangerous waste rules) triggers this requirement as well.

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. 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.

G9. 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 may be deemed 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 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.

G10. Duty to provide information

The Permittee must submit to Ecology, within a reasonable time, all information that 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.

G11. 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. **The list also includes pulp and paper pollutants identified in 40 CFR Part 430, and the dioxin and furan congeners identified using EPA Method 1613.**

CONVENTIONAL POLLUTANTS

Pollutant	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Biochemical Oxygen Demand		SM5210-B		2 mg/L
pH		SM4500-H ⁺ B	N/A	N/A
Total Suspended Solids		SM2540-D		5 mg/L

NONCONVENTIONAL POLLUTANTS

Pollutant & CAS No. (if available)	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
Alkalinity, Total		SM2320-B		5 mg/L as CaCO ₃
Ammonia, Total (as N)		SM4500-NH ₃ -B and C/D/E/G/H		20
Calcium Total				
Chloride		SM4500-Cl B/C/D/E and SM4110 B		Sample and limit dependent
Conductivity				
Dissolved oxygen		SM4500-OC/OG		0.2 mg/L
Flow		Calibrated device		
Fluoride	16984-48-8	SM4500-F E	25	100
Hardness, Total		SM2340B		200 as CaCO ₃
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
Nitrate + Nitrite Nitrogen (as N)		SM4500-NO ₃ - E/F/H		100
Nitrogen, Total Kjeldahl (as N)		SM4500-N _{org} B/C and SM4500NH ₃ - B/C/D/EF/G/H		300
Phosphorus, Total (as P)		SM 4500 PB followed by SM4500-PE/PF	3	10
Potassium, Total				
Sodium, Total				
Sulfate (as mg/L SO ₄)		SM4110-B		0.2 mg/L
Temperature		Analog recorder or use micro-recording devices known as thermistors		0.2° C
Total Organic Carbon		SM5310-B/C/D		1 mg/L
Total Dissolved Solids		SM2540 C		20 mg/L

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.

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, or 5) x 10ⁿ, 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).