

Issuance Date: October 21, 2021
Effective Date: November 1, 2021
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**National Pollutant Discharge Elimination System
Waste Discharge Permit No. WA0000680**

State of Washington
DEPARTMENT OF ECOLOGY
Industrial Section
PO Box 47600
Olympia, WA 98504-7600

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1342 et seq.

Alcoa Wenatchee LLC
6200 Malaga Alcoa Highway
Malaga, WA 98828

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

Facility Location: Malaga, Washington	Receiving Water: Columbia River
Treatment Type: Primary and Secondary	SIC Code: 3334
Industry Type: Aluminum Smelter	NAICS Code: 331313
	Categorical Industry: 40 CFR Part 421, Subpart B



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Table of Contents

<i>Summary of Permit Report Submittals</i>	6
<i>Special Conditions</i>	8
S1. Discharge Limits	8
S1.A. Process wastewater discharges	8
S1.B. Diversion for pH.....	10
S1.C. Diversion for Maintenance Activities or Spills	10
S1.D. Mixing zone authorization	11
S2. Monitoring Requirements	11
S2.A. Monitoring schedule.....	11
S2.B. Reduced Monitoring During Temporary Curtailment.....	15
S2.C. Sampling and analytical procedures	17
S2.D. Flow measurement, field measurement, and continuous monitoring devices.....	17
S2.E. Laboratory accreditation	18
S2.F. Request for reduction in monitoring.....	18
S3. Reporting and Recording Requirements	19
S3.A. Discharge monitoring reports.....	19
S3.B. Permit Submittals and Schedules	20
S3.C. Records retention.....	21
S3.D. Recording of results	21
S3.E. Additional monitoring by the Permittee	21
S3.F. Reporting permit violations	21
S3.G. Other reporting.....	23
S3.H. Maintaining a copy of this permit	23
S4. Operation and Maintenance	24
S4.A. Operations and maintenance (O&M) manual.....	24
S4.B. Bypass procedures.....	25
S5. Solid Wastes	27
S5.A. Solid waste handling.....	27
S5.B. Leachate.....	27
S5.C. Solid waste control plan	27
S6. Application for Permit Renewal or Modification for Facility Changes	28
S7. Wastewater Characterization/AKART Study and Engineering Report	28
S7.A. Wastewater Characterization Study.....	28
S7.B. AKART Analysis.....	29
S7.C. Engineering Report	29
S8. Non-Routine and Unanticipated Wastewater	30
S9. Spill Control Plan	30
S9.A. Spill control plan submittals and requirements.....	30
S9.B. Spill control plan components	30
S10. Stormwater Pollution Prevention Plan	31
S10.A. SWPPP Update.....	31
S10.B. SWPPP Modifications.....	32
S10.C. SWPPP Inspections	32
S10.D. SWPPP Evaluation.....	33

S10.E.SWPPP Best Management Practices During Normal Operations.....	33
S10.F.SWPPP Best Management Practices During Temporary Curtailment	34
S11. Sediment Monitoring.....	34
S11.A.Sediment sampling and analysis plan	34
S11.B.Sediment data report.....	34
S12. Outfall Evaluation.....	35
S13. Certified Operator.....	35
S14. Acute Toxicity	36
S14.A.Effluent characterization	36
S14.B.Effluent limit for acute toxicity	36
S14.C.Compliance with the effluent limit for acute toxicity	37
S14.D.Compliance testing for acute toxicity	37
S14.E. Response to noncompliance with the effluent limit for acute toxicity.....	37
S14.F. Testing when there is no permit limit for acute toxicity.....	39
S14.G.Sampling and reporting requirements.....	39
S15. Chronic Toxicity.....	40
S15.A.Effluent characterization	40
S15.B.Effluent limit for chronic toxicity	41
S15.C.Compliance with the effluent limit for chronic toxicity	41
S15.D.Compliance testing for chronic toxicity	42
S15.E. Response to noncompliance with the effluent limit for chronic toxicity	42
S15.F. Testing when there is no permit limit for chronic toxicity.....	43
S15.G.Sampling and reporting requirements.....	44
S16. Cooling Water Intake Structure (CWIS).....	45
S16.A. Operations and Maintenance.....	45
S16.B. Annual Certification Statement and Report.....	46
S16.C. Entrainment Performance Study.....	46
S16.D. Endangered Species Act.....	46
<i>General Conditions</i>.....	47
G1. Signatory Requirements.....	47
G2. Right of Inspection and Entry.....	48
G3. Permit Actions.....	48
G4. Reporting Planned Changes.....	49
G5. Plan Review Required.....	50
G6. Compliance with Other Laws and Statutes.....	50
G7. Transfer of Permit.....	50
G8. Reduced Production for Compliance	50
G9. Removed Substances	51
G10. Duty to Provide Information.....	51
G11. Other Requirements of 40 CFR.....	51
G12. Additional Monitoring.....	51

G13. Payment of Fees.....	51
G14. Penalties for Violating Permit Conditions.....	51
G15. Upset.....	51
G16. Property Rights	52
G17. Duty to Comply	52
G18. Toxic Pollutants.....	52
G19. Penalties for Tampering	52
G20. Reporting Requirements Applicable to Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers	53
G21. Compliance Schedules.....	53
List of Pollutants with Analytical Methods, Detection Limits and Quantitation Levels	54
Priority Pollutants	58
Analytical Methods.....	67

Tables

Table 1: Summary of Permit Report Submittals	6
Table 2: Effluent Limit Outfall 001 (001C), Latitude 47.358056 Longitude 120.121944.	8
Table 3: pH Limits: Outfall 001 (001C).....	8
Table 4: Effluent Limits: Sanitary Treatment Plant Discharge Location (00SC)	8
Table 5: BOD and TSS Limits	8
Table 6: Other Limits	9
Table 7: Footnotes for Tables 2 and 3.....	9
Table 8: Available Dilution (dilution factor).....	11
Table 9: Intake Water and Wastewater Effluent (001C) via Outfall 001	12
Table 10: Sanitary Treatment Plant Influent and Effluent – 00SC.....	12
Table 11: Ingot Caskhouse Effluent (Between May and September) - INCE	13
Table 12: Production - PROD.....	13
Table 13: Diversion Pond When pH is Below 7.0 or Above 9.0 – DIPH.....	13
Table 14: Diversion Pond When Diverting for Maintenance Activities or Spills – DIMS.....	13
Table 15: Wastewater Characterization/AKART Study	14
Table 16: Sediment Monitoring	14
Table 17: Whole Effluent Toxicity Testing – Final Wastewater Effluent.....	14
Table 18: Footnotes for Tables 6 through 14.....	14
Table 19: Intake Water and Wastewater Effluent (001C) via Outfall 001	16
Table 20: Sanitary Treatment Plant Influent and Effluent – 00SC.....	16
Table 21: Footnotes for Tables 16 and 17	17
Table 22: Acute Toxicity Testing.....	36
Table 23: Acute Toxicity Rotating Compliance Tests.....	37
Table 24 Acute Toxicity: Testing When no Permit Limit is Specified.....	39
Table 25 Chronic Toxicity: Sampling Specifications.....	41
Table 26 Chronic Toxicity: Rotating Compliance Testing.....	42
Table 27 Chronic Toxicity: Testing When No Permit Limit is Specified.....	44

Table 28: Conventional Pollutants	55
Table 29: NonConventional Pollutants	55
Table 30 Priority Pollutants	58
Table 31: Volatile Compounds	60
Table 32: Base/Neutral Compounds (Compounds in Bold are Ecology PBTS)	61
Table 33: Dioxin	64
Table 34: Pesticides/PCBS	64

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
S2.A	Priority Pollutant Testing for Final Effluent - DMR	Once per year	Within 12 months of the facility restart
S2.A	Metal Testing for Ingot Cast-house Effluent - DMR	Semi-annually	Within 12 months of the facility restart. First report by July 15 and second report by January 15.
S2.A	Priority Pollutant Testing for Ingot Cast-house Effluent - DMR	Once per year	Within 12 months of the facility restart
S2.A	Diversion Sampling Results when pH is below 7.0 or above 9.0 - DMR	Quarterly	Upon the facility restart
S2.A	Diversion Sampling Results for Maintenance Activities or Spills-DMR	Monthly	As necessary by the 15 th day of the following month
S3.A	Discharge Monitoring Report	Monthly	December 15, 2021
S3.A	Discharge Monitoring Report	Quarterly	April 15, 2022
S3.A	Discharge Monitoring Report	Annually	January 15, 2023
S3.E	Other Reporting	As necessary	N/A
S3.F	Reporting Permit Violations	As necessary	N/A
S4.A.a.1	Operations and Maintenance Manual Review Confirmation Letter	Annually	January 31, 2022
S4.A.a.2	Operations and Maintenance Manual Update	As necessary	N/A
S4.A.c	Treatment System Operating Plan	1/permit cycle	November 1, 2025
S4.B.2	Reporting Bypasses	As necessary	N/A
S5.C	Solid Waste Control Plan Update	1/permit cycle	November 1, 2025
S5.C	Modification to Solid Waste Plan	As necessary	N/A
S6	Application for Permit Renewal	1/permit cycle	November 1, 2025
S6	Application for Permit Modification for Facility Changes	As necessary	N/A
S7.A	Wastewater Characterization Study Sampling and Analysis Plan	1/permit cycle	Within 12 months of the facility restart
S.7.C	Engineering Report	1/permit cycle	Within 180 days of completion of wastewater characterization study
S7.C	Interim Progress Report	As necessary	N/A
S8	Non-Routine and Unanticipated Discharges Report	As necessary	N/A
S9.A	Spill Plan Update	1/permit cycle, updates submitted as necessary	November 1, 2025

Permit Section	Submittal	Frequency	First Submittal Date
S10.A	Stormwater Pollution Prevention Plan Update	1/permit cycle	Within 18 months of the facility restart
S10.B	Stormwater Pollution Prevention Plan Modification	As necessary	N/A
S10.C	Stormwater Pollution Prevention Plan Inspection Report	Annually	December 31, 2022
S11.A	Revised Sediment Sampling and Analysis Plan	1/permit cycle	May 1, 2023
S11.B	Sediment Data Report	1/permit cycle	Within 90 days of receiving final test results
S12	Outfall Evaluation Report	1/permit cycle	Within 90 days of conducting the evaluation
S14.A	Acute Toxicity Testing Results	Quarterly	Within 12 months of the facility restart
S15.A	Chronic Toxicity Testing Results	Quarterly	Within 12 months of the facility restart
S16.A.1	Operations and Maintenance Manual for CWIS	1/permit cycle	Within 12 months of the facility restart
S16.B.1	Annual Signed Certification Statement	Annually	January 31, 2022
S16.C	Entrainment Performance Study	1/permit cycle	November 1, 2025
G1	Notice of Change in Authorization	As necessary	N/A
G4	Permit Application for Substantive Changes to the Discharge	As necessary	N/A
G5	Engineering Report for Construction or Modification Activities	As necessary	N/A
G7	Notice of Permit Transfer	As necessary	N/A
G10	Duty to Provide Information	As necessary	N/A
G21	Compliance Schedules	As necessary	N/A

Special Conditions

S1. Discharge Limits

S1.A. Process wastewater discharges

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

The discharge of any of the following pollutants more frequently than, or at a level in excess of that identified and authorized by this permit violates the terms and conditions of this permit.

Beginning on the effective date of this permit, the Permittee is authorized to discharge treated domestic wastewater, non-contact cooling water, boiler blowdown water, stormwater runoff, and other miscellaneous process wastewater streams to the Columbia River at the permitted location Outfall 001 subject to complying with the following limits:

Table 2: Effluent Limit Outfall 001 (001C), Latitude 47.358056 Longitude 120.121944

Parameter	Average Monthly ^a	Maximum Daily ^b
Total Suspended Solids (TSS) ^c	100 lbs/day	500 lbs/day
Aluminum ^c	15 lbs/day	46 lbs/day
Oil and Grease (O&G) ^d	50 lbs/day	250 lbs/day
Fluoride	25 lbs/day	150 lbs/day
Heat Load ^e	531 million kilocalories per day (million kcal/day) ^f	--

Table 3: pH Limits: Outfall 001 (001C)

Parameter	Minimum	Maximum
pH ^g	6.0 standard units	9.0 standard units

Table 4: Effluent Limits: Sanitary Treatment Plant Discharge Location (00SC)

Parameter	Monthly Geometric Mean ^h	Weekly Geometric Mean ^h
Fecal Coliform Bacteria ⁱ	200 #/100 milliliter (mL)	400 #/100 mL

Table 5: BOD and TSS Limits

Parameter	30-Day Average ^a	7-Day Average ^j
Biochemical Oxygen Demand (5-day) (BOD ₅) ^k	25 mg/L	45 mg/L
	19 lbs/day	34 lbs/day
Total Suspended Solids (TSS) ^k	45 mg/L	45 mg/L
	34 lbs/day	34 lbs/day

Table 6: Other Limits

Parameter	Minimum	Maximum
Total Residual Chlorine ¹	0.1 ppm	2.0 ppm
UV Tubes Operating	9	N/A
pH ^g	6.0 standard units	9.0 standard units

Table 7: Footnotes for Tables 2 and 3

Footnotes	Information
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 is the highest allowable daily discharge. The daily discharge is the average 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.
c	The Permittee may subtract the amount of pollutants present in its intake water as determined by analysis from the amount present in its discharge water and report the calculated value. The Permittee must include both the intake water and the actual discharge values in the data summary sheets required by permit condition S3.A.
d	For Oil and Grease concentration results that are below detection as “less than the detection level (DL)”, enter a < followed by the numeric value of the detection level (e.g. <0.2) on the DMR. To calculate mass loading, use 1/2 of the DL to calculate the lbs/day discharged.
e	The average monthly heat load is calculated as the product of the average monthly temperature, average monthly flow, and a conversion factor of 3.77x10 ⁶ . The average monthly temperature is calculated as the sum of average daily temperatures divided by the number of daily discharges measured in the month. The average monthly flow is calculated as the sum of average daily flows divided by the number of daily discharges measured in the month.
f	The average monthly heat load limit only applies from July through October.
g	pH shall be maintained within the range of 6.0 to 9.0. Excursions between 5.0 and 6.0 or 9.0 and 10.0 are not to be considered violations if no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 26 minutes per month. Any excursions below 5.0 and above 10.0 at any time are violations. The Permittee must record and report the:

Footnotes	Information
	<ul style="list-style-type: none"> • Number of minutes the pH value measured between 5.0 and 6.0 and between 9.0 and 10.0 for each day. • Total minutes for the month. • Monthly instantaneous maximum and minimum pH. <p>If multiple excursions occur during the day, note the duration for each excursion. If submitting electronic DMRs, include this additional information in the parameter notes.</p>
h	<p>Ecology provides directions to calculate the monthly and the 7-day geometric mean in publication No. 04-10-020, Information Manual for Treatment Plant Operators available at:</p> <p>https://apps.ecology.wa.gov/publications/SummaryPages/0410020.html</p>
i	<p>Any exceedance of the Fecal Coliform Weekly Geometric Mean limit will require daily sampling until the value for each sample is below 400 colonies/100mls for three consecutive days.</p>
j	<p>The 7-Day Average effluent limitation is defined as the highest allowable discharge rate for 7 consecutive days, calculated as the average of all samples taken during the 7-day interval.</p>
k	<p>In addition, if the 30-Day average effluent mass loading for BOD or TSS is greater than 5 lbs/day, the 30-Day average percent removal for these parameters shall be greater than or equal to 85 percent during normal operations or 65 percent during curtailment.</p> <p>If the 30-Day average effluent mass loading for BOD or TSS is equal or less than 5 lbs/day, the 30-Day average percent removal limits for these parameters shall not apply.</p>
l	<p>Total chlorine residual will only be required to be tested and the minimum limit will only apply when the chlorination system is operating. With installation of the UV disinfecting system, the chlorination system will be retained for backup disinfection during UV maintenance operations and upset conditions.</p>

S1.B. Diversion for pH

Beginning on the effective date of this permit, the Permittee is authorized to divert the final effluent to the existing diversion pond when the pH drops below 7.0 or rises above 9.0. The effect of this diversion is to cease any discharge to the Columbia River. The diversion must be monitored for the parameters and the frequency listed in Table 10 under S2.A. The diversion is not subject to the effluent limitations in S1.A.

S1.C. Diversion for Maintenance Activities or Spills

Beginning on the effective date of this permit, the Permittee is authorized to divert the final effluent to the existing diversion pond during routine maintenance

activities or to prevent discharge of spilled materials to the river when spills occur on-site and enter the stormwater system.

The effect of this diversion is to cease any discharge to the Columbia River. Unless an emergency situation occurs, the Permittee is required to notify Ecology prior to each diversion event. In an emergency situation, the Permittee is required to notify Ecology within **24 hours** of the onset of the discharge. Outside of normal working hours, voice mail notification of the Industrial Section's responsible engineer, shall meet the requirement. The diversion must be monitored for the parameters and frequency listed in Table 9 under S2.A. except for diversions necessary to calibrate or function test the diversion equipment, provided that the permittee is not aware of any impacts to water quality related to the calibration or function tests. The diversion is not subject to the effluent limitations in S1.A.

S1.D. Mixing zone authorization

Mixing zone for Outfall 001

The paragraph below defines the maximum boundaries of the mixing zones.

Chronic mixing zone

The length of the chronic mixing zone extends 100 feet upstream and 336 feet downstream of the outfall. The mixing zone extends from the bottom to the top of the water column. The concentration of pollutants at the edge of the chronic zone must meet chronic aquatic life criteria and human health criteria.

Acute mixing zone

The length of the acute mixing zone extends 10 feet upstream and 33.6 feet downstream of the outfall. The mixing zone extends from the bottom to the top of the water column. The concentration of pollutants at the edge of the acute zone must meet acute aquatic life criteria.

Table 8: Available Dilution (dilution factor)

Criteria	Factor
Acute Aquatic Life Criteria	33
Chronic Aquatic Life Criteria	99
Human Health Criteria - Carcinogen	210
Human Health Criteria - Non-carcinogen	192

S2. Monitoring Requirements

S2.A. Monitoring schedule

The Permittee must monitor in accordance with the following schedule and the requirements specified in **Appendix A** except for aluminum. The Permittee may use Method SM 3111 to analyze for aluminum.

Table 9: Intake Water and Wastewater Effluent (001C) via Outfall 001

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Total Suspended Solids (TSS) - Intake	mg/L	2/Week ^a	24-hr composite ^b
Total Suspended Solids (TSS)	mg/L	2/Week ^a	24-hr composite ^b
Total Suspended Solids (TSS)	lbs/day	2/Week ^a	Calculated ⁱ
Fluoride (F)	mg/L	2/Week ^a	24-hr composite ^b
Fluoride (F)	lbs/day	2/Week ^a	Calculated ⁱ
Aluminum (Al) - Intake	mg/L	2/Week ^a	24-hr composite ^b
Aluminum (Al)	mg/L	2/Week ^a	24-hr composite ^b
Aluminum (Al)	lbs/day	2/Week ^a	Calculated ⁱ
Oil & Grease (O&G)	mg/L	Weekly ^c	Grab ^d
Oil & Grease (O&G)	lbs/day	Weekly ^c	Calculated ⁱ
Free Cyanide	mg/L	Monthly ^e	Grab ^d
Benzo(a)pyrene	µg/L	Semi-annually ^f	24-hr composite ^b
pH	Standard Units (SU)	Continuous ^g	Metered/Recorded
Flow	Million gallons/day (mgd)	Continuous ^g	Metered/Recorded
Temperature	Degrees centigrade (°C)	Continuous ^g	Metered/Recorded
Total Rainfall	Inches	Daily ^j	Recorded ^h
Priority Pollutants (PP) ^m (Appendix A)	µg/L; ng/L	Once per year	24-hr composite ^b

Table 10: Sanitary Treatment Plant Influent and Effluent – 00SC

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
BOD ₅ - Influent	mg/L	Weekly ^c	24-hr composite ^b
BOD ₅ - Effluent	mg/L	Weekly ^c	24-hr composite ^b
BOD ₅ - Influent	lbs/day	Weekly ^c	Calculated ⁱ
BOD ₅ - Effluent	lbs/day	Weekly ^c	Calculated ⁱ
TSS - Influent	mg/L	2/Week ^a	24-hr composite ^b
TSS - Effluent	mg/L	2/Week ^a	24-hr composite ^b
TSS - Influent	lbs/day	2/Week ^a	Calculated ⁱ
TSS - Effluent	lbs/day	2/Week ^a	Calculated ⁱ
Fecal Coliform	#/100 ml	Weekly ^c	Grab ^d
E. coli	cfu#/100 ml	Weekly ^{c,s}	Grab ^d
Total Chlorine Residual	ppm	Daily ^j	Grab ^d
pH	SU	Continuous ^g	Metered/Recorded
UV Tubes Operating	# of tubes	M-W-F ^k	Visual inspection
Flow - Influent	MGD	Continuous ^g	Metered/Recorded

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Flow - Effluent	MGD	Continuous ^g	Metered/Recorded

Table 11: Ingot Casthouse Effluent (Between May and September) - INCE

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Aluminum	µg/L	2/Year ¹	Grab ^d
Copper	µg/L	2/Year ¹	Grab ^d
Iron	µg/L	2/Year ¹	Grab ^d
Manganese	µg/L	2/Year ¹	Grab ^d
Potassium	µg/L	2/Year ¹	Grab ^d
Silicon	µg/L	2/Year ¹	Grab ^d
Strontium	µg/L	2/Year ¹	Grab ^d
Zinc	µg/L	2/Year ¹	Grab ^d
Priority Pollutants (PP) ^m (Appendix A)	µg/L; ng/L	Once per year	Grab ^d

Table 12: Production - PROD

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Production	tons/day	Monthly average	Recorded

Table 13: Diversion Pond When pH is Below 7.0 or Above 9.0 – DIPH

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Fluoride (F)	mg/L	Quarterly ⁿ	Grab ^d
Aluminum (Al)	mg/L	Quarterly ⁿ	Grab ^d
Oil & Grease (O&G)	mg/L	Quarterly ⁿ	Grab ^d
pH	SU	Quarterly ⁿ	Grab ^d
Duration	Minutes	Each defined event ⁿ	Recorded
Volume	gallons	Each defined event ⁿ	Metered/Recorded
Total Rainfall	Inches	Each defined event ⁿ	Recorded

Table 14: Diversion Pond When Diverting for Maintenance Activities or Spills – DIMS

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Fluoride (F)	mg/L	One per defined event ^o	Grab ^d
Aluminum (Al)	mg/L	One per defined event ^o	Grab ^d
Oil & Grease (O&G)	mg/L	One per defined event ^o	Grab ^d
pH	SU	One per defined event ^o	Grab ^d
Free Cyanide	mg/L	One per defined event ^o	Grab ^d
Benzo(a)pyrene	µg/L	One per defined event ^o	Grab ^d
Duration	Minutes	One per defined event ^o	Recorded
Volume	gallons	One per defined event ^o	Metered/Recorded

Table 15: Wastewater Characterization/AKART Study
 As specified in Special Condition S7 P.

Parameter	Units	Minimum Sampling Events	Sample Type
Flow	MGD	6	Measured
Cyanide	mg/L	6	Grab ^d
TSS	mg/L	6	Grab ^d
Fluoride	mg/L	6	Grab ^d
Aluminum	mg/L	6	Grab ^d
Oil and Grease	mg/L	6	Grab ^d
pH	standard units	6	Grab ^d

Table 16: Sediment Monitoring
 As specified in Special Condition S11.

Parameters	Minimum Sampling Frequency	Sample Type
As specified in approved sediment sampling and analysis plan ^r	One event ^r	Sediment samples ^r

Table 17: Whole Effluent Toxicity Testing – Final Wastewater Effluent
 As specified in Special Condition S14 and S15.

Parameter	Minimum Sampling Frequency	Sample Type
Acute Toxicity Testing	Quarterly for four consecutive quarters ^q	24-hr composite ^b
Chronic Toxicity Testing	Quarterly for four consecutive quarters ^q	24-hr composite ^b

Table 18: Footnotes for Tables 6 through 14

Footnote	Information
a	Two (2) times during each calendar week and at least 2 days between except weekends and holidays.
b	24-hr composite means a series of individual samples collected over a 24-hour period into a single container and analyzed as one sample.
c	Once per week.
d	An individual sample collected over a fifteen (15) minute, or less, period
e	Once every calendar month. The method for free cyanide analysis shall be Weak Acid Dissociable Cyanide, Method 4500-CN I.
f	Semi-annually is defined as two times per year. Semi-annual sampling is conducted at least once in January through June and at least once in July through December. During Benzo(a)pyrene sample collection and handling, clean techniques per 40 CFR Part 136, Appendix. A, Method 625, shall be used. The composite sample shall be refrigerated in the dark during collection. If testing results in levels above the method detection levels (MDL), the Permittee will sample monthly until tests result in three consecutive months with values below the MDL.
g	Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The Permittee must collect

Footnote	Information
	grab samples every four hours during normal business hours when continuous monitoring is not possible.
h	If rainfall data on-site is unavailable due to equipment malfunction, data from nearby rainfall gauging station can be used.
i	Calculated means figured concurrently with the respective sample, using the following formula: Concentration (in mg/L) X Flow (in MGD) X Conversion Factor (8.34) = lbs/day
j	Once per day. For total chlorine residual, once per day when the chlorination system is operating.
k	Monday, Wednesday, and Friday
l	Two times per year.
m	Priority Pollutant Testing must be performed during normal operations and flow regime. The results must be submitted to the Department within 90 days of the sampling.
n	<p>A defined event is when wastewater is diverted to the Diversion Pond for pH below 7.0 or above 9.0. Al, F, O & G, and pH must be sampled for at least one diversion event for every 6 months. Semi-annual sampling periods are January through June and July through December. The Permittee may petition Ecology to reduce or suspend monitoring for any or all of these parameters when monitoring results for eight (8) consecutive semi-annual sampling periods show there is no reasonable potential to exceed water quality standards.</p> <p>Volume, duration, and total rainfall must be recorded for each diversion event. The Permittee is not required to sample outside of regular environmental staff business hours (Monday – Friday from 8:00 am – 5:00 pm) or during quarters where there is no discharge.</p>
o	<p>A defined event is when wastewater is diverted to the Diversion Pond for maintenance activities or spills. Al, F, O & G, pH, cyanide, and B(a)P must be sampled for each diversion event.</p> <p>Volume, duration, total rainfall, and reason for diversion (maintenance activity or spill) must be recorded for each diversion event.</p>
p	Refer to Special Condition S7 for specific information on applicable wastewater streams and sampling requirements (influent, effluent, minimum time between sampling events, etc).
q	Toxicity testing must be initiated within 12 months of the facility restarting operations. Refer to Special Conditions S14 and S15 for additional requirements.
r	Refer to Special Condition S11 for specifics about parameters, sampling frequency, and types of samples.
s	E. coli monitoring required upon restart of facility operations. The monitoring is only required for two years during the winter months of December-February.

S2.B. Reduced Monitoring During Temporary Curtailment

Temporary curtailment is defined as the shutdown of 90% or more of total potline operations. During periods of temporary curtailment of smelter operations, the Permittee may reduce effluent monitoring to the frequencies shown in the table below. Upon restart and attaining more than 10% total potline operations, monitoring frequencies shall revert back to the monitoring frequencies specified in Condition S2.A.

Table 19: Intake Water and Wastewater Effluent (001C) via Outfall 001

Parameter	Units & Speciation	Sampling Frequency During Temporary Curtailment	Sample Type
Total Suspended Solids (TSS) - Intake	mg/L	Weekly ^b	24-hr composite ^a
TSS	mg/L	Weekly ^b	24-hr composite ^a
TSS	lbs/day	Weekly ^b	Calculated ^g
Fluoride (F) - Intake	mg/L	Weekly ^b	24-hr composite ^a
F	mg/L	Weekly ^b	24-hr composite ^a
F	lbs/day	Weekly ^b	Calculated ^g
Aluminum (Al)	mg/L	Weekly ^b	24-hr composite ^a
Al	lbs/day	Weekly ^b	Calculated ^g
Oil & Grease (O&G)	mg/L	Monthly ^d	Grab ^c
O&G	lbs/day	Weekly ^b	Calculated ^g
Free Cyanide	mg/L	Annually	Grab ^c
Benzo(a)pyrene	µg/L	Annually	24-hr composite ^a
pH	SU	Continuous ^e	Metered/Recorded
Flow	Million gallons/day (mgd)	Continuous ^e	Metered/Recorded
Temperature	Degrees centigrade (°C)	Continuous ^e	Metered/Recorded
Total Rainfall	Inches	Daily ^f	Recorded

Table 20: Sanitary Treatment Plant Influent and Effluent – 00SC

Parameter	Units & Speciation	Sampling Frequency During Temporary Curtailment	Sample Type
BOD ₅ - Influent	mg/L	Weekly ^b	24-hr composite ^a
BOD ₅	mg/L	Weekly ^b	24-hr composite ^a
BOD ₅	lbs/day	Weekly ^b	Calculated ^g
TSS - Influent	mg/L	Weekly ^b	24-hr composite ^a
TSS	mg/L	Weekly ^b	24-hr composite ^a
TSS	lbs/day	Weekly ^b	Calculated ^g
Fecal Coliform	cfu# /100 ml	Weekly ^b	Grab ^c
UV Tubes Operating	# of tubes	Weekly ^b	Visual inspection
Total Residual Chlorine	ppm	Daily ^f	Grab ^c
pH	SU	Continuous ^e	Metered/Recorded
Flow	MGD	Continuous ^e	Metered/Recorded

Table 21: Footnotes for Tables 16 and 17

Footnote	Information
a	24-hour composite means a series of individual samples collected over a 24-hour period into a single container and analyzed as one sample.
b	Once per week.
c	An individual sample collected over a fifteen (15) minute, or less, period.
d	Once every calendar month.
e	Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The Permittee must collect grab samples every four hours during normal business hours when continuous monitoring is not possible.
f	Once per day. For total chlorine residual, once per day when the chlorination system is operating.
g	Calculated means figured concurrently with the respective sample, using the following formula: Concentration (in mg/L) X Flow (in MGD) X Conversion Factor (8.34) = lbs/day

The following monitoring requirements may be suspended during temporary curtailment:

- Ingot Casthouse Effluent - INCE, Table 8
- Divert to diversion pond – DIPH, Table 10
- Priority pollutant testing of final effluent (001C) in Table 6
- Priority pollutant testing of the Ingot Casthouse effluent in Table 8

These monitoring requirements must revert back to the respective monitoring frequencies in S2.A upon the facility restart.

S2.C. 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 monitoring requirements specified in this permit must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136 (or as applicable in 40 CFR subchapters N [Parts 400–471] or O [Parts 501-503]) unless otherwise specified in this permit. Ecology may only specify alternative methods for parameters without limits and for those parameters without an EPA approved test method in 40 CFR Part 136.

S2.D. 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. Calibrate micro-recording temperature devices, known as thermistors, using protocols from Ecology's Quality Assurance Project Plan Development Tool (*Standard Operating Procedures for Continuous Temperature Monitoring of Freshwater Rivers and Streams Version 1.0 10/26/2011*). This document is available online at:
<https://fortress.wa.gov/ecy/publications/documents/1803205.pdf>
Calibration as specified in this document is not required if the Permittee uses recording devices certified by the manufacturer.
5. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
6. Establish a calibration frequency for each device or instrument in the O&M manual that conforms to the frequency recommended by the manufacturer.
7. Calibrate flow-monitoring devices at a minimum frequency of at least one calibration per year.
8. Maintain calibration records for at least three years.

S2.E. 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. The Permittee must obtain accreditation for conductivity and pH if it must receive accreditation or registration for other parameters.

S2.F. 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.A. 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: <http://ecyapwq/wqwebportal/>

2. Ensure that DMRs are electronically submitted no later than the dates specified below, unless otherwise specified in this permit.
3. Submit DMRs for parameters with the monitoring frequencies specified in S2.A. (monthly, quarterly, annual, etc.) at the reporting schedule identified below. The Permittee must:
 - a. Submit **monthly** DMRs by the 15th day of the following month.
 - b. Submit **quarterly DMRs**, unless otherwise specified in the permit, by the 15th 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 **April 15, 2022** for the quarter beginning on 1/1/2022.
 - c. Submit **single sample/annual DMRs**, unless otherwise specified in the permit, by January 15 for the previous calendar year. The annual sampling period is the calendar year.
 - d. Submit **semiannual DMRs**, unless otherwise specified in the permit, by July 15 and January 15 of each year. Semiannual sampling periods are January through June, and July through December.
 - e. Submit permit renewal application monitoring data in WQWebDMR as required in Special Condition S2.A. by **November 1, 2025**.

4. 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.
5. 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.
6. Report single analytical values between the detection level (DL) and the quantitation level (QL) by entering the estimated value, the code for estimated value/below quantitation limit (j) and any additional information in the comments. Submit a copy of the laboratory report as an attachment using WQWebDMR.
7. 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.
8. 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 detection value and the quantitation value for the sample analysis.
 - 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.
9. 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.

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
Industrial Section
PO Box 47600
Olympia, WA 98504-7600

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.

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:

- Failures of the disinfection system which result in discharges of untreated water.
- Collection system overflows discharging to a water body used as a source of drinking water.
- Plant bypasses discharging to a waterbody used as a source of drinking water.

Central Regional Office
Department of Health, Drinking Water Program
509-575-2490
800-521-0323 (business hours)
877-481-4901 (after business hours)

b. Twenty-four-hour reporting

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at the telephone number listed above and to the Ecology Industrial Section permit manager, within 24 hours from the time the Permittee becomes aware of any of the following circumstances:

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 any 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 (See G.15, "Upset").
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. 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 of the permit requires the Permittee to operate backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this permit.

The Permittee must schedule any facility maintenance, which might require interruption of wastewater treatment and degrade effluent quality, during non-critical water quality periods and carry this maintenance out according to the approved O&M manual or as otherwise approved by Ecology.

S4.A. Operations and maintenance (O&M) manual

a. O&M manual submittal and requirements

The Permittee must:

1. Review the O&M Manual at least annually and confirm this review by letter to Ecology by January 31st of each year, beginning **January 31, 2022**.
2. Submit to Ecology for review substantial changes or updates to the O&M Manual whenever it incorporates them into the manual. The Permittee must submit the updated O&M Manual to Ecology through the Water Quality Permitting Portal – Permit Submittals application.
3. Keep the approved O&M Manual at the permitted facility.
4. 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. Emergency procedures for plant shutdown and cleanup in the event of a wastewater system upset or failure.
2. A review of system components which if failed could pollute surface water or could impact human health. Provide a procedure for a routine schedule of checking the function of these components.
3. Wastewater system maintenance procedures that contribute to the generation of process wastewater.

4. 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).
5. Wastewater sampling protocols and procedures for compliance with the sampling and reporting requirements in the wastewater discharge permit.
6. Minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit.
7. Treatment plant process control monitoring schedule.

c. Treatment system operating plan

The Permittee must summarize the following information in the initial chapter of the O&M Manual entitled the "Treatment System Operating Plan." For the purposes of this permit, a Treatment System Operating Plan (TSOP) is a concise summary of specifically defined elements of the O&M Manual.

The Permittee must submit an updated Treatment System Operating Plan to Ecology by **November 1, 2025** (with the application for renewal). The Permittee must update and submit this plan, as necessary, to include requirements for any major modifications of the treatment system.

The TSOP must not conflict with the O&M Manual and must include the following information:

1. A baseline operating condition, which describes the operating parameters and procedures, used to meet the effluent limits of S1 at the production levels used in developing these limits.
2. In the event of production rates, which are below the baseline levels used to establish these limits, the plan must describe the operating procedures and conditions needed to maintain design treatment efficiency. The monitoring and reporting must be described in the plan.
3. In the event of an upset, due to plant maintenance activities, severe stormwater events, start ups or shut downs, or other causes, the plan must describe the operating procedures and conditions employed to mitigate the upset. The monitoring and reporting must be described in the plan.
4. A description of any regularly scheduled maintenance or repair activities at the facility which would affect the volume or character of the wastes discharged to the wastewater treatment system and a plan for monitoring and treating/controlling the discharge of maintenance-related materials (such as cleaners, degreasers, solvents, etc.).

S4.B. Bypass procedures

A bypass is the intentional diversion of waste streams from any portion of a treatment facility.

This permit prohibits all bypasses except when the bypass is for essential maintenance, as authorized in special condition S4.B.1, or is approved by Ecology as an anticipated bypass following the procedures in S4.B.2.

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

This permit allows bypasses for essential maintenance of the treatment system when necessary to ensure efficient operation of the system. The Permittee may bypass the treatment system for essential maintenance only if doing so does not cause violations of effluent limits.

The Permittee is not required to notify Ecology when bypassing for essential maintenance. However, the Permittee must comply with the monitoring requirements specified in special condition S2.B.

2. Anticipated bypasses for non-essential maintenance

Ecology may approve an anticipated bypass under the conditions listed below. This permit prohibits any anticipated bypass that is not approved through the following process.

- a. If a bypass is for non-essential maintenance, the Permittee must notify Ecology, if possible, at least ten (10) days before the planned date of bypass. The notice must contain:
 - A description of the bypass and the reason the bypass is necessary.
 - An analysis of all known alternatives which would eliminate, reduce, or mitigate the potential impacts from the proposed bypass.
 - A cost-effectiveness analysis of alternatives.
 - 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 recurrence 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 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 determine if the Permittee has met the conditions of special condition S4.B.2 a and b and consider the following prior to issuing a determination letter, an administrative order, or a permit modification as appropriate for an anticipated bypass:
- If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.
 - If the 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. Severe property damage does not mean economic loss caused by delays in production.
 - If 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 which occurred during normal periods of equipment downtime or preventative maintenance.
 - Transport of untreated wastes to another treatment facility.

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.

S5.C. Solid waste control plan

The Permittee must submit all proposed revisions or modifications to the solid waste control plan to Ecology for review and approval at least 30 days prior to implementation. The Permittee must comply with the approved solid waste control plan and any modifications once approved. The Permittee must submit an update of the solid waste control plan by November 1, 2025.

S6. Application for Permit Renewal or Modification for Facility Changes

The Permittee must submit an application for renewal of this permit by November 1, 2025.

The Permittee must also submit a new application or addendum at least one hundred eighty (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.

S7. Wastewater Characterization/AKART Study and Engineering Report

The Permittee must conduct a study to determine the characteristics of five wastewater streams at the smelter, including: non-contact cooling water, boiler blowdown, oily wastewater, stormwater runoff, and other miscellaneous wastewater.

The Permittee must determine if the current treatment method for each wastewater stream meets all known, available, and reasonable methods of prevention, control, treatment, and best management practices (AKART). The Permittee must submit an engineering report detailing the findings of the wastewater characterization study and AKART analysis.

S7.A. Wastewater Characterization Study

The Permittee must submit a sampling and analysis plan to Ecology for review and approval through the Water Quality Permitting Portal – Permit Submittals application **within 12 months of the facility restart**. The Permittee must submit a paper copy to Ecology as required by Permit Condition S3.A.

The Permittee must conduct the wastewater characterization study within 90 days of Ecology's approval of the plan.

1. The study plan must include:
 - a description of each wastewater stream – what process or activity contributes to the discharge, raw materials used in the process/activity, pollutants in the wastewater stream, and estimated flow or volume of the wastewater stream
 - a description of the existing method of treatment for each wastewater stream, including design criteria
 - a minimum of 6 grab samples per wastewater stream collected at least 2 weeks apart
 - a plan for monitoring and recording flow for each wastewater stream at the time of sampling
2. Samples must be collected during normal operations (in a relatively steady state, i.e. no peak flows, upsets, maintenance turnarounds, or high intensity rain events). Each sample must be analyzed for cyanide, TSS, fluoride, aluminum, oil & grease, and pH.
3. For wastewater streams that are treated, samples must be collected from each wastewater stream prior to and after any existing treatment and prior to commingling with other wastewater streams. For wastewater streams that are not treated, samples must be collected prior to commingling with other wastewater streams.

4. Sampling points must be identified on a flow diagram. Provide reasoning for the selection of the sampling locations.
5. Samples must be collected and analyzed in accordance with the requirements specified in Appendix A and Special Condition S2.C.

S7.B. AKART Analysis

Once the pollutants and volume of the individual wastewater streams have been identified, the Permittee must research and evaluate known and available treatment technologies that can be used to treat the pollutants.

The Permittee must conduct a literature search, consult vendor information, and consult Ecology and EPA guidance including Ecology's *2019 Stormwater Management Manual for Eastern Washington* and EPA's Wastewater Treatability Database. The Permittee must consider treatment technology for discharges from similar manufacturing facilities as well as other discharges with pollutants similar in nature and concentration.

The Permittee must evaluate the treatment options for each wastewater stream for technical feasibility, effectiveness in removing/reducing pollutants, and cost.

S7.C. Engineering Report

The Permittee must prepare an engineering report in accordance with chapter 173-240 WAC. The engineering report must be prepared by a licensed professional engineer trained and experienced in wastewater treatment.

In addition to the electronic copy required by Special condition S3.A, the Permittee must submit a paper copy of the report to Ecology for review and approval **within 180 days of completing the wastewater characterization study**.

The engineering report must include:

1. The results of the wastewater characterization study.
2. An engineering analysis of the existing treatment and removal efficiencies for each wastewater stream based on the results of the wastewater characterization study.
3. The results of the AKART analysis of other treatment options for each wastewater stream.
4. Design criteria for all current treatment methods including the sanitary wastewater treatment system, diversion ponds, and infiltration basins.
5. Evidence to support a correlation between pH and rainfall events.

If the existing treatment technology for a wastewater stream does not meet AKART, the engineering report must include proposed changes and design criteria to upgrade the treatment system for that wastewater stream. The Permittee must make all necessary changes to meet AKART per the approved engineering report within two (2) years of receiving Ecology's written approval of the report. The Permittee shall submit an **interim** progress report to Ecology at the end of one year describing the status of the upgrades.

The Permittee must update the O&M manual and TSOP required by Condition S4.A. to include the upgrades made to the treatment system(s) to achieve AKART, within 90 days of completing the changes.

S8. 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.

S9. Spill Control Plan

S9.A. Spill control plan submittals and requirements

The Permittee must:

1. Submit to Ecology an update to the existing spill control plan by November 1, 2025.
2. Review the plan at least annually and update the spill plan as needed.
3. Send changes to the plan to Ecology.
4. Follow the plan and any supplements throughout the term of the permit.

S9.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.

S10. Stormwater Pollution Prevention Plan

The Permittee must maintain and follow the Stormwater Pollution Plan (SWPPP) for the permitted facility. The Pollution Prevention Plan must specify the Standard Operating Procedures (SOPs), Best Management Practices (BMPs), and work practices necessary to:

- Provide all known, available, and reasonable methods of prevention, control, and treatment (AKART) of stormwater pollution.
- Ensure that stormwater discharges from the site do not cause or contribute to a violation of the Water Quality Standards.
- Comply with applicable federal technology-based treatment requirements under 40 CFR 125.3.
- Be consistent with the *2019 Stormwater Management Manual for Eastern Washington* or later editions or provide an equivalent level of pollution prevention approved by Ecology. The SWPPP must document that BMPs selected are demonstrably equivalent to practices contained in stormwater technical manuals approved by Ecology.

S10.A. SWPPP Update

The Permittee must update the SWPPP in accordance with the *Guidance Manual for Preparing/Updating a Stormwater Prevention Plan for Industrial Facilities* (Ecology Publication No. 04-10-030). The Permittee must submit the updated SWPPP to Ecology for review and approval through the Water Quality Permitting Portal – Permit Submittals application within **18 months of the facility restart**. The Permittee must implement and comply with the approved SWPPP update and any approved modifications to the plan and abide by the timeframes identified in the plan.

The updated plan must:

- Identify any new sources of pollutants to stormwater.
- Include the following areas of the plant to the list of potential pollutant sources: scrap yard, waste pending for shipping area, employee and visitor parking areas, SPL staging area, roadways and walkways, potline roof run-off, and rail line spills.
- Include the BMPs and other action items identified in S10.E.
- Include the dates (month/year) when BMPs were implemented or action items were completed. The update must include a schedule for BMPs or action items not yet implemented or completed.

S10.B. SWPPP Modifications

The Permittee must modify the SWPPP if the Permittee or Ecology determine during inspections or investigations that existing BMPs are, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The Permittee must modify the plan as necessary to include additional or modified BMPs designed to correct problems identified.

The Permittee must modify the SWPPP whenever there is a change in design, construction, operation or maintenance at the facility that significantly changes the nature of pollutants discharged in stormwater from the facility or significantly increases the quantity of pollutants discharged, or which causes the SWPPP to be less effective in controlling pollutants.

Whenever the description of potential pollutant sources or the pollution prevention measures and controls identified in the SWPPP are inadequate, the SWPPP must be modified, as appropriate, within sixty (60) days of such determination. The proposed modifications to the SWPPP must be submitted to Ecology at least thirty (30) days in advance of implementing the proposed changes in the plan unless Ecology approves immediate implementation.

The Permittee must provide for implementation of any modifications to the SWPPP in a timely manner.

The Permittee may incorporate applicable portions of plans prepared for other purposes. Plans or portions of plans incorporated into an SWPPP become enforceable requirements of this permit.

S10.C. SWPPP Inspections

The Permittee shall conduct two inspections per year - one during the wet season (October 1 – April 30) and the other during the dry season (May 1 – September 30). The Permittee must submit the inspection reports to Ecology by (the end of every year – **December 31, 2022**)

The Permittee must conduct the wet season inspection during a rainfall event. The inspection must include observations of the presence of any floating materials, suspended solids, oil and grease, discolorations, turbidity, odor, etc. in stormwater runoff throughout the facility that could contribute to a discharge off-site.

The dry season inspection must determine the presence of unpermitted non-stormwater discharges such as sanitary wastewater, non-contact cooling water, process wastewater, and drainage from to the stormwater drainage system. If an unpermitted, non-stormwater discharge is discovered, the Permittee must immediately notify Ecology.

Inspections must be conducted by personnel who are knowledgeable and trained in the application of BMPs and stormwater pollution prevention activities at the facility. Personnel must be trained in the requirements of the SWPPP and be able to verify that: the description of potential pollutant sources required under this permit is accurate, the site map required in the SWPPP has been updated or otherwise modified to reflect current conditions, and the controls to reduce pollutants in stormwater runoff from the facility are being implemented and are adequate.

S10.D. SWPPP Evaluation

Every year, the Permittee must evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly implemented in accordance with the terms of the permit or whether additional controls are needed. A record must be maintained summarizing the results of the SWPPP inspections and must include a certification, in accordance with Condition G1.4. of this permit, that the facility is in compliance with the plan and in compliance with this permit. The record must identify any incidents of noncompliance.

S10.E. SWPPP Best Management Practices During Normal Operations

The Permittee must conduct a monthly inspection to ensure that the Best Management Practices (BMPs) identified below are being followed. Records of inspections and any corrective actions taken must be kept on file and available for review by Ecology.

1. Clean up spills of alumina ore in high impact areas (as defined in the SWPPP) **monthly** or more frequently if regular housekeeping and/or stormwater inspections reveal significant ore buildup. Also perform cleanup measures following equipment breakdown or malfunctions that result in ore accumulation in the area.
2. Protect all storm drain inlets located in high impact areas (as defined in the SWPPP) with silt screens or catch basin filters. Inspect the inlet screens or filters **weekly** during the wet season and **monthly** during the dry season and perform any corrective action or maintenance as needed to ensure that solids collection is functioning properly. The Permittee may propose alternative measures to prevent alumina and fine carbon material from entering the storm drain inlets. Alternative measures must be reviewed and approved by Ecology before being implemented.
3. Develop and follow procedures to prevent the fuel spillage or dribble during the loading at the Diesel Fueling Area.

4. Inspect the uncovered scrap steel and unused equipment storage **monthly** for materials with the potential to adversely impact stormwater. Document actions taken to mitigate potential impacts if found.
5. Develop and follow BMPs to address stormwater runoff from the boneyard and alumina ore unloading areas.

S10.F. SWPPP Best Management Practices During Temporary Curtailment

The Permittee must conduct the monthly or quarterly inspections below to ensure that the Best Management Practices (BMPs) identified below are being followed. Records of inspections and any corrective actions taken must be kept on file and available for review by Ecology.

1. Protect all storm drain inlets located in high impact areas (as defined in the SWPPP) with silt screens or catch basin filters. Inspect the inlet screens or filters **monthly** during the wet season and **quarterly** during the dry season and perform any corrective action or maintenance as needed to ensure that solids collection is functioning properly. The Permittee may propose alternative measures to prevent alumina and fine carbon material from entering the storm drain inlets. Alternative measures must be reviewed and approved by Ecology before being implemented.
2. Inspect the uncovered scrap steel and unused equipment storage **monthly** for materials with the potential to adversely impact stormwater. Document actions taken to mitigate potential impacts if found.

S11. Sediment Monitoring

S11.A. Sediment sampling and analysis plan

The Permittee must submit to Ecology for review and approval a revised sediment sampling and analysis plan with **redlines** addressing Ecology's comments provided in March 2016 within 18 months of the permit effective date.

The purpose of the plan is to characterize sediment (the nature and extent of chemical contamination and biological toxicity) quality in the vicinity of the Permittee's discharge location, Outfall 001. The Permittee must follow the guidance provided in the *Sediment Cleanup User's Manual, Appendix A: Sampling Guidance for NPDES Permits under the Sediment Management Standards* (Ecology, 2017) or the latest edition.

S11.B. Sediment data report

Following Ecology approval of the sediment sampling and analysis plan, the Permittee must collect sediments between August 15th and September 30th. The Permittee must submit to Ecology a sediment data report containing the results of the sediment sampling and analysis within 90 days of receiving final test results. The sediment data report must conform to the approved sediment sampling and analysis plan.

In addition, the Permittee must follow the guidance provided in the *Sediment Cleanup User's Manual, Appendix A: Sampling Guidance for NPDES Permits under the Sediment Management Standards* (Ecology, 2017) or the latest edition. The report must document when the data was successfully loaded into EIM as required below.

In addition to a sediment data report, submit the sediment chemical and biological data to Ecology's EIM database (<https://apps.ecology.wa.gov/eim/search/default.aspx>). Data must be submitted to EIM according to the instructions on the EIM website.

The data submittal portion of the EIM website (<https://ecology.wa.gov/Research-Data/Data-resources/Environmental-Information-Management-database/EIM-submit-data>) provides information and help on formats and requirements for submitting tabular data.

In addition to the EIM data submittal, Ecology's MyEIM tools (<https://ecology.wa.gov/Research-Data/Data-resources/Environmental-Information-Management-database/Using-MyEIM>) must be used to confirm that the submitted data was accurately entered into EIM. Any differences between the MyEIM analytical results and sediment data report must be identified and explained.

S12. Outfall Evaluation

The Permittee must inspect the submerged portion of the outfall line and diffuser to document its integrity and continued function during the 4th year of the permit term.

If conditions allow for a photographic verification, the Permittee must include such verification in the report.

Within **90 days** of conducting the evaluation, 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 inspector must at minimum:

- Assess the physical condition of the outfall pipe, diffuser, and associated couplings.
- Determine the extent of sediment accumulation in the vicinity of the diffuser.
- Ensure diffuser ports are free of obstructions and are allowing uniform flow.
- Confirm physical location and depth (at MLLW) of the diffuser section of the outfall.
- Assess physical condition of the submarine line.
- Assess physical condition of anchors used to secure the submarine line.

S13. Certified Operator

The sanitary wastewater treatment plant permitted facility must be operated by an operator certified by the state of Washington for at least a Class II plant (per Chapter 173-230 WAC).

This operator must be in responsible charge of the day-to-day operation of the wastewater treatment plant. An operator certified for at least a Class I plant must be in charge during all regularly scheduled shifts.

S14. Acute Toxicity

S14.A. Effluent characterization

The Permittee must:

1. Conduct quarterly acute toxicity testing on the final effluent for one year starting *within 12 months of the facility restart*.

Quarters means January through March, April through June, July through September, and October through December.

2. Submit a quarterly written report to Ecology for one year within 45 days of sampling. Each respective quarterly report is due on April 30th, July 30th, October 30th, and January 30th of each year. Further instructions on testing conditions and test report content are in Section G below.
3. Use a dilution series consisting of a minimum of five concentrations and a control. The five concentrations should include the ACEC of 3% effluent.
4. Conduct the following two acute toxicity tests on each sample:

Table 22: Acute Toxicity Testing

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	<i>Pimephales promelas</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

5. The effluent limit for acute toxicity listed in Section B below applies if after one year of effluent characterization:
 - The median survival of any species in 100% effluent is below 80%.
 - Any one test of any species exhibits less than 65% survival in 100% effluent.

If the limit applies, then the Permittee must immediately follow the instructions in Sections B, C, D, E, and G. **If the limit does not apply**, then the Permittee must follow the instructions in Sections F and G.

S14.B. Effluent limit for acute toxicity

The effluent limit for acute toxicity is:

No acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC).

The ACEC means the maximum concentration of effluent during critical conditions at the boundary of the acute mixing zone, defined in Section S1.D of this permit. The ACEC equals 3% effluent.

S14.C. Compliance with the effluent limit for acute toxicity

Compliance with the effluent limit for acute toxicity means the results of the testing specified in Section D show no statistically significant difference in survival between the control and the ACEC.

If the test results show a statistically significant difference in survival between the control and the ACEC, and Ecology has not determined the test result to be anomalous under Section E, and the test is otherwise valid, the result is a violation of the effluent limit for acute toxicity. The Permittee must immediately conduct the additional testing described in Section E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is less than 10%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

S14.D. Compliance testing for acute toxicity

The Permittee must:

1. Perform the acute toxicity tests with 100% effluent, the ACEC, and a control, or with a full dilution series.
2. Conduct quarterly acute toxicity testing on the final effluent for the remaining of the permit term if characterization determines that the effluent limit for acute toxicity applies. Testing must begin the quarter following the receipt of the final wastewater characterization sampling results. Quarters means January through March, April through June, July through September, and October through December.
3. Submit a quarterly written report to Ecology within 45 days of sampling.

Each respective quarterly report is due on April 30th, July 30th, October 30th, and January 30th of each year. Further instructions on testing conditions and test report content are in Section G below.

4. The Permittee must perform compliance tests using each of the species and protocols listed below on a rotating basis:

Table 23: Acute Toxicity Rotating Compliance Tests

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	<i>Pimephales promelas</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

S14.E. Response to noncompliance with the effluent limit for acute toxicity

If a toxicity test conducted under Section D determines a statistically significant difference in response between the ACEC and the control, using the statistical test described in Section C, the Permittee must begin additional testing within one week from the time of receiving the test results.

The Permittee must:

1. Conduct one additional test each week for four consecutive weeks, using the same test and species as the failed compliance test.
2. Test at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the ACEC. The results of the test at the ACEC will determine compliance with the effluent limit for acute toxicity as described in Section C.
3. Return to the original monitoring frequency in Section D after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Section D indicates noncompliance with the acute toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional sample fails to comply with the effluent limit for acute toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result for the purpose of determining compliance with the acute toxicity limit.

If all of the additional testing in S14.E.1 complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- Operating records
- Monitoring results
- Inspection records
- Spill reports
- Weather records
- Production records
- Raw material purchases
- Pretreatment records, etc.

If the additional testing in this section shows another violation of the acute toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within sixty (60) days after the sample date (WAC 173-205-100(2)).

S14.F. 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:

Table 24 Acute Toxicity: Testing When no Permit Limit is Specified

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	<i>Pimephales promelas</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

4. Submit the results to Ecology by November 1, 2025.

S14.G. Sampling and reporting requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain toxicity data, bench sheets, and reference toxicant results for test methods. In addition, the Permittee must submit toxicity test data in electronic format (CETIS export file preferred) for entry into Ecology’s database.
2. The Permittee must collect 24-hour composite effluent samples for toxicity testing.

The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Subsection C and the Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.

5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Section A or pristine natural water of sufficient quality for good control performance.
6. The Permittee may sample receiving water at the same time as the effluent and instruct the lab to measure the hardness of both and increase the hardness of the effluent sample to match the hardness of the receiving water sample prior to beginning the toxicity test. Otherwise, the Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.
7. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control.

The series of concentrations must include the acute critical effluent concentration (ACEC). The ACEC equals 3% effluent.
8. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing must comply with the acute statistical power standard of 29% as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

S15. Chronic Toxicity

S15.A. Effluent characterization

The Permittee must:

1. Conduct quarterly chronic toxicity testing on the final effluent for one year starting *within 12 months of facility restart*. Quarters means January through March, April through June, July through September, and October through December.
2. Submit a quarterly written report to Ecology for one year within 45 days of sampling.

Each respective quarterly report is due on April 30th, July 30th, October 30th, and January 30th of each year. Further instructions on testing conditions and test.

3. Conduct chronic toxicity testing during effluent characterization on a series of at least five concentrations of effluent and a control.

This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 3% effluent. The series of dilutions should also contain the CCEC of 1% effluent.

4. Conduct the following two chronic toxicity tests on each sample:

Table 25 Chronic Toxicity: Sampling Specifications

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	<i>Pimephales promelas</i>	EPA-821-R-02-013
Water flea survival and reproduction	<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013

5. The effluent limit for chronic toxicity listed in Section B below applies if after one year of effluent characterization any test shows a significant difference between the control and the ACEC at the 0.05 level of significance using hypothesis testing (Appendix H, EPA/600/4-89/001).
 - **If the limit applies**, then the Permittee must immediately follow the instructions in Sections B, C, D, E, and G. **If the limit does not apply**, then the Permittee must follow the instructions in Sections F and G.

S15.B. Effluent limit for chronic toxicity

The effluent limit for chronic toxicity is:

No toxicity detected in a test concentration representing the chronic critical effluent concentration (CCEC).

The CCEC means the maximum concentration of effluent during critical conditions at the boundary of the mixing zone, defined in Section S1.D of this permit. The CCEC equals 1% effluent.

S15.C. Compliance with the effluent limit for chronic toxicity

Compliance with the effluent limit for chronic toxicity means the results of the testing specified in Subsection D. show no statistically significant difference in response between the control and the CCEC.

If the test results show a statistically significant difference in survival between the control and the CCEC, and, Ecology has not determined the test result to be anomalous under Section E, and the test is otherwise valid, the result is a violation of the effluent limit for chronic toxicity. The Permittee must immediately conduct the additional testing described in Section E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in response between the control and the CCEC is less than 20%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

Ecology will reevaluate the need for the chronic toxicity limit in future permits. Therefore, the Permittee must also conduct this same hypothesis test (Appendix H, EPA/600/4-89/001) to determine whether a statistically significant difference in response exists between the acute critical effluent concentration (ACEC) and the control.

S15.D. Compliance testing for chronic toxicity

The Permittee must:

1. Perform the chronic toxicity tests using the CCEC, the ACEC, and a control, or with a full dilution series.
1. Conduct quarterly chronic toxicity testing on the final effluent for the remaining of the permit term if characterization determines that the effluent limit for chronic toxicity applies. Testing must begin 60 days after the final characterization report is due. Quarters means January through March, April through June, July through September, and October through December. If no discharge occurs during the required month, the Permittee must notify Ecology by the end of the month and conduct sampling on the next representative discharge that occurs in the following month.
2. Submit a quarterly written report to Ecology within 45 days of sampling. Each respective quarterly report is due on April 30th, July 30th, October 30th, and January 30th of each year. Further instructions on testing conditions and test report content are in Section G below.
3. Perform compliance tests using the following species on a rotating basis and the most recent version of the following protocols:

Table 26 Chronic Toxicity: Rotating Compliance Testing

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	<i>Pimephales promelas</i>	EPA-821-R-02-013
Water flea survival and reproduction	<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013

S15.E. Response to noncompliance with the effluent limit for chronic toxicity

If a toxicity test conducted under Subsection D determines a statistically significant difference in response between the CCEC and the control using the statistical test described in Subsection C, the Permittee must begin additional testing within one week from the time of receiving the test results.

The Permittee must:

1. Conduct additional testing each month for three consecutive months using the same test and species as the failed compliance test.
2. Use a series of at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the CCEC. The results of the test at the CCEC will determine compliance with the effluent limit for chronic toxicity as described in Subsection B.
3. Return to the original monitoring frequency in Subsection D after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Subsection D indicates noncompliance with the chronic toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional sample fails to comply with the effluent limit for chronic toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result for the purpose of determining compliance with the chronic toxicity limit.

If all of the additional testing required in S15.E.1 complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- Operating records
- Monitoring results
- Inspection records
- Spill reports
- Weather records
- Production records
- Raw material purchases
- Pretreatment records, etc.

If the additional testing required by this section shows another violation of the chronic toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within 60 days after the sample date (WAC 173-205-100(2)).

S15.F. Testing when there is no permit limit for chronic toxicity

The Permittee must:

1. Conduct chronic toxicity testing on final effluent once in the last winter and once in the last summer prior to submission of the application for permit renewal.
2. Conduct chronic toxicity testing on a series of at least five concentrations of effluent and a control.

This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 3% effluent. The series of dilutions should also contain the CCEC of 1% effluent.

3. Compare the ACEC to the control using hypothesis testing at the 0.05 level of significance as described in Appendix H, EPA/600/4-89/001.
4. Submit the results to Ecology by November 1, 2025.
5. Perform chronic toxicity tests with all of the following species and the most recent version of the following protocols:

Table 27 Chronic Toxicity: Testing When No Permit Limit is Specified

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	<i>Pimephales promelas</i>	EPA-821-R-02-013
Water flea survival and reproduction	<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013

S15.G. Sampling and reporting requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.

Reports must contain toxicity data, bench sheets, and reference toxicant results for test methods. In addition, the Permittee must submit toxicity test data in electronic format (CETIS export file preferred) for entry into Ecology’s database.

2. The Permittee must collect 24-hour composite effluent samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Section C. and the Ecology Publication no. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.
5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Subsection C. or pristine natural water of sufficient quality for good control performance.
6. The Permittee may sample receiving water at the same time as the effluent and instruct the lab to measure the hardness of both and increase the hardness of the effluent sample to match the hardness of the receiving water sample prior to beginning the toxicity test. Otherwise, the Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.

7. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the CCEC and the ACEC. The CCEC and the ACEC may either substitute for the effluent concentrations that are closest to them in the dilution series or be extra effluent concentrations. The CCEC equals 1% effluent. The ACEC equals 3% effluent.
8. All whole effluent toxicity tests that involve hypothesis testing must comply with the chronic statistical power standard of 39% as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

S16. Cooling Water Intake Structure (CWIS)

Pursuant to Section 316(b) of the Clean Water Act, the Permittee must comply with the following requirements to minimize adverse impact by the facility's cooling water intake structure (CWIS).

S16.A. Operations and Maintenance

The Permittee must, at all times, properly operate and maintain the CWIS including any existing technologies currently used to minimize impingement and entrainment. Report any significant impingement or entrainment events to Ecology within 24 hours consistent with the requirements in Permit Condition S3.F.b. The Permittee must notify Ecology 60 days prior to any changes, which change the design through-screen velocity or location of the CWIS. The permittee must perform visual inspections at least weekly to ensure that technologies operated to minimize impingement and entrainment are operated to function as designed. Records of weekly inspections must be made available to Ecology upon request.

1. O&M manual submittal and requirements
The Permittee must:
 - a. Prepare an O&M Manual for the CWIS by November 1, 2022.
 - b. Make the O&M Manual available for review by Ecology as requested.
 - c. Keep the O&M Manual at the permitted facility.
 - d. Follow the instructions and procedures of this manual.
2. O&M manual components
The O&M Manual must include, at a minimum:
 - a. The location, design, construction and capacity of the cooling water infrastructure.
 - b. Procedures for cleaning the intake screens to ensure proper operation of the screens.
 - c. Procedures for reporting any significant impingement or entrainment to Ecology, as required above.
 - d. Procedures for notifying Ecology of planned changes of the CWIS which change the design through-screen velocity of location of the CWIS.
 - e. Procedures for performing weekly visual inspections.

S16.B. Annual Certification Statement and Report

The Permittee must submit an annual signed certification statement which shall include one of the following by **January 31, 2022**:

1. If the information contained in the previous year's annual certification is still pertinent (or, if this is the first submission of the annual signed certification statement, if the information contained in the permit application submitted to Ecology is still pertinent), you may simply state as such in the signed certification statement.
2. If you have substantially modified operation of any unit at your facility that impacts cooling water withdrawals or operation of your cooling water intake structures, you must provide a summary of those changes in the report. In addition, you must submit revisions to the information required at 40 CFR 122.21(r) in your **next permit renewal application**.

S16.C. Entrainment Performance Study

Alcoa must meet BTA standards for entrainment. Unlike the impingement standards, the EPA has not promulgated specific compliance options for the entrainment standard.

To meet BTA standards for entrainment under 40 CFR 125.98(f), Alcoa is required to conduct an entrainment performance study for the CWIS that identifies existing entrainment technologies or operational measures, a site specific analysis of their performance in reducing or eliminating entrainment, and information addressing the following four factors:

1. Number and types of organisms entrained
2. Impact of changes in particulate emissions or other pollutants associated with entrainment technologies
3. Land availability
4. Remaining useful plant life

The Permittee must also propose a chosen method of compliance with the entrainment standards. The entrainment performance study report must be submitted to Ecology by November 1, 2025.

S16.D. Endangered Species Act

Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act per 40 CFR 125.98.

General Conditions

G1. Signatory Requirements

1. All applications submitted to Ecology must be signed and certified.
 - a. In the case of corporations, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
 - The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - b. In the case of a partnership, by a general partner.
 - c. In the case of sole proprietorship, by the proprietor.
 - d. In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

Applications for permits for domestic wastewater facilities that are either owned or operated by, or under contract to, a public entity shall be submitted by the public entity.

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 a person described above and submitted to Ecology.
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be 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 satisfying the requirements of paragraph G1.2, above, 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 Inspection and Entry

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

1. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
2. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
3. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
4. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G3. Permit Actions

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon Ecology’s initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

1. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
 - a. Violation of any permit term or condition.
 - b. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
 - c. A material change in quantity or type of waste disposal.
 - d. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination.
 - e. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit.

- f. Nonpayment of fees assessed pursuant to RCW 90.48.465.
- g. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
2. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:
 - a. A material change in the condition of the waters of the state.
 - b. New information not available at the time of permit issuance that would have justified the application of different permit conditions.
 - c. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
 - d. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
 - e. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
 - f. Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
 - g. Incorporation of an approved local pretreatment program into a municipality's permit.
3. The following are causes for modification or alternatively revocation and reissuance:
 - a. When cause exists for termination for reasons listed in 1.a through 1.g of this section, and Ecology determines that modification or revocation and reissuance is appropriate.
 - b. When Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G7) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

G4. Reporting Planned Changes

The Permittee must, as soon as possible, but no later than one hundred eighty (180) days prior to the proposed changes, give notice to Ecology of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in:

1. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b).
2. A significant change in the nature or an increase in quantity of pollutants discharged.
3. A significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited.

Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

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 must be submitted at least one hundred eighty (180) days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities must be constructed and operated in accordance with the approved plans.

G6. Compliance with Other Laws and Statutes

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

G7. Transfer of Permit

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the Permittee must notify the succeeding owner or controller of the existence of this permit by letter, a copy of which must be forwarded to Ecology.

1. Transfers by Modification

Except as provided in paragraph (2) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

2. Automatic Transfers

This permit may be automatically transferred to a new Permittee if:

- a. The Permittee notifies Ecology at least thirty (30) days in advance of the proposed transfer date.
- b. The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.
- c. Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

G8. Reduced Production for Compliance

The Permittee, in order to maintain compliance with its permit, must control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility 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 of 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 final effluent stream for discharge to state waters.

G10. 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.

G11. Other Requirements of 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G12. Additional Monitoring

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G13. Payment of Fees

The Permittee must submit payment of fees associated with this permit as assessed by Ecology.

G14. Penalties for Violating Permit Conditions

Any person who is found guilty of willfully violating the terms and conditions of this permit is deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars (\$10,000) 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 may incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars (\$10,000) 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 deemed to be a separate and distinct violation.

G15. Upset

Definition – “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.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limits if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the Permittee can identify the cause(s) of the upset.
2. The permitted facility was being properly operated at the time of the upset.
3. The Permittee submitted notice of the upset as required in Special Condition S3.F.
4. The Permittee complied with any remedial measures required under S3.F of this permit.

In any enforcement action the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G16. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

G17. Duty to Comply

The Permittee must comply with all conditions of this permit.

Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G18. Toxic Pollutants

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G19. Penalties for Tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two (2) years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

G20. Reporting Requirements Applicable to Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers

The Permittee belonging to the categories of existing manufacturing, commercial, mining, or silviculture must notify Ecology as soon as they know or have reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following “notification levels:”
 - a. One hundred micrograms per liter (100 µg/L).
 - b. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony.
 - c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
 - d. The level established by the Director in accordance with 40 CFR 122.44(f).
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following “notification levels:”
 - a. Five hundred micrograms per liter (500µg/L).
 - b. One milligram per liter (1 mg/L) for antimony.
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
 - d. The level established by the Director in accordance with 40 CFR 122.44(f).

G21. Compliance Schedules

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

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.

Table 28: Conventional Pollutants

Pollutant	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L <i>Unless specified</i>	Quantitation Level (QL)² µg/L <i>Unless specified</i>
Biochemical Oxygen Demand		SM5210-B		2 mg/L
Biochemical Oxygen Demand, Soluble		SM5210-B ³		2 mg/L
Fecal Coliform		SM 9221E,9222	N/A	Specified in method sample aliquot dependent
Oil and Grease (HEM) (Hexane Extractable Material)		1664 A or B	1,400	5,000
pH		SM4500-H ⁺ B	N/A	N/A
Total Suspended Solids		SM2540-D		5 mg/L

Table 29: NonConventional Pollutants

Pollutant	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L <i>Unless specified</i>	Quantitation Level (QL)² µg/L <i>Unless specified</i>
Alkalinity, Total		SM2320-B		5 mg/L as CaCO ₃
Aluminum, Total	7429-90-5	200.8	2.0	10
Ammonia, Total (as N)		SM4500-NH ₃ -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

Pollutant	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L Unless specified	Quantitation Level (QL)² µg/L Unless specified
Chloride		SM4500-Cl B/C/D/E and SM4110 B		Sample and limit dependent
Chlorine, Total Residual		SM4500 Cl G		50.0
Cobalt, Total	7440-48-4	200.8	0.05	0.25
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 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
Molybdenum, Total	7439-98-7	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

Pollutant	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L Unless specified	Quantitation Level (QL)² µg/L Unless specified
NWTPHDx ⁴		Ecology NWTPH Dx	250	250
NWTPHGx ⁵		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)
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 ₄)		SM4110-B		0.2 mg/L
Sulfide (as mg/L S)		SM4500-S ² F/D/G		0.2 mg/L
Sulfite (as mg/L SO ₃)		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

Table 30 Priority Pollutants

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L <i>Unless specified</i>	Quantitation Level (QL) ² µg/L <i>Unless specified</i>
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
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

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L <i>Unless specified</i>	Quantitation Level (QL) ² µg/L <i>Unless specified</i>
Phenols, Total	65		EPA 420.1		50

Table 22: Acid Compounds

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L <i>Unless specified</i>	Quantitation Level (QL) ² µg/L <i>Unless specified</i>
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

Table 31: Volatile Compounds

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL)¹ $\mu\text{g/L}$ <i>Unless specified</i>	Quantitation Level (QL)² $\mu\text{g/L}$ <i>Unless specified</i>
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
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-Dichloroethylene	29	75-35-4	624.1	2.8	8.4
1,2-Dichloropropane	32	78-87-5	624.1	6.0	18.0
1,3-dichloropropene (mixed isomers)	33	542-75-6	624.1	5.0	15.0

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L <i>Unless specified</i>	Quantitation Level (QL) ² µg/L <i>Unless specified</i>
(1,2-dichloropropylene) ⁶					
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

Table 32: Base/Neutral Compounds (Compounds in Bold are Ecology PBTS)

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L <i>Unless specified</i>	Quantitation Level (QL) ² µg/L <i>Unless specified</i>
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

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L <i>Unless specified</i>	Quantitation Level (QL) ² µg/L <i>Unless specified</i>
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) ⁷	74	205-99-2	610/625.1	4.8	14.4
Benzo(j)fluoranthene⁷		205-82-3	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) ⁷	75	207-08-9	610/625.1	2.5	7.5
Benzo(r,s,t)pentaphene		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-chloroisopropyl)ether) ¹⁰	42	108-60-1	625.1	5.7	17.1
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
Dibenzo (a,h)acridine		226-36-8	610M/625M	2.5	10.0
Dibenzo (a,j)acridine		224-42-0	610M/625M	2.5	10.0

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L <i>Unless specified</i>	Quantitation Level (QL) ² µg/L <i>Unless specified</i>
Dibenzo(a-h)anthracene (1,2,5,6-dibenzanthracene)	82	53-70-3	625.1	2.5	7.5
Dibenzo(a,e)pyrene		192-65-4	610M/625M	2.5	10.0
Dibenzo(a,h)pyrene		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
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/625.1	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/625.1	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

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ $\mu\text{g/L}$ <i>Unless specified</i>	Quantitation Level (QL) ² $\mu\text{g/L}$ <i>Unless specified</i>
3-Methyl cholanthrene		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	607/625.1	2.0	4.0
N-Nitrosodi-n-propylamine	63	621-64-7	607/625.1	0.5	1.0
N-Nitrosodiphenylamine	62	86-30-6	625.1	1.0	2.0
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

Table 33: Dioxin

Priority Pollutant	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ $\mu\text{g/L}$ <i>Unless specified</i>	Quantitation Level (QL) ² $\mu\text{g/L}$ <i>Unless specified</i>
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

Table 34: Pesticides/PCBS

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL) ¹ $\mu\text{g/L}$ <i>Unless specified</i>	Quantitation Level (QL) ² $\mu\text{g/L}$ <i>Unless specified</i>
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

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L Unless specified	Quantitation Level (QL)² µg/L Unless specified
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 ⁸	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
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 ⁹	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

Priority Pollutants	PP #	CAS Number (if available)	Recommended Analytical Protocol	Detection (DL)¹ <i>µg/L Unless specified</i>	Quantitation Level (QL)² <i>µg/L</i> <i>Unless specified</i>
PCB-1260	111	11096-82-5	608.3	0.065	0.195
PCB-1016 ⁹	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>
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>
6. **1, 3-dichloroproylene (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)