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**National Pollutant Discharge Elimination System
Waste Discharge Permit No. WA0002950**

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.

Intalco Aluminum Corporation
4050 Mountain View Road
Ferndale, WA 98248

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

<u>Facility Location:</u> 4050 Mountain View Road Ferndale, WA 98248	<u>Receiving Water:</u> Strait of Georgia
<u>Treatment Type:</u> Industrial – Neutralization, chemical precipitation, flocculation, and sedimentation Sanitary – Aeration, sedimentation, and ultraviolet disinfection	<u>SIC and NAICS Code:</u> 3334 and 331313
<u>Industry Type:</u> Primary Aluminum Smelter	<u>Categorical Industry:</u> 40 CFR Part 421 Subpart B



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Summary of Permit Report Submittals

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

Permit Section	Submittal	Frequency	First Submittal Date
S1.D.3	Action Level Exceedance Report	Semi-Annually	July 15, 2015
S3.A	Discharge Monitoring Report	Monthly	March 15, 2015
S3.A	Discharge Monitoring Report	Quarterly	July 15, 2015
S3.A	Discharge Monitoring Report	Semi-Annually	July 15, 2015
S3.A	Discharge Monitoring Report	Annually	January 15, 2016
S3.F	Reporting Permit Violations	As necessary	
S3.G	Other Reporting	As necessary	
S4.A	Operations and Maintenance Manual Update or Review Confirmation Letter	Annually	January 31, 2016
S4.A	Operations and Maintenance Manual Modifications	As Necessary	
S4.A	Treatment System Operating Plan	1/permit cycle	August 1, 2019
S4.B	Reporting Bypasses	As necessary	
S5.C	Solid Waste Control Plan	1/permit cycle	August 1, 2019
S5.C	Modification to Solid Waste Plan	As necessary	
S6	Application for Permit Renewal	1/permit cycle	August 1, 2019
S8	Notice of Non-Routine and Unanticipated Discharges	As necessary	
S9	Spill Control Plan Update	1/permit cycle	February 1, 2016
S9	Spill Control Plan Modification	As necessary	
S10.A	Stormwater Pollution Prevention Plan (SWPPP) Update	1/permit cycle	August 1, 2015
S10.B	SWPPP Modifications	As necessary	
S11	Fugitive Alumina Pollution Prevention Plan	1/permit cycle	August 1, 2016
S12.A	Sediment Data Report	1/permit cycle	
S13	Outfall Evaluation	1/5 years	October 1, 2016
S15.A	Outfall 002 Acute Toxicity: Characterization Written Report	Quarterly for one year	July 30, 2015
S15.D	Outfall 002 Acute Toxicity: Compliance Monitoring Reports	Quarterly, if required	October 30, 2016, if applicable
S15.E	Outfall 002 Acute Toxicity: Response to noncompliance reporting	As necessary	

Permit Section	Submittal	Frequency	First Submittal Date
S15.F	Outfalls 001 and 002 Acute Toxicity Effluent Test Results	Once in last winter prior to application for permit renewal	Within 45 days of sampling and no later than May 1, 2019
S15.F	Outfalls 001 and 002 Acute Toxicity Effluent Test Results	Once in last summer prior to application for permit renewal	Within 45 days of sampling and no later than November 15, 2018
S16.A	Outfalls 001 and 002 Chronic Toxicity: Characterization Report	Quarterly for one year	July 30, 2015
S16.D	Outfalls 001 and 002 Chronic Toxicity: Compliance Monitoring Reports	Quarterly, if required	October 30, 2016, if applicable
S16.E	Outfalls 001 and 002 Chronic Toxicity: Response to noncompliance reporting	As necessary	
S16.F	Outfalls 001 and 002 Chronic Toxicity Effluent Test Results with Permit Renewal Application	Once in last winter prior to application for permit renewal	Within 45 days of sampling and no later than May 1, 2019
S16.F	Outfalls 001 and 002 Chronic Toxicity Effluent Test Results with Permit Renewal Application	Once in last summer prior to application for permit renewal	Within 45 days of sampling and no later than November 15, 2018
S17.A	SEC Efficiency Study Plan	Once	August 1, 2015
S17.B	SEC Efficiency Study Report	Once	Within 120 days of study completion
S18	Anode Contact Cooling Water AKART Evaluation or Documentation of Elimination of the Discharge	Once	February 1, 2016
S19	Ground Water Impact Study Report	Once	Within 120 days of study completion
S20	Outfall 011 and 012 BMP Efficiency Study Plan	Once	August 1, 2016
S20	Outfall 011 and 012 BMP Efficiency Study Report	Once	Within 120 days of study completion
G1	Notice of Change in Authorization	As necessary	
G4	Permit Application for Substantive Changes to the Discharge	As necessary	

Permit Section	Submittal	Frequency	First Submittal Date
G5	Engineering Report for Construction or Modification Activities	As necessary	
G7	Notice of Permit Transfer	As necessary	
G10	Duty to Provide Information	As necessary	
G13	Payment of Fees	As assessed	
G21	Compliance Schedules	As necessary	

Special Conditions

S1. Discharge Limits

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

S1.A. Outfall 001 Process Wastewater and Stormwater Discharges

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 process wastewater, sanitary wastewater, stormwater, and conditionally approved non-stormwater (Non-Routine and Unanticipated Discharges, Condition S8) from Outfall 001 (Latitude 48.840778, Longitude 122.720444) to the Strait of Georgia subject to complying with the following limits and conditions:

Effluent Limits: Outfall 001 Process Wastewater Monitoring Point 101		
Parameter	Average Monthly ^a	Maximum Daily ^b
Total Suspended Solids (TSS)	150 lbs/day	185 lbs/day
Fluoride	58 ^c /68 ^d /68 ^e lbs/day	140 ^c /198 ^d /296 ^e lbs/day
Aluminum	5.9 ^c /9.0 ^d /10.3 ^e lbs/day	13.4 ^c /20 ^d /30 ^e lbs/day
Free Cyanide (WAD)	<12 µg/l	12 µg/l
Benzo(a)Pyrene	0.02 ^c /0.03 ^d /0.045 ^e lbs/day	0.043 ^c /0.065 ^d /0.098 ^e lbs/day
Antimony	1.9 ^c /2.9 ^d /4.3 ^e lbs/day	4.2 ^c /6.4 ^d /9.6 ^e lbs/day
Nickel	0.8 ^c /1.2 ^d /1.9 ^e lbs/day	1.2 ^c /1.8 ^d /2.7 ^e lbs/day
Oil and Grease	5 mg/l	10 mg/l
	Minimum	Maximum
pH ^f	6.0 standard units	9.0 standard units
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.	

Effluent Limits: Outfall 001 Process Wastewater Monitoring Point 101	
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. This does not apply to pH.
c	Tiered limit, applies when monthly aluminum production is less than or equal to 10,305 tons.
d	Tiered limit, applies when monthly aluminum production is greater than 10,305 tons and less than or equal to 15,614 tons.
e	Tiered limit, applies when monthly aluminum production is greater than 15,614 tons.
f	When pH is continuously monitored, 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.

Effluent Limits: Outfall 001 Sanitary Lagoon Discharge Monitoring Point 051		
Parameter	Average Monthly ^a	Average Weekly ^b
Biochemical Oxygen Demand (5-day) (BOD ₅)	45.0 milligrams/liter (mg/L)	65.0 mg/l
	22.4 pounds/day (lbs/day)	32.4 lbs/day
Total Suspended Solids (TSS)	45.0 mg/l	65.0 mg/l
	22.4 lbs/day	32.4 lbs/day
Minimum Number of Operating UV Tubes	N/A	12
Percent Removal from Influent, BOD ₅ and TSS	65% ^{c, d}	N/A
	Minimum	Maximum
pH	6.0 standard units	9.0 standard units

Effluent Limits: Outfall 001 Sanitary Lagoon Discharge Monitoring Point 051		
Parameter	Average Monthly ^a	Average Weekly ^b
Fecal Coliform Bacteria ^e	200 organisms/100 milliliter (mL)	400 organisms/100 mL
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	Average weekly discharge limitation means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.	
c	The monthly average percent removal for BOD and TSS may be reduced to 55% when the monthly average of personnel working onsite is ≤ 400 persons.	
d	Percent removal from the influent means the percent removal efficiency across a treatment plant for a given pollutant parameter, calculated as the monthly average influent concentration (AIC) minus the monthly average effluent concentration (AEC) divided by the AIC multiplied by 100.	
e	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: http://www.ecy.wa.gov/pubs/0410020.pdf .	

Effluent Limits: Outfall 001 Stormwater Monitoring Point D-10		
Parameter	Average Monthly ^{a, d}	Maximum Daily ^b
Total Suspended Solids (TSS)	35 mg/L	75 mg/L
Fluoride	35 mg/L	50 mg/L
Aluminum	10 mg/L	15 mg/L
Benzo(a)Pyrene	N/A	<0.01 mg/L
Oil and Grease	5 mg/L	10 mg/L
	Minimum	Maximum
pH ^c	6.0 standard units	9.0 standard units
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	

Effluent Limits: Outfall 001 Stormwater Monitoring Point D-10	
	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. This does not apply to pH.
c	When pH is continuously monitored, 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.
d	Due to the unpredictable nature of stormwater discharges, during months when only one sample event is possible, the average monthly limit is not applicable for that month.

S1.A.1 Netting Out at Outfall 001 (Monitoring Point 101)

Intalco’s effluent limits for TSS, aluminum, antimony, and nickel are for the net amount of each parameter discharged through Outfall 001. The net amount is calculated as: Net loading rate = the amount of the pollutant discharged through Monitoring Point 101 (process wastewater) in lbs/day – the amount of the pollutant present in the intake water from the PUD in lbs/day.

Netting out is not allowed if it results in environmental degradation of the receiving water. Ecology will notify Intalco in writing if it determines that netting out is resulting in environmental degradation and is no longer allowed.

S1.B. Outfall 002 Stormwater Discharges

Beginning on the effective date of this permit, the Permittee is authorized to discharge stormwater and conditionally approved non-stormwater (Non-Routine and Unanticipated Discharges, Condition S8) from Outfall 002 to the Strait of Georgia during extreme rainfall events when stormwater discharges exceed the hydraulic capacity of Outfall 001 or the diversion structure that carries stormwater to Outfall 001. The discharge shall not violate the following limits:

Effluent Limits: Outfall 002 – Stormwater and Conditionally Approved Non-Stormwater Latitude 48.839444 Longitude 122.715583 Monitoring Point D-10		
Parameter	Average Monthly^{a, b}	Maximum Daily^c
Total Suspended Solids (TSS)	35 mg/L	75 mg/L

Effluent Limits: Outfall 002 – Stormwater and Conditionally Approved Non-Stormwater Latitude 48.839444 Longitude 122.715583 Monitoring Point D-10		
Parameter	Average Monthly ^{a, b}	Maximum Daily ^c
Fluoride	35 mg/L	50 mg/L
Aluminum	10 mg/L	15 mg/L
Benzo(a)Pyrene	N/A	<0.01 mg/L
Oil and Grease ^d	5 mg/L	10 mg/L
	Minimum	Maximum
pH ^e	6.0 standard units	9.0 standard units
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	Due to the unpredictable nature of stormwater discharges, during months when only one sample event is possible, the average monthly limit is not applicable for that month.	
c	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. This does not apply to pH.	
d	Compliance with this oil and grease limit can be demonstrated with the oil and grease sampling required for Outfall 001 Stormwater (Monitoring Point D-10)	
e	When pH is continuously monitored, 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.	

S1.C. Outfall 011 and Outfall 012 Stormwater Discharges

Effluent Limits: Outfalls 011 and 012 – Stormwater Outfall 011 – Latitude 48.842500 Longitude 122.714722 Outfall 012 - Latitude: 48.840278 Longitude: 122.714722
The Permittee is authorized to discharge stormwater from Outfalls 011 and Outfall 012. There are currently no permit limits or action levels for these outfalls. See Special Condition S20 – Outfall 011 and Outfall 012 BMP Effectiveness Study.

S1.D. Discharge Action Levels

Action Level values are not effluent limitations. Discharges that fail to meet action level values are not automatically considered permit violations or violations of water quality standards; however, if the Permittee fails to meet action levels that trigger a corrective action and does not comply with the specific corrective action requirements in Special Condition S1.D.1, S1.D.2, and S1.D.3, it would be a permit violation.

S1.D.1 Stormwater Pond Action Levels

Stormwater Pond Action Levels	
Monitoring Point STRMP	
Parameter	Action Level
Total Suspended Solids (TSS)	35 mg/l
Fluoride	35 mg/l
Aluminum	10 mg/l
pH	Outside the range of 6.0 to 9.0

Each time that sampling results are above an action level for TSS, fluoride, aluminum, or outside the action level range for pH the Permittee must take the following actions:

- a. Conduct an inspection of the drainage area for the affected outfall as promptly as possible, but **no later than 72 hours** after receipt of sampling results. The Permittee shall also complete the following: review BMPs, check for spills to the stormwater system, and check ditches and weir integrity and placement.
- b. Identify, to the extent possible, sources of stormwater contamination from industrial activity that are causing or contributing to the elevated levels of the action level parameter.
- c. Evaluate whether any improvements or changes to existing best management (BMPs) or additional operational source control, structural source control, or treatment BMPs are warranted to reduce stormwater contamination below action values. Any elevated action level parameters demonstrated to be attributed to vegetative or naturally occurring conditions do not require additional BMPs.
- d. Implement changes to existing BMPs or additional BMPs identified as needed in the investigation on a schedule approved by Ecology. Ecology may waive the requirement for additional controls and/or BMPs based on a technical demonstration by the Permittee that implementation of additional controls is not feasible or not necessary

to prevent discharges that may cause or contribute to a violation of water quality standards.

- e. Include a brief summary of inspection results and remedial actions taken in a. – d. above with the semi-annual Action Level Exceedance Report required by Permit Condition S1.D.3.

S1.D.2. Secondary Wastewater Treatment System Discharge

Secondary Wastewater Treatment System Discharge Monitoring Point SEC	
Parameter	Action Level
Total Suspended Solids (TSS)	120 mg/L
Fluoride	50 mg/L

Each time that sampling results are above an action level, the Permittee must take the following actions:

- a. Review the BMPs for the SWTP and check the addition rates of treatment chemicals, influent flows, and influent loading.
- b. Identify, to the extent possible, industrial activity that may be causing or contributing to the elevated levels of the action level parameter.
- c. Evaluate whether any improvements or changes to existing best management (BMPs) or additional operational source controls are warranted to reduce the effluent concentrations below action values.
- d. Implement changes to existing BMPs or additional BMPs identified as needed in the investigation on a schedule approved by Ecology.
- e. Include a brief summary of the investigation, including the results from the actions associated with items a. – d. above, and any remedial actions taken in the semi-annual Action Level Exceedance Report required by Permit Condition S1.D.3.

S1.D.3 Action Level Exceedance Report

The Permittee shall submit an Action Level Exceedance Report no later than January 15th and July 15th of each year. The semi-annual reports shall represent the preceding six months, July through December and January through June, respectively. The semi-annual report shall include corrective action documentation as required by S1.D.1 and S1.D.2. If corrective action is not yet completed at the time of submission of the Action Level Exceedance Report, the Permittee must describe the status of any outstanding corrective action(s).

The Permittee shall include the following information with each Action Level Exceedance Report:

- a. Identify the action level(s) that triggered the need for corrective action review and the number of times the action level was exceeded for that parameter in the last 12 months.
- b. Provide the results of the initial inspection(s)/investigation(s) required by Permit Conditions S1.D.1 and S1.D.2.
- c. Describe any changes to BMPs or remedial actions that were taken in response to the exceeded action level.
- d. If the action level for the same parameter is exceeded 6 or more times in a 12-month period, the Action Level Exceedance Report must include an analysis of whether additional operational or capital BMPs are necessary to reduce stormwater contamination below action levels and whether the action levels are appropriate for the expected pollutant loading and removal capability of the stormwater treatment system.

S1.D.4 Visual Inspections of the Stormwater Discharges (Monitoring Points STRMP, Outfall 011, and Outfall 012)

The Permittee must conduct monthly inspections of the stormwater pond discharge point (Monitoring Point STRMP), Outfall 011, and Outfall 012. The inspections must be conducted by qualified personnel.

Each inspection must include visual observations of the stormwater sampling locations and areas where stormwater is discharged to waters of the state for the presence of potentially deleterious pollutants, such as floating materials, visible sheen, discoloration, turbidity, odor, or presence of illicit discharges, such as domestic wastewater, noncontact cooling water, process wastewater, etc. The inspection must include an assessment of all stormwater BMPs that have been implemented, the effectiveness of the BMPs, and whether any maintenance or changes in BMPs are needed.

If an illicit discharge is discovered, the Permittee must notify Ecology within 7 days. The Permittee must eliminate the illicit discharge within 30 days.

The Permittee must record the results of the each inspection including:

- a. Time and date of inspection
- b. Locations inspected
- c. Any observations of potentially deleterious pollutants and the remedial actions the Permittee plans to take address their presence.
- d. Name, title, and signature of the person conducting the inspection.

The Permittee must submit the results of the monthly visual inspections with the monthly DMR required by Permit Condition S3.A.

S1.E. Mixing Zone Authorization

S1.E.1 Mixing Zone for Outfall 001

The following paragraphs define the maximum boundaries of the mixing zones:

Chronic mixing zone

The mixing zone is a circle with radius of 216 feet (66 meters) measured from the center of each discharge port. 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 acute mixing zone is a circle with radius of 21.6 feet (6.6 meters) measured from the center of each discharge port. The concentration of pollutants at the edge of the acute zone must meet acute aquatic life criteria.

Available Dilution (dilution factor) for Outfall 001	
Acute Aquatic Life Criteria	21
Chronic Aquatic Life Criteria	52
Human Health Criteria - Carcinogen	105
Human Health Criteria - Non-carcinogen	77

S1.E.2 Mixing Zone for Outfall 002

The following paragraphs define the maximum boundaries of the mixing zones:

Chronic mixing zone

The mixing zone is a circle with radius of 207 feet (63 meters) measured from the center of each discharge port. The mixing zone extends from the discharge port to the top of the water surface. 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 acute mixing zone is a circle with radius of 20.7 feet (6.3 meters) measured from the center of each discharge port. The mixing zone extends from the discharge port to the top of the water surface. The

concentration of pollutants at the edge of the acute zone must meet acute aquatic life criteria.

Available Dilution (dilution factor) for Outfall 002	
Acute Aquatic Life Criteria	19
Chronic Aquatic Life Criteria	33
Human Health Criteria - Carcinogen	48
Human Health Criteria - Non-Carcinogen	48

S2. Monitoring Requirements

S2.A.1 Monitoring Schedule

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

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
(1) Outfall 001 Process Wastewater (Monitoring Point 101)			
Flow	MGD	1/Day – recorded but not reported	Metered
		Monthly Average and Daily Maximum	Calculated ^a
TSS	mg/L	1/wk ^{b,c}	24-hr composite ^d
	lbs/day	Monthly	Calculated ^a
	lbs/day	Monthly	Calculated net loading rate ^a
Fluoride	mg/L	1/wk ^b	24-hr composite ^d
	lbs/day	Monthly	Calculated ^a
Aluminum	mg/L	1/wk ^{b,c}	24-hr composite ^d
	lbs/day	Monthly	Calculated ^a
	lbs/day	Monthly	Calculated net loading rate ^a
Free Cyanide ^e	µg/L	1/wk ^{b, aa}	Grab ^f
Nickel	mg/L	Semi-Annual ^{g, aa}	24-hr composite ^d
	lbs/day	Semi-Annual ^g	Calculated ^a
	lbs/day	Semi-Annual ^g	Calculated net loading rate ^a
Benzo(a)Pyrene	mg/L	Quarterly ^{h, aa}	24-hr composite ^d
	lbs/day	Quarterly ^h	Calculated ^a
Antimony	mg/L	Semi-Annual ^{g, aa}	24-hr composite ^d
	lbs/day	Semi-Annual ^g	Calculated ^a
	lbs/day	Semi-Annual ^g	Calculated net loading rate ^a
Oil and Grease	mg/L	Monthly ^{c, aa}	Grab ^f
Temperature ⁱ		Continuous ^j	Measurement

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
	degrees centigrade (°C)	Daily	Recorded - Maximum
pH	Standard Units	Continuous ^j	Measurement
	Standard Units	Daily	Recorded – Instantaneous Maximum and Minimum ^k
	Minutes	Daily	Duration pH between 5.0 and 6.0 and 9.0 and 10.0 ^l
(2) Outfall 001 Sanitary Wastewater Treatment Plant Influent^m			
Biochemical Oxygen Demand (BOD ₅)	milligrams/L (mg/L)	2/month ⁿ	24-hr composite ^d
	lbs/day	Monthly	Calculated
Total Suspended Solids (TSS)	mg/L	2/month ⁿ	24-hr composite ^d
(3) Outfall 001 Sanitary Wastewater Treatment Plant Effluent^o (Monitoring Point 051)			
Flow	Million gallons per day (MGD)	1/Day – recorded but not reported	Metered
		Monthly	Calculated ^a – Monthly Average and Daily Maximum
Biochemical Oxygen Demand (BOD ₅)	milligrams/L (mg/L)	2/month ^{n, aa}	24-hr composite ^d
	lbs/day	Monthly	Calculated ^a
BOD ₅	Percent Removal ^p	Monthly	Calculated ^p
Total Suspended Solids (TSS)	mg/L	2/month ^{n, aa}	24-hr composite ^d
	lbs/day	Monthly	Calculated ^a
TSS	Percent Removal ^p	Monthly	Calculated ^p
Fecal Coliform ^q	Organisms/100 ml	2/month ^{n, aa}	Grab ^f
		Monthly	Calculated Weekly Geometric Mean ^q
			Calculated Monthly Geometric Mean ^q

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Operating UV Tubes	Number operating	1/week ^{b, aa}	Visual
pH	Standard Units	1/week ^{b, aa}	Grab ^f
(4) Outfall 001 Stormwater Discharge (Monitoring Point D10)			
Flow	MGD	1/Day – recorded but not reported	Metered
		Monthly	Calculated ^a
TSS	mg/L	Once per storm event ^v	24-hr flow composite ^d
Fluoride	mg/L	Once per storm event ^v	24-hr flow composite ^d
Aluminum	mg/L	Once per storm event ^v	24-hr flow composite ^d
Benzo(a)Pyrene	mg/L	Annually, during a storm event ^v	24-hr flow composite ^d
Oil and Grease	mg/L	Monthly, when flow is present during daily water collection routine	Grab ^f
pH	Standard units	Continuous ^j	Metered
		Monthly	Recorded – Instantaneous Maximum and Minimum ^l
Precipitation	Inches/day	1/Day – recorded but not reported	Metered ^s
		Monthly	Recorded
(5) Outfall 001 Whole Effluent Toxicity Testing (Monitoring Point SP-10)			
Acute Toxicity Testing	N/A	Two times/permit term as described in Special Condition S15.F	Grab ^f
Chronic Toxicity Testing	N/A	Quarterly, first four quarters ^h	Grab ^f
Chronic Toxicity Testing	N/A	Quarterly, if required by S16.D ^{h, t}	Grab ^f
Chronic Toxicity Testing	N/A	Two times/permit term as specified by Special Condition S16, if required by S16.F	Grab ^f

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Additional requirements specified in Special Condition S15 and S16.			
(6) Outfall 001 Effluent ° Characterization and Permit Renewal Requirements (Monitoring Point SP-10)			
See Appendix A to identify the specific pollutants in the pollutant groups listed below			
Total Ammonia (as N)	µg/L	Annually	Grab ^f
Priority Pollutants (PP) – Total Metals, Cyanide ^e , and Total Phenols	µg/L; ng/L for mercury	Annually	Grab ^f
PP – Volatile Organic Compounds	µg/L	Annually	Grab ^f
PP – Acid-extractable Compounds	µg/L	Annually	Grab ^f
PP – Base-neutral Compounds	µg/L	Annually	Grab ^f
PP - Dioxin	pg/L	Annually	Grab ^f
PP – Pesticides/PCBs	µg/L	Annually ^u , when used on-site	Grab ^f
PP- Pesticides/PCBs	µg/L	Once in the fourth year of the permit	Grab ^f
(7) Outfall 002 Stormwater (Monitoring Point D10)			
Flow	Gallons/day	Monthly	Estimated
TSS	mg/l	Once per discharge event ^{v, w}	Grab ^f
Fluoride	mg/l	Once per discharge event ^{v, w}	Grab ^f
Aluminum	mg/l	Once per discharge event ^{v, w}	Grab ^f
Benzo(a)Pyrene	mg/l	Annually, during a discharge event ^{v, w}	Grab ^f
pH	Standard Units	Continuous (during the discharge event) ^{j, v, w}	Metered

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
(8) Outfall 002 Whole Effluent Toxicity Testing (Monitoring Point D10)			
Acute Toxicity Testing	N/A	Quarterly, during a discharge event, first four quarters ^h	Grab ^f
Acute Toxicity Testing	N/A	Quarterly, during a discharge event, if required by S15.D ^{h, t}	Grab ^f
Acute Toxicity Testing	N/A	Two times/permit term as specified by Special Condition S15, if required by S15.F	Grab ^f
Chronic Toxicity Testing	N/A	Quarterly, during a discharge event, first four quarters ^h	Grab ^f
Chronic Toxicity Compliance Testing	N/A	Quarterly, during a discharge event, if required by S16.D ^{h, t}	Grab ^f
Chronic Toxicity Testing	N/A	Two times/permit term as specified by Special Condition S16, if required by S16.F	Grab ^f
Additional requirements specified in Special Condition S15 and S16.			
(9) Outfall 011 ^x Stormwater			
TSS	mg/L	Monthly, beginning December 2016	Grab ^f
Aluminum	mg/L	Monthly, beginning December 2016	Grab ^f
Fluoride	mg/L	Monthly, beginning December 2016	Grab ^f
(10) Outfall 012 ^x Stormwater			
TSS	mg/L	Monthly, beginning December 2016	Grab ^f
Aluminum	mg/L	Monthly, beginning December 2016	Grab ^f

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Fluoride	mg/L	Monthly, beginning December 2016	Grab ^f
(11) Stormwater Pond Action Level Monitoring (Monitoring Point STRMP)			
Flow	Cubic feet per second (cfs)	Continuous	Metered
		Monthly Average and Recorded Maximum	Calculated ^a
TSS	mg/L	Once per storm event _r	24-hr flow composite ^d
Fluoride	mg/L	Once per storm event _r	24-hr flow composite ^d
Aluminum	mg/L	Once per storm event _r	24-hr flow composite ^d
pH	Standard units	Continuous, during a storm event _r	Metered
		Once per storm event _r	Recorded - Instantaneous Maximum and Minimum
(12) Secondary Wastewater Treatment System Effluent ^o Action Level Monitoring (Monitoring Point SEC)			
Flow	MGD	1/Day – recorded but not reported	Metered
		Monthly	Calculated ^a
TSS	mg/L	2/week ^{b, aa}	Flow-proportional batch composite ^y
Fluoride	mg/L	2/week ^{b, aa}	Flow-proportional batch composite ^y
Free Cyanide ^{e, bb}	ug/l	2/week ^{b, aa}	Grab ^f
PCBs	ug/l	Semi-Annual ^g	Grab ^f
(13) PUD Intake Water ^z			
Flow	MGD	1/week – recorded but not reported	Metered
		Monthly	Calculated ^a
TSS	mg/l	1/week	24-hr composite ^d
	lbs/day	Monthly	Calculated ^a
Aluminum	mg/l	1/week	24-hr composite ^d
	lbs/day	Monthly	Calculated ^a
Antimony	mg/l	Semi-Annual ^g	24-hr composite ^d
	lbs/day	Semi-Annual ^g	Calculated ^a
Nickel	mg/l	Semi-Annual ^g	24-hr composite ^d

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
	lbs/day	Semi-Annual ^g	Calculated ^a
Arsenic	mg/L	Semi-Annual ^g	24-hr composite ^d
(14) Production			
Aluminum Production	Tons/Month	1/Day – recorded but not reported	Recorded
		Monthly	Calculated ^a
Personnel	Personnel working onsite	Monthly Average	Estimated
(15) Sediment Study			
As specified in Special Condition S12.			
Footnotes for S2.A.1 Monitoring Table			
a	<p>Calculated values are determined using the results of the respective sample(s). Flow and production values are calculated by summing the daily measured values during the month/quarter and dividing by the number of days in the month/quarter. Average concentration values are calculated by summing the concentration values measured during the month/quarter and dividing the total by the number of samples analyzed for that parameter during the month/quarter. Pollutant loading rates are calculated using the following formula: Concentration (in mg/L) X Flow (in MGD) X Conversion Factor (8.34) = lbs/day</p> <p>For pollutants with a net loading rate, net loading rate equals the amount of the pollutant discharged through Monitoring Point 101 (process wastewater) in lbs/day minus the amount of the pollutant present in the intake water from the PUD in lbs/day. When the net loading rate is less than zero, zero shall be used for reporting and calculating the monthly average.</p>		
b	1/week, 2/week or 3/week means one (1), two (2) or three (3) samples during each calendar week, respectively.		
c	See Permit Condition S2.A.2 for reduced monitoring frequencies during temporary curtailment periods.		
d	24-hour composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample.		
e	The method for free cyanide analysis shall be Weak Acid Dissociable as specified in Appendix A.		
f	Grab means an individual sample collected over a fifteen (15) minute, or less, period.		
g	Semi-annual means two times per year. Semi-annual sampling is conducted at least once in January through June and at least once in July through December.		
h	Quarterly sampling periods are January through March, April through June, July through September, and October through December. For WET testing only - if sufficient flow is not present during a quarter, sample at the next reasonable sampling opportunity. Ensure that 4 samples are collected each calendar year as would be represented in collecting for each quarter.		

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
i	Temperature grab sampling must occur when the effluent is at or near its daily maximum temperature, which usually occurs in the late afternoon. If measuring temperature continuously, the Permittee must determine and report a daily maximum from a minimum interval of half-hour measurements in a 24-hour period. Continuous monitoring instruments must achieve an accuracy of 0.2 degrees C (or as otherwise approved by Ecology) and the Permittee must verify accuracy annually.		
j	Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The Permittee must take a measurement or collect a grab sample at least once every four hours when continuous monitoring is not possible.		
k	The Permittee must report the instantaneous maximum and minimum pH monthly. Do not average pH values.		
l	The Permittee must record and report the: <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. 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.		
m	Wastewater Influent means the raw sewage flow; sample at the headworks of the treatment plant excluding any side-stream returns from inside the plant.		
n	2/month means two (2) times during each calendar month. The samples may not be collected in the same calendar week.		
o	Final Effluent means wastewater exiting, or that has exited, the last treatment process or operation. Typically, this is after or at the exit from the chlorine contact chamber or other disinfection process.		
p	$\text{Percent removal} = ((\text{Average Influent concentration (mg/L)} - \text{Average Effluent concentration (mg/L)}) \div (\text{Average Influent concentration (mg/L)})) \times 100$ Calculate the percent removal of BOD ₅ and TSS using the above equation.		
q	Report a numerical value for fecal coliforms following the procedures in Ecology's <i>Information Manual for Treatment Plant Operators</i> , Publication Number 04-10-020 available at: http://www.ecy.wa.gov/programs/wq/permits/guidance.html . Do not report a result as too numerous to count (TNTC).		
r	A storm event is defined as a stormwater pond discharge greater than 3.7 cfs over any consecutive 120 minute period. However, only one 24-hour composite sample is required to be collected at any point in time. In addition, the Permittee is not required to start collecting the next composite sample until at least 48 hours after the previous composite sampling was completed. Monitoring in excess of 3 times per week is not required. "Week" is defined as Monday through Sunday.		

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
s	The Permittee may use local NOAA weather data for their precipitation data if the facility weather data is not available.		
t	Testing to demonstrate compliance with a toxicity limit will be required if required by Permit Condition S15.D or S16.D. If compliance testing is required, monitoring will begin the fifth quarter after the effective date of the permit.		
u	For every year except the 4 th year of the permit, the PCBs and pesticides listed in Appendix A are not required to be tested for unless they are used at the facility.		
v	The Permittee must collect grab samples of the stormwater at D-10 once per discharge event from Outfall 002 but no more frequently than once per week.		
w	The monitoring point for Outfall 002 is D-10. Samples collected from D-10 less than 24 hours prior to a discharge event for Outfall 002 may be used to satisfy the Outfall 002 sampling requirements.		
x	Refer to Permit Condition S20 for monitoring requirements at Outfalls 011 and 012.		
y	A flow proportional batch composite sample means a series of individual samples collected over a single batch process into a single container, and analyzed as one sample.		
z	PUD Intake water sampling is required for Intalco to net out pollutants as allowed by Permit Condition S1.A.1. Sampling is not required during a respective sampling period if Intalco does not plan to net out during that sampling period for that pollutant.		
aa	The monitoring frequency for this parameter has been reduced based on exemplary performance. To remain eligible for these reductions, the Permittee may not have any violations of effluent limitations or exceedance of the action level for this parameter or fail to submit DMRs. Violations of the effluent limit or exceedance of the action level for the parameter, failure to submit DMRs, or any other formal enforcement action may require increased monitoring. If such increased monitoring is deemed necessary by Ecology, the new monitoring frequency will be established by a minor permit modification or an Administrative Order.		
bb	The Permittee may request a reduction in the monitoring frequency of free cyanide at the SEC once the Natural Engineering Wastewater Treatment (NEWT) system has been operational for at least 12 months. Based on the free cyanide results at the SEC for a 12 month period, the monitoring frequency may be reduced upon written notification from the Department.		

S2.A.2 Temporary Curtailment Reduced Monitoring Frequencies

Temporary curtailment is defined as the shut-down of 90% or more of potline operations. During periods of temporary curtailment of smelting operations, the Permittee may reduce effluent monitoring to the frequencies shown in the following table. Parameters not include in the table below must be sampled at the frequency required in S2.A.1. Upon restart of the curtailed operations, monitoring frequencies shall revert back to those specified in S2.A.1.

Parameter	Units & Speciation	Reduced Minimum Sampling Frequency	Sample Type
(1) Outfall 001 – Monitoring Point 101			
TSS	mg/L	Monthly ^a	24-hr composite ^b
	lbs/day	Monthly	Calculated ^c
Aluminum	mg/L	Monthly ^a	24-hr composite ^b
	lbs/day	Monthly	Calculated ^c
Oil and Grease	mg/L	Quarterly ^d	Grab ^e
(2) Outfall 001 Stormwater Discharge (Monitoring Point D-10)			
TSS	mg/L	Weekly, when there is a storm event ^f	24-hr composite ^b
Fluoride	mg/L	Weekly, when there is a storm event ^f	24-hr composite ^b
Aluminum	mg/L	Weekly, when there is a storm event ^f	24-hr flow composite ^b
Oil and Grease	mg/L	Quarterly ^d , when flow is present during daily water collection routine	Grab ^e
(3) Stormwater Pond Action Level Monitoring (Monitoring Point STRMP)			
TSS	mg/L	Weekly, when there is a storm event ^f	24-hr composite ^b
Fluoride	mg/L	Weekly, when there is a storm event ^f	24-hr composite ^b
Aluminum	mg/L	Weekly, when there is a storm event ^f	24-hr flow composite
a	Monthly means once every calendar month, alternating weeks within the month when practicable.		
b	24-hour composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample.		
c	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		
d	Quarterly sampling periods are January through March, April through June, July through September, and October through December.		
e	Grab means an individual sample collected over a fifteen (15) minute, or less, period.		

Parameter	Units & Speciation	Reduced Minimum Sampling Frequency	Sample Type
f	A storm event is defined as a stormwater pond discharge greater than 3.7 cfs over any consecutive 120 minute period. However, only one 24-hour composite sample is required to be collected at any point in time. In addition, the Permittee is not required to start collecting the next composite sample until at least 48 hours after the previous composite sample was collected.		

S2.B. Sampling and Analytical Procedures

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

For the days monitored at Outfalls 001 and the Sanitary Lagoon: after a portion of the composite sample is removed for the Permittee’s analysis, the following remainder must be retained until 3:00 p.m. that day. The samples must be kept refrigerated at approximately 4 degrees Celsius (°C) in the dark during collection and storage.

- Outfall 001: 2 quarts or 2000 mL, minimum
- Sanitary Lagoon Discharge: 1 gallon or 4 L, minimum

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.C. Flow Measurement, Field Measurement, and Continuous Monitoring Devices

The Permittee must:

1. Select and use appropriate flow measurement, field measurement, and continuous monitoring devices and methods consistent with accepted scientific practices.
2. Install, calibrate, and maintain these devices to ensure the accuracy of the measurements is consistent with the accepted industry standard and the manufacturer’s recommendation for that type of device.
3. Calibrate continuous monitoring instruments weekly.
 - a. The calibration frequency may be reduced to monthly if the Permittee is able to demonstrate that monthly calibrations are sufficient based on monitoring records or the manufacturer’s recommendations.

4. The Permittee must calibrate the continuous pH monitoring probes using a 2 point calibration with standard pH buffers or per the manufacturer's recommendations.
5. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
6. Calibrate field measurements devices at 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.D. Laboratory Accreditation

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

S2.E. 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. Reporting

The first monitoring period begins on the effective date of the permit. The Permittee must:

1. Summarize, report, and submit monitoring data obtained during each monitoring period on the electronic Discharge Monitoring Report (DMR) form provided by Ecology within the Water Quality Permitting Portal. Include data for each of the parameters tabulated in Special Condition S2 and as required by the form. Report a value for each day sampling occurred

(unless specifically exempted in the permit) and for the summary values (when applicable) included on the electronic form.

To find out more information and to sign up for Water Quality Permitting Portal go to: <http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html>

2. Enter the “no discharge” reporting code for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate, if the Permittee did not discharge wastewater or a specific pollutant during a given monitoring period.
3. Report single analytical values below detection as “less than the detection level (DL)” by entering < followed by the numeric value of the detection level (e.g. < 2.0) on the DMR. If the method used did not meet the minimum DL and quantitation level (QL) identified in the permit, report the actual QL and DL in the comments or in the location provided.
4. Report the test method used for analysis in the comments if the laboratory used an alternative method not specified in the permit and as allowed in Appendix A OR S2.
5. Calculate average values (unless otherwise specified in the permit) using:
 - a. The reported numeric value for all parameters measured between the agency-required detection value and the agency-required quantitation value.
 - b. One-half the detection value (for values reported below detection) if the lab detected the parameter in another sample from the same monitoring point for the reporting period.
 - c. Report that the parameter is non-detect if the lab did not detect the parameter in any sample for the reporting period.
6. Report single-sample grouped parameters (for example priority pollutants, PAHs) on the WQWebDMR form and include: sample date, concentration detected, detection limit (DL) (as necessary), and laboratory quantitation level (QL) (as necessary).
7. The Permittee must also submit an electronic PDF 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, and confirmation that the lab is accredited for each parameter tested.
8. Ensure that DMRs are electronically submitted no later than the dates specified below, unless otherwise specified in this permit.
9. Submit DMRs for parameters with the monitoring frequencies specified in S2 (monthly, quarterly, annual, etc.) at the reporting schedule identified below. The Permittee must:
 - a. Submit **monthly** DMRs by the 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.
 - c. 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.
 - d. Submit **annual DMRs (including priority pollutants)**, unless otherwise specified in the permit, by January 15 for the previous calendar year. The annual sampling period is the calendar year.
10. Submit permit renewal application monitoring data in WQWebDMR as required in Special Condition S2 by August 1, 2019.
11. Submit reports to Ecology online using Ecology's electronic WQWebDMR submittal forms (electronic DMRs) as required above. Send paper reports to Ecology at:

Water Quality Permit Coordinator
Department of Ecology
Industrial Section
PO Box 47600
Olympia, WA 98504-7600

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 47706
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 using test procedures specified in Special Condition S2.B., 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 with the applicable monthly DMR.

a. Immediate reporting

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

- Failures of the disinfection system which results in the discharge of untreated water.
- Collection system overflows discharging to marine surface waters.
- Plant bypasses discharging to marine surface waters.

Department of Ecology	1-425-649-7000 (24 hours)
Northwest Regional Office	
Department of Health,	(360) 236-3330 (business hours)
Shellfish Program	(360) 789-8962 (after business hours)
	sf.growingarea@doh.wa.gov

The Permittee must also notify the Ecology Industrial Section permit manager by telephone for any of the above situations. Outside of normal

working hours, a voice mail notification to the Industrial Section permit manager or their designated backup will meet this requirement.

b. Twenty-four-hour reporting

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

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 or S1.B 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.

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. If Ecology waives the 5-day written report, a written report of the incident shall be submitted with the monthly Discharge Monitoring 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.

f. Report Submittal

The Permittee must submit reports as specified in Permit Condition S3.A.10.

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:
<http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm>.

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, but is not limited to, keeping operational logbooks (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.
2. Submit to Ecology for review substantial changes or updates to the O&M Manual whenever it incorporates them into the manual.
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 for the Sanitary Lagoon

In addition to the requirements of WAC 173-240-080 (1) through (5), 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 sampling protocols and procedures for compliance with the sampling and reporting requirements in the wastewater discharge permit.

c. O&M Manual components for Industrial Wastewater Facilities

In addition to the requirements of WAC 173-240-150 (1) and (2), 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 sampling protocols and procedures for compliance with the sampling and reporting requirements in the wastewater discharge permit.
4. Checking the secondary wastewater treatment plant clarifier cover in accordance with the existing inspection plan and take corrective action as needed to repair/replace missing or inadequate cover components.

d. 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 August 1, 2019. 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

This permit prohibits a bypass, which is the intentional diversion of waste streams from any portion of a treatment facility.

Storm events that exceed the hydraulic design criteria of stormwater treatment systems may bypass the treatment system provided the bypass does not cause an exceedance of water quality criteria. Such bypasses are allowed because Ecology has determined that Intalco's stormwater treatment system meets AKART requirements.

Ecology may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies.

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

This permit authorizes a bypass if it allows for essential maintenance and does not have the potential to cause violations of limits or other conditions of this permit, or adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least ten (10) days before the date of the bypass.

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

This permit authorizes such a bypass only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
 - b. No feasible alternatives to the bypass exist, such as:
 - The use of auxiliary treatment facilities.
 - Retention of untreated wastes.
 - Stopping production.
 - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass.
 - Transport of untreated wastes to another treatment facility or preventative maintenance), or transport of untreated wastes to another treatment facility.
 - c. The Permittee has properly notified Ecology of the bypass as required in Special Condition S3.F of this permit.
3. If bypass is anticipated and has the potential to result in noncompliance of this permit.
 - a. The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:
 - A description of the bypass and its cause.
 - An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
 - A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
 - The minimum and maximum duration of bypass under each alternative.
 - A recommendation as to the preferred alternative for conducting the bypass.
 - The projected date of bypass initiation.
 - A statement of compliance with SEPA.
 - A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.
 - Details of the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

- b. For probable construction bypasses, the Permittee must notify Ecology of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during preparation of design documents (such as facility plans, engineering reports, and plans and specifications) and the design documents must include the results of the analysis to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.
- c. Ecology will consider the following prior to issuing an administrative order for this type of bypass:
 - If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
 - If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
 - If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

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

S5. 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 with the permit renewal application by August 1, 2019.

S6. Application for Permit Renewal or Modification for Facility Changes

The Permittee must submit an application for renewal of this permit by August 1, 2019.

The Permittee must also submit a new application or supplement 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. Facility Loading

S7.A. Design Criteria

The flows or waste loads for the permitted facility must not exceed the following design criteria:

Sanitary Lagoon	
Flow through the UV Disinfection System	350,000 gpd
Stormwater Pond	
Influent Flow	30 cfs in any consecutive 10 minute period*

*As determined by measuring stormwater pond effluent and adjusting for rainfall

S7.B. Stormwater Treatment Design Criteria

As specified in Permit Condition S4.B, storm events that exceed the hydraulic design criteria of stormwater treatment systems may bypass the treatment system because Ecology has determined the system meets AKART requirements. If the Permittee must bypass the storm water pond to meet the design criteria specified above, Ecology will not consider that specific bypass event to be an exceedance of the storm water pond’s design capacity.

S8. Non-Routine and Unanticipated Discharges

1. Beginning on the effective date of this permit, the Permittee is authorized to discharge non-routine wastewater to Outfall 001 and non-stormwater discharges to the stormwater treatment pond 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 any parameter deemed necessary by Ecology and report the results of the analysis as required by S8.1.e. 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 an update to the existing spill control plan to Ecology by February 1, 2016.
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

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.
- Be consistent with the *Stormwater Management Manual for Western Washington* (2012 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 Stormwater Pollution Prevention Plan (SWPPP) Update

The Permittee must update its SWPPP in accordance with the guidance document entitled *Guidance Manual for Preparing/Updating a Stormwater Prevention Plan for Industrial Facilities* (Ecology Publication No. 04-10-030). The SWPPP must be submitted to Ecology for review and approval by August 1, 2015. The Permittee must implement 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.
- Update the BMPs
- Include a site map that identifies the following applicable items:
 - The scale or relative distances between significant structures and drainage systems.
 - Significant features.
 - The stormwater drainage and discharge structures and identify, by name, any other party other than the Permittee that owns any stormwater drainage or discharge structures.
 - The stormwater drainage areas for each stormwater discharge point off-site (including discharges to ground water) and assign a unique identifying number for each discharge point.

- Paved areas and buildings.
- Areas of pollutant contact (actual or potential) associated with specific industrial activities.
- Conditionally approved non-stormwater discharges.
- Surface water locations (including wetlands and drainage ditches.)
- Areas of existing and potential soil erosion (in a significant amount).
- Vehicle maintenance areas.
- Lands and waters adjacent to the site that may be helpful in identifying discharge points or drainage routes.
- Provide additional information regarding the areas contributing to Outfalls 011 and 012 and include BMPs associated with those outfalls.
- Include any updates to Appendix A: Best Management Practices in the SWPPP.
- Include the dates (month/year) when BMPs were implemented or action items were completed or a schedule for BMPs or action items not yet implemented or completed.

S10.B SWPPP Modifications

The Permittee shall modify the SWPPP whenever there is a change in design, construction, operation or maintenance, which causes the SWPPP to be less effective in controlling the pollutants. Whenever the description of potential pollutant sources or the pollution prevention measures and controls identified in the SWPPP are inadequate, the SWPPP shall be modified, as appropriate, within two (2) months of such determination. The proposed modifications to the SWPPP shall be submitted to Ecology at least 30 days in advance of implementing the proposed changes in the plan unless Ecology approves immediate implementation. The Permittee shall 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 Implementation

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).

1. The wet season inspection shall be conducted during a rainfall event by personnel trained by Intalco in the requirements of the SWPPP to verify that the description of potential pollutant sources required under this permit are accurate; that the site map required in the SWPPP has been updated or

otherwise modified to reflect current conditions; and that the controls to reduce pollutants in stormwater discharges associated with industrial activity identified in the SWPPP are being implemented and are adequate. The wet weather inspection shall include observations of the presence of floating materials, suspended solids, oil sheen, discolorations, turbidity, odor, etc. in the stormwater discharges.

2. Personnel trained by Intalco in the requirements of the SWPPP shall conduct the dry season inspection. The dry season inspection shall determine the presence of unpermitted non-stormwater discharges such as domestic wastewater, noncontact cooling water, or process wastewater (including *leachate*) to the stormwater drainage system. If an unpermitted, non-stormwater discharge is discovered, the Permittee shall immediately notify Ecology.

S10.D SWPPP Evaluation

The Permittee shall 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 shall be maintained summarizing the results of inspections and shall 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 shall identify any incidents of noncompliance.

S11. Fugitive Alumina Pollution Prevention Plan

Ecology has determined that the Permittee must use best management practices when unloading alumina ore to minimize the release of fugitive alumina emissions to the Strait of Georgia. The Permittee must submit a Fugitive Alumina Pollution Prevention plan to Ecology for review and approval by August 1, 2016. The Permittee must implement the Pollution Prevention plan within 60 days of approval of the plan by Ecology. The Pollution Prevention plan must include the following:

1. Existing procedures to minimize spillage and fugitive emissions during alumina ore unloading.
2. An assessment of the points, areas, and activities within the alumina ore unloading system that would likely generate fugitive alumina ore.
3. Using the results of the assessment, an evaluation of potential measures that could be implemented to minimize the amount of alumina ore that is released to the environment during unloading activities. For each measure, the plan must include a discussion of technical and economic feasibility and other factors that could influence the selection and implementation of the pollution prevention measure. At a minimum, the measures evaluated must include the following:
 - Maintenance of the seal on the alumina ore handling bucket (also known as the clamshell) to prevent fugitive alumina emissions during the conveyance of alumina ore from the ship to the unloading hopper.

- Maintenance of the flexible flaps located at the vestibule of the unloader hopper in good working condition. Damaged or missing flexible flaps must be replaced prior to the next ship unloading event.
 - Re-programming the clamshell movements to:
 - Ensure that after the alumina is dumped into the hopper, the clamshell remains in place in an open position to allow remaining alumina to fall out into the hopper.
 - Ensure that the clamshell is tightly closed before it begins moving away from its dumping location over the hopper and remains closed on the route back to the hold.
 - Installing a containment system to prevent fugitive alumina emissions from escaping while bobcats are pushing the remaining alumina ore at the bottom of the hold into a pile.
 - Inspection frequencies to check the following:
 - The tops and sides of the clamshell to make sure it is not holding alumina ore that will fall off as the clamshell is moved from the hold to the hopper.
 - Clamshell operations for visible fugitive alumina emissions during daylight hours when the clamshell is in operation.
 - Vacuuming frequencies to clean spilled alumina ore off the pier during unloading operations.
4. The fugitive alumina pollution prevention measures selected and the timeframes for implementation.
 5. A training plan to educate and train employees that operate the equipment used to unload the alumina ore on the importance of minimizing the release of fugitive alumina ore.
 6. Procedures for demonstrating compliance with the pollution prevention plan. Records of inspections and any corrective actions taken must be kept on file and available for review by Ecology.

S12. Sediment Monitoring

S12.A. Sediment Data Report

A sediment sampling and analysis plan was submitted to Ecology on April 5, 2011 for review and approval. The Permittee must collect sediment samples during the first stable period (which is mid-August through mid-September) following Ecology's approval of the sediment sampling and analysis plan. The Permittee must submit to Ecology a Sediment Data Report containing the results of the sediment sampling and analysis no later than 120 days after sample collection and no later than March 15, 2016. The sediment data report must conform to the approved sediment sampling and analysis plan.

In addition to a Sediment Data Report, the sediment chemical and biological data must be submitted to Ecology's EIM database (<http://www.ecy.wa.gov/eim/>).

S13. Outfall Evaluation

The Permittee must inspect Outfall 001, at least once every five years, the submerged portion of the outfall line and diffuser to document its integrity and continued function. If conditions allow for a photographic verification, the Permittee must include such verification in the report. By October 1, 2016 and every five years thereafter, the Permittee must submit the inspection report to Ecology within 90 days of conducting the outfall evaluation.

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 (latitude/longitude) and depth (at MLLW) of the diffuser section of the outfall.
- Assess physical condition of the submarine line, including side sewer laterals up to the ordinary high water line.
- Assess physical condition of anchors used to secure the submarine line.

S14. 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 I plant (per Chapter 70.95B RCW and 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.

S15. Acute Toxicity

S15.A. Outfall 002 Effluent Characterization

1. Conduct quarterly acute toxicity testing on the final effluent for one year starting in 2nd Quarter 2015. 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 and starting no later than July 30, 2015. Each subsequent 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 5.3% effluent.

Conduct the following two acute toxicity tests on each sample: Acute Toxicity Tests	Species	Method
Topsmelt 96-hour static-renewal test	<i>Atherinops affinis</i>	EPA-821-R-02-012
Mysid 48-hour static test	<i>Americamysis bahia</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. 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.

S15.B. Outfall 002 Acute Toxicity

The effluent limit for acute toxicity at Outfall 002 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.E of this permit. **The ACEC for Outfall 002 equals 5.3% effluent.**

S15.C. Compliance with the Outfall 002 Effluent Limit for Acute Toxicity

Compliance with the Outfall 002 effluent limit for acute toxicity means the results of the testing specified in Section C 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.

S15.D. Compliance Testing for Outfall 002 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 of Outfall 002 if characterization determines that the effluent limit for acute toxicity applies. If there are no discharges during a quarter, the Permittee must conduct acute toxicity testing for the next available discharge event with sufficient flow. Testing must begin by September 2016. 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 and starting no later than October 30, 2016. Each subsequent report is due on April 30th, July 30th, October 30th, and January 30th for each of the respective quarters 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:

Acute Toxicity Tests	Species	Method
Topsmelt 96-hour static-renewal test	<i>Atherinops affinis</i>	EPA-821-R-02-012
Mysid 48-hour static test	<i>Americamysis bahia</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

S15.E. Response to Noncompliance with the Effluent Limit for Outfall 002 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 or at the next available discharge event with sufficient flow. The Permittee must:

1. Test the next four discharge events 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 required by Section 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:

1. Operating records
2. Monitoring results
3. Inspection records
4. Spill reports
5. Weather records
6. Production records
7. Raw material purchases
8. 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)).

S15.F. Testing when there is No Permit Limit for Acute Toxicity

S15.F.1 Outfall 001 Acute Toxicity Testing

The Permittee must:

- i. Conduct acute toxicity testing on the final effluent for Outfall 001 once in the last winter and once in the last summer prior to submission of the application for permit renewal.
- ii. Submit the results to Ecology within 45 days of sampling and no later than November 15, 2018 for the summer test and no later than May 1, 2019 for the winter test.
- iii. Conduct acute toxicity testing on a series of at least five concentrations of effluent, including 100% effluent and a control.

Use each of the following species and protocols for each acute toxicity test:

Acute Toxicity Tests	Species	Method
Topsmelt 96-hour static-renewal test	<i>Atherinops affinis</i>	EPA-821-R-02-012
Mysid 48-hour static test	<i>Americamysis bahia</i>	EPA-821-R-02-012

S15.F.2. Outfall 002 Acute Toxicity Testing

The Permittee must:

- i. Conduct acute toxicity testing on the final effluent for Outfall 002 once in the last winter and once in the last summer prior to submission of the application for permit renewal.
- ii. Submit the results to Ecology within 45 days of sampling and no later than November 15, 2018 for the summer test and no later than May 1, 2019 for the winter test.
- iii. Conduct acute toxicity testing on a series of at least five concentrations of effluent, including 100% effluent and a control.

Use each of the following species and protocols for each acute toxicity test:

Acute Toxicity Tests	Species	Method
Topsmelt 96-hour static-renewal test	<i>Atherinops affinis</i>	EPA-821-R-02-012
Mysid 48-hour static test	<i>Americamysis bahia</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

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 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 grab 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 must conduct whole effluent toxicity tests on an unmodified sample of final effluent.

S16. Chronic Toxicity

S16.A Effluent Characterization

The Permittee must characterize the wastewater discharged from Outfall 001 and Outfall 002 for chronic toxicity as specified below.

S16.A.1 Outfall 001 Effluent Characterization

The Permittee must:

- i. Conduct quarterly chronic toxicity testing on the final effluent for Outfall 001 for one year starting in 2nd Quarter 2015. Quarters means January through March, April through June, July through September, and October through December.
- ii. Submit a quarterly written report to Ecology for one year within 45 days of sampling and starting no later than July 30, 2015. Each subsequent report is due on April 30th, July 30th, October 30th, and January 30th for each of the respective quarters of each year. Further instructions on testing conditions and test report content are in Section G below.
- iii. 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 4.8% effluent. The series of dilutions should also contain the CCEC of 1.9% effluent.

Conduct the following two chronic toxicity tests on each sample:

Saltwater Chronic Test	Species	Method
Mysid shrimp survival and growth	<i>Americamysis bahia</i> (formerly <i>Mysidopsis bahia</i>)	EPA-821-R-02-014
Sea urchin/ Sand dollar survival and development	<i>Strongylocentrotus purpuratus</i> / <i>Dendraster excentricus</i>	EPA/600/R-95/136

The laboratory must conduct the sea urchin and sand dollar (echinoderm) test in accordance with EPA/600/R-95/136 and the echinoderm development test conditions in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. The laboratory must use whichever one of the two species that will give a valid result in each particular test.

- iv. 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).
- v. 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.

S16.A.2 Outfall 002 Effluent Characterization

The Permittee must:

- i. Conduct quarterly chronic toxicity testing on the final effluent for Outfall 002 for one year starting in 2nd Quarter 2015. Quarters means January through March, April through June, July through September, and October through December.
- ii. Submit a quarterly written report to Ecology for one year within 45 days of sampling and starting no later than July 30, 2015. These dates assume 30 days after the end of the quarter). Each subsequent report is due on April 30th, July 30th, October 30th, and January 30th for each of the respective quarters of each year. Further instructions on testing conditions and test report content are in Section G below.
- iii. 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 5.3% effluent. The series of dilutions should also contain the CCEC of 3.0% effluent.

Conduct the following chronic toxicity test on each sample:

Saltwater Chronic Test	Species	Method
Sea urchin/ Sand dollar survival and development	Strongylocentrotus purpuratus/ Dendraster excentricus	EPA/600/R-95/136

The laboratory must conduct the sea urchin and sand dollar (echinoderm) test in accordance with EPA/600/R-95/136 and the echinoderm development test conditions in the most recent version

of Ecology Publication No. WQ-R-95-80, Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria. The laboratory must use whichever one of the two species that will give a valid result in each particular test.

- iv. 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.

S16.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).

S16.B.1 Outfall 001 Effluent Limit for Chronic Toxicity

The CCEC means the maximum concentration of effluent during critical conditions at the boundary of the mixing zone, defined in Section S1.E.1 of this permit. **The CCEC equals 1.9% effluent.**

S16.B.2 Outfall 001 Effluent Limit for Chronic Toxicity

The CCEC means the maximum concentration of effluent during critical conditions at the boundary of the mixing zone, defined in Section S1.E.2 of this permit. **The CCEC equals 3.0% effluent.**

S16.C. Compliance with the Effluent Limit for Chronic Toxicity

Compliance with the Outfall 001 and Outfall 002 effluent limit for chronic toxicity means the results of the testing specified in Section 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.

S16.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.
2. Conduct quarterly chronic toxicity testing on the final effluent of Outfall 001 and/or Outfall 002 if characterization determines that the effluent limit for chronic toxicity applies. Testing must begin by September 2016. 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 and starting no later than October 30, 2016. Each subsequent report is due on April 30th, July 30th, October 30th, and January 30th for each of the respective quarters of each year. Further instructions on testing conditions and test report content are in Section G below.
4. Perform compliance tests using the following species and the most recent version of the following protocols. Where more than one species is specified, the tests must be conducted on a rotating basis between the species. The laboratory must use whichever species that will give a valid result in each particular test.

The laboratory must conduct the sea urchin and sand dollar (echinoderm) test in accordance with EPA/600/R-95/136 and the echinoderm development test conditions in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.

4.a. Outfall 001 test species:

Saltwater Chronic Test	Species	Method
Mysid shrimp survival and growth	<i>Americamysis bahia</i> (formerly <i>Mysidopsis bahia</i>)	EPA-821-R-02-014
Sea urchin/ Sand dollar survival and development	<i>Strongylocentrotus purpuratus</i> / <i>Dendraster excentricus</i>	EPA/600/R-95/136

4.b. Outfall 002 test species:

Saltwater Chronic Test	Species	Method
Sea urchin/ Sand dollar survival and development	<i>Strongylocentrotus purpuratus/ Dendraster excentricus</i>	EPA/600/R-95/136

S16.E. Response to Noncompliance with the Effluent Limit for Chronic Toxicity

If a toxicity test conducted under Section D determines a statistically significant difference in response between the CCEC 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 or at the next available discharge event with sufficient flow for Outfall 002. The Permittee must:

1. Conduct additional testing each month for three consecutive months using the same test and species as the failed compliance test for Outfall 001 or test the next three discharge events using the same test and species as the failed compliance test for Outfall 002.
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 Section C after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Section 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 by S16.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:

1. Operating records
2. Monitoring results
3. Inspection records
4. Spill reports
5. Weather records
6. Production records
7. Raw material purchases
8. 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)).

S16.F Testing when there is No Permit Limit for Chronic Toxicity

S16.F.1 Outfall 001 Chronic Toxicity

The Permittee must:

- i. 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.
- ii. Submit the results to Ecology within 45 days of sampling and no later than November 15, 2018 for the summer test and no later than May 1, 2019 for the winter test.
- iii. 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 4.8% effluent. The series of dilutions should also contain the CCEC of 1.9% effluent.
- iv. 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.
- v. Perform chronic toxicity tests with all of the following species and the most recent version of the following protocols:

Saltwater Chronic Test	Species	Method
Topsmelt survival and growth	<i>Atherinops affinis</i>	EPA/600/R-95/136
Mysid shrimp survival and growth	<i>Americamysis bahia</i> (formerly <i>Mysidopsis bahia</i>)	EPA-821-R-02-014
Sea urchin/ Sand dollar survival and development	<i>Strongylocentrotus purpuratus</i> / <i>Dendraster excentricus</i>	EPA/600/R-95/136

The laboratory must conduct the sea urchin and sand dollar (echinoderm) test in accordance with EPA/600/R-95/136 and the echinoderm development test conditions in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. The laboratory must use whichever one of the two species that will give a valid result in each particular test.

S16.F.2. Outfall 002 Chronic Toxicity

The Permittee must:

- i. 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.
- ii. Submit the results to Ecology within 45 days of sampling and no later than November 15, 2018 for the summer test and no later than May 1, 2019 for the winter test.
- iii. 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 5.3% effluent. The series of dilutions should also contain the CCEC of 3.0% effluent.
- iv. 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.
- v. Perform chronic toxicity tests with all of the following species and the most recent version of the following protocols:

Saltwater Chronic Test	Species	Method
Topsmelt survival and growth	<i>Atherinops affinis</i>	EPA/600/R-95/136
Mysid shrimp survival and growth	<i>Americamysis bahia</i> (formerly <i>Mysidopsis bahia</i>)	EPA-821-R-02-014
Sea urchin/ Sand dollar survival and development	<i>Strongylocentrotus purpuratus</i> / <i>Dendraster excentricus</i>	EPA/600/R-95/136

The laboratory must conduct the sea urchin and sand dollar (echinoderm) test in accordance with EPA/600/R-95/136 and the echinoderm development test conditions in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. The laboratory must use whichever one of the two species that will give a valid result in each particular test.

S16.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 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 grab 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 must conduct whole effluent toxicity tests on an unmodified sample of final effluent.

S17. Secondary Wastewater Treatment System Treatment Efficiency Study

S17.A Secondary Wastewater Treatment System (SEC, formerly SWTS) Efficiency Study Plan

The Permittee shall review and update, as necessary, the Secondary Wastewater Treatment System Efficiency Study Plan dated December 2007. The plan must be submitted to Ecology for review no later than August 1, 2015. The study plan shall include, at a minimum:

1. A sampling and analysis plan that includes a minimum of six 24-hour time based composite samples of influent and effluent collected on six separate days representing normal operations (when the wet scrubber system and the SWTS are in relatively steady state, i.e. no peak flows, upsets, or maintenance turnarounds). Each sample shall be analyzed for TSS, aluminum, fluoride, free cyanide, and pH. The timing of sample collection shall be such that each of the effluent samples corresponds to the upstream influent sample and the resultant analytical results can be effectively used to estimate removal efficiencies across the SEC.

2. A plan for monitoring and recording the flow through the system at the time of sampling. The flow monitoring shall be conducted to provide information on how the system operates under different hydraulic or pollutant loading rates. Acceptable methods of monitoring shall include: in-pipe metering, or other commonly used engineering methods approved by Ecology.
3. A flow diagram which illustrates the locations of the influent and effluent sampling points. The flow diagram shall identify all extraneous wastewater streams to and from the treatment system, including recycle streams. The sample points shall be selected to be representative of each wastewater stream without the influence of recycle streams.

S17.B Secondary Wastewater Treatment System Efficiency Study Engineering Report

The Permittee must conduct the treatment efficiency study of the SWTS within 90 days of Ecology's approval of the plan. The Permittee must submit an engineering report detailing the findings of the study within 120 days of completing the study.

The engineering report must contain the following information:

1. A schematic of the treatment unit.
2. The last two years of flow data through the treatment units.
3. Design data and sizing calculations for each unit in the wastewater treatment system.
4. An analysis of the current treatment and removal efficiencies for TSS, aluminum, fluoride, and free cyanide.
5. The analysis must address anticipated changes proposed for the Permittee's operations during the next permit term that may affect the wastewater treatment system capacity. The report must include a discussion of any production increases, modifications to process units, etc., that could potentially cause an increase in hydraulic or pollutant loading to the wastewater treatment facility.

S18. Anode Contact Cooling Water AKART Evaluation

The Permittee must determine if the current treatment system for the direct contact anode cooling water in the Carbon Plant provides all known, available and reasonable methods of prevention, control, and treatment (AKART) for benzo-a-pyrene (B(a)P), antimony, nickel, aluminum, and fluoride. The AKART analysis must consist of an economic analysis, an environmental analysis, and an industry analysis of wastewater treatment technologies for the anode contact cooling water. If the Permittee eliminates the anode contact cooling wastewater stream from discharge to Outfall 001, the Permittee may submit documentation demonstrating that the discharge has been eliminated in lieu of performing the AKART analysis.

The Permittee must submit a report that is stamped by a licensed professional engineer with the results of the analysis or documentation demonstrating that the discharge has been eliminated no later than February 1, 2016. If the Permittee is required to submit a report, the report must include the following:

1. Identification of all known, available, and reasonable wastewater treatment technologies for the anode contact cooling water wastewater stream.
2. An economic analysis in accordance Chapter IV of Ecology's Water Quality Programs Permit Writer's Manual (Publication no. 92-109).
3. An environmental analysis that addresses the reduction in pollutants identified above discharged to the receiving water and potential environmental impacts associated with implementation of the wastewater treatment technologies.
4. An industry analysis that reviews the standard treatment technology and practices used by comparable industrial facilities and their applicability to the Permittee.
5. If the evaluation demonstrates that the Permittee is not providing AKART for the anode contact cooling water, the report must include the proposed upgrades or modifications to the wastewater treatment system that will be implemented to meet the AKART standard and a schedule for implementing the proposed upgrades or modifications.

S19. Ground Water Impact Study

Permits issued by Ecology must be conditioned in such a manner so as not to allow violations of the Ground Water Quality Standards (Chapter 173-200 WAC). The effect of any discharge through the unlined native clay bottom of the sanitary plant lagoon on ground water cannot be determined without further investigation. To determine what this effect may be, the Permittee must:

1. Conduct a Ground Water Impact Study within 180 days of Ecology's approval of the Ground Water Impact Study Plan submitted by Intalco dated February 26, 2010.
2. Prepare and submit a report detailing the results of the ground water impact study to Ecology for review and approval within 120 days of completing the study. The report must contain a schedule for installing groundwater wells and a monitoring plan if the results of the study indicate that there is a potential for the wastewater to impact ground water.
3. Guidance for preparation of monitoring plans is provided in Ecology's *Implementation Guidance for the Ground Water Quality Standards* (Publication #96-02, April 1996). Existing information on hydrogeologic conditions can be used if it has been obtained within the past five years and the information is in accordance with the guidance.

S20. Outfall 011 and Outfall 012 BMP Effectiveness Study

The Permittee is required to collect stormwater generated from areas impacted by industrial activity and provide all known, available, and reasonable methods of

prevention, control, and treatment (AKART) prior to discharging the stormwater. The Permittee must demonstrate that AKART is being provided for the discharges from Outfall 011 and 012.

1. The Permittee must prepare a best management practices (BMP) effectiveness study plan and schedule for Outfalls 011 and 012 and submit it to Ecology for review and approval by August 1, 2016. The study plan must include, at a minimum:
 - a. A description of the potential sources of pollution for the stormwater that is discharged from Outfall 011 and Outfall 012.
 - b. An assessment of the containment area for the middle and southern portions of the alumina silo storage area. This assessment must include the integrity of the curbing surrounding the area and potential low spots that might collect stormwater and overflow the curbing.
 - c. A description of current BMPs that have been implemented to prevent pollution in the stormwater discharged from Outfall 011 and Outfall 012.
 - d. An evaluation of safe, accessible, and representative sampling locations for Outfall 011 and Outfall 012 and identification of new monitoring locations for the two outfalls.
2. The Permittee must collect monthly grab samples from the new monitoring locations for Outfalls 011 and 012 beginning within 60 days of Ecology's approval of the locations and no later than December 31, 2016. The samples must be analyzed for TSS, aluminum, and fluoride. The results shall be reported in the monthly DMR.
After one year of testing at Outfalls 011 and 012, the Permittee may petition Ecology in writing to reduce or eliminate this monitoring.
3. The Permittee shall submit a report detailing the findings of the study to Ecology within 120 days of completion of the study. The report must include the following information:
 - a. Recommended repairs or BMPs to address containment issues at the middle and southern portions of the alumina silo storage area.
 - b. An evaluation of the BMPs that have been implemented and whether additional BMPs are necessary to provide all know, available, and reasonable methods of prevent, control, and treatment (AKART) for the stormwater.
 - c. A schedule of additional or improved BMP implementation, if deemed necessary by 3.b. and 3.c.

General Conditions

G1. Signatory Requirements

1. All applications, reports, or information 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.
 - In the case of a partnership, by a general partner.
 - In the case of sole proprietorship, by the proprietor.
 - 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 this Permit

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, 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 Permittee 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.

CONVENTIONAL PARAMETERS

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
Biochemical Oxygen Demand	SM5210-B		2 mg/L
Soluble Biochemical Oxygen Demand	SM5210-B ³		2 mg/L
Chemical Oxygen Demand	SM5220-D		10 mg/L

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ $\mu\text{g/L}$ unless specified	Quantitation Level (QL)² $\mu\text{g/L}$ unless specified
Total Organic Carbon	SM5310-B/C/D		1 mg/L
Total Suspended Solids	SM2540-D		5 mg/L
Total Ammonia (as N)	SM4500-NH ₃ -B and C/D/E/G/H		20
Flow	Calibrated device		
Dissolved oxygen	SM4500-OC/OG		0.2 mg/L
Temperature (max. 7-day avg.)	Analog recorder or Use micro-recording devices known as thermistors		0.2° C
pH	SM4500-H ⁺ B	N/A	N/A

NONCONVENTIONAL PARAMETERS

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ $\mu\text{g/L}$ unless specified	Quantitation Level (QL)² $\mu\text{g/L}$ unless specified
Total Alkalinity	SM2320-B		5 mg/L as CaCO ₃
Chlorine, Total Residual	SM4500 Cl G		50.0
Color	SM2120 B/C/E		10 color units
Fecal Coliform	SM 9221E,9222	N/A	Specified in method - sample aliquot dependent
Fluoride (16984-48-8)	SM4500-F E	25	100
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 No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
Soluble Reactive Phosphorus (as P)	SM4500- PE/PF	3	10
Phosphorus, Total (as P)	SM 4500 PB followed by SM4500-PE/PF	3	10
Oil and Grease (HEM) (Hexane Extractable Material)	1664 A or B	1,400	5,000
Salinity	SM2520-B		3 practical salinity units or scale (PSU or PSS)
Settleable Solids	SM2540 -F		500 (or 0.1 mL/L)
Sulfate (as mg/L SO ₄)	SM4110-B		0.2 mg/L
Sulfide (as mg/L S)	SM4500-S ² F/D/E/G		0.2 mg/L
Sulfite (as mg/L SO ₃)	SM4500-SO3B		2 mg/L
Total Coliform	SM 9221B, 9222B, 9223B	N/A	Specified in method - sample aliquot dependent
Total dissolved solids	SM2540 C		20 mg/L
Total Hardness	SM2340B		200 as CaCO ₃
Aluminum, Total (7429-90-5)	200.8	2.0	10
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
Cobalt, Total (7440-48-4)	200.8	0.05	0.25

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
Iron, Total (7439-89-6)	200.7	12.5	50
Magnesium, Total (7439-95-4)	200.7	10	50
Molybdenum, Total (7439-98-7)	200.8	0.1	0.5
Manganese, Total (7439-96-5)	200.8	0.1	0.5
NWTPH Dx ⁴	Ecology NWTPH Dx	250	250
NWTPH Gx ⁵	Ecology NWTPH Gx	250	250
Tin, Total (7440-31-5)	200.8	0.3	1.5
Titanium, Total (7440-32-6)	200.8	0.5	2.5

PRIORITY POLLUTANTS

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
METALS, CYANIDE & TOTAL PHENOLS			
Antimony, Total (7440-36-0)	200.8	0.3	1.0
Arsenic, Total (7440-38-2)	200.8	0.1	0.5
Beryllium, Total (7440-41-7)	200.8	0.1	0.5
Cadmium, Total (7440-43-9)	200.8	0.05	0.25
Chromium (hex) dissolved 18540-29-9)	SM3500-Cr EC	0.3	1.2

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ $\mu\text{g/L}$ unless specified	Quantitation Level (QL)² $\mu\text{g/L}$ unless specified
Chromium, Total (7440-47-3)	200.8	0.2	1.0
Copper, Total (7440-50-8)	200.8	0.4	2.0
Lead, Total (7439-92-1)	200.8	0.1	0.5
Mercury, Total (7439-97-6)	1631E	0.0002	0.0005
Nickel, Total (7440-02-0)	200.8	0.1	0.5
Selenium, Total (7782-49-2)	200.8	1.0	1.0
Silver, Total (7440-22-4)	200.8	0.04	0.2
Thallium, Total (7440-28-0)	200.8	0.09	0.36
Zinc, Total (7440-66-6)	200.8	0.5	2.5
Cyanide, Total (57-12-5)	335.4	5	10
Cyanide, Weak Acid Dissociable	SM4500-CN I	5	10
Cyanide, Free Amenable to Chlorination (Available Cyanide)	SM4500-CN G	5	10
Phenols, Total	EPA 420.1		50
ACID COMPOUNDS			
2-Chlorophenol (95-57-8)	625	1.0	2.0
2,4-Dichlorophenol (120-83-2)	625	0.5	1.0
2,4-Dimethylphenol (105-67-9)	625	0.5	1.0
4,6-dinitro-o-cresol (534-52-1) (2-methyl-4,6,-dinitrophenol)	625/1625B	1.0	2.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
2,4 dinitrophenol (51-28-5)	625	1.0	2.0
2-Nitrophenol (88-75-5)	625	0.5	1.0
4-nitrophenol (100-02-7)	625	0.5	1.0
Parachlorometa cresol (59-50-7) (4-chloro-3-methylphenol)	625	1.0	2.0
Pentachlorophenol (87-86-5)	625	0.5	1.0
Phenol (108-95-2)	625	2.0	4.0
2,4,6-Trichlorophenol (88-06-2)	625	2.0	4.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
VOLATILE COMPOUNDS			
Acrolein (107-02-8)	624	5	10
Acrylonitrile (107-13-1)	624	1.0	2.0
Benzene (71-43-2)	624	1.0	2.0
Bromoform (75-25-2)	624	1.0	2.0
Carbon tetrachloride (56-23-5)	624/601 or SM6230B	1.0	2.0
Chlorobenzene (108-90-7)	624	1.0	2.0
Chloroethane (75-00-3)	624/601	1.0	2.0
2-Chloroethylvinyl Ether (110-75-8)	624	1.0	2.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
VOLATILE COMPOUNDS			
Chloroform (67-66-3)	624 or SM6210B	1.0	2.0
Dibromochloromethane (124-48-1)	624	1.0	2.0
1,2-Dichlorobenzene (95-50-1)	624	1.9	7.6
1,3-Dichlorobenzene (541-73-1)	624	1.9	7.6
1,4-Dichlorobenzene (106-46-7)	624	4.4	17.6
Dichlorobromomethane (75-27-4)	624	1.0	2.0
1,1-Dichloroethane (75-34-3)	624	1.0	2.0
1,2-Dichloroethane (107-06-2)	624	1.0	2.0
1,1-Dichloroethylene (75-35-4)	624	1.0	2.0
1,2-Dichloropropane (78-87-5)	624	1.0	2.0
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) (542-75-6) ⁶	624	1.0	2.0
Ethylbenzene (100-41-4)	624	1.0	2.0
Methyl bromide (74-83-9) (Bromomethane)	624/601	5.0	10.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ μg/L unless specified	Quantitation Level (QL)² μg/L unless specified
VOLATILE COMPOUNDS			
Methyl chloride (74-87-3) (Chloromethane)	624	1.0	2.0
Methylene chloride (75-09-2)	624	5.0	10.0
1,1,2,2-Tetrachloroethane (79-34-5)	624	1.9	2.0
Tetrachloroethylene (127-18-4)	624	1.0	2.0
Toluene (108-88-3)	624	1.0	2.0
1,2-Trans-Dichloroethylene (156-60-5) (Ethylene dichloride)	624	1.0	2.0
1,1,1-Trichloroethane (71-55-6)	624	1.0	2.0
1,1,2-Trichloroethane (79-00-5)	624	1.0	2.0
Trichloroethylene (79-01-6)	624	1.0	2.0
Vinyl chloride (75-01-4)	624/SM6200B	1.0	2.0

Pollutant & CAS No. (<i>if available</i>)	Recommended Analytical Protocol	Detection (DL) ¹ <i>µg/L unless specified</i>	Quantitation Level (QL) ² <i>µg/L unless specified</i>
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Acenaphthene (83-32-9)	625	0.2	0.4
Acenaphthylene (208-96-8)	625	0.3	0.6
Anthracene (120-12-7)	625	0.3	0.6
Benzidine (92-87-5)	625	12	24
Benzyl butyl phthalate (85-68-7)	625	0.3	0.6
Benzo(<i>a</i>)anthracene (56-55-3)	625	0.3	0.6
Benzo(<i>b</i>)fluoranthene (3,4-benzofluoranthene) (205-99-2) ⁷	610/625	0.8	1.6
Benzo(<i>j</i>)fluoranthene (205-82-3) ⁷	625	0.5	1.0
Benzo(<i>k</i>)fluoranthene (11,12-benzofluoranthene) (207-08-9) ⁷	610/625	0.8	1.6
Benzo(<i>r,s,t</i>)pentaphene (189-55-9)	625	0.5	1.0
Benzo(<i>a</i>)pyrene (50-32-8)	610/625	0.5	1.0
Benzo(<i>ghi</i>)Perylene (191-24-2)	610/625	0.5	1.0
Bis(2- <i>chloroethoxy</i>)methane (111-91-1)	625	5.3	21.2
Bis(2- <i>chloroethyl</i>)ether (111-44-4)	611/625	0.3	1.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) ¹ <i>µg/L unless specified</i>	Quantitation Level (QL) ² <i>µg/L unless specified</i>
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Bis(2-chloroisopropyl)ether (39638-32-9)	625	0.3	0.6
Bis(2-ethylhexyl)phthalate (117-81-7)	625	0.1	0.5
4-Bromophenyl phenyl ether (101-55-3)	625	0.2	0.4
2-Chloronaphthalene (91-58-7)	625	0.3	0.6
4-Chlorophenyl phenyl ether (7005-72-3)	625	0.3	0.5
Chrysene (218-01-9)	610/625	0.3	0.6
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
Dibenzo(a-h)anthracene (53-70-3)(1,2,5,6-dibenzanthracene)	625	0.8	1.6
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 (91-94-1)	605/625	0.5	1.0
Diethyl phthalate (84-66-2)	625	1.9	7.6

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Dimethyl phthalate (131-11-3)	625	1.6	6.4
Di-n-butyl phthalate (84-74-2)	625	0.5	1.0
2,4-dinitrotoluene (121-14-2)	609/625	0.2	0.4
2,6-dinitrotoluene (606-20-2)	609/625	0.2	0.4

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Di-n-octyl phthalate (117-84-0)	625	0.3	0.6
1,2-Diphenylhydrazine (<i>as Azobenzene</i>) (122-66-7)	1625B	5.0	20
Fluoranthene (206-44-0)	625	0.3	0.6
Fluorene (86-73-7)	625	0.3	0.6
Hexachlorobenzene (118-74-1)	612/625	0.3	0.6
Hexachlorobutadiene (87-68-3)	625	0.5	1.0
Hexachlorocyclopentadiene	1625B/625	0.5	1.0

Pollutant & CAS No. (<i>if available</i>)	Recommended Analytical Protocol	Detection (DL) ¹ <i>µg/L unless specified</i>	Quantitation Level (QL) ² <i>µg/L unless specified</i>
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
(77-47-4)			
Hexachloroethane (67-72-1)	625	0.5	1.0
Indeno(1,2,3- <i>cd</i>)Pyrene (193-39-5)	610/625	0.5	1.0
Isophorone (78-59-1)	625	0.5	1.0
3-Methyl cholanthrene (56-49-5)	625	2.0	8.0
Naphthalene (91-20-3)	625	0.3	0.6
Nitrobenzene (98-95-3)	625	0.5	1.0
N-Nitrosodimethylamine (62-75-9)	607/625	2.0	4.0
N-Nitrosodi-n-propylamine (621-64-7)	607/625	0.5	1.0
N-Nitrosodiphenylamine (86-30-6)	625	0.5	1.0
Perylene (198-55-0)	625	1.9	7.6
Phenanthrene (85-01-8)	625	0.3	0.6
Pyrene (129-00-0)	625	0.3	0.6
1,2,4-Trichlorobenzene (120-82-1)	625	0.3	0.6

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
DIOXIN			
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (176-40-16) (2,3,7,8 TCDD)	1613B	1.3 pg/L	5 pg/L

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
PESTICIDES/PCBs			
Aldrin (309-00-2)	608	0.025	0.05
alpha-BHC (319-84-6)	608	0.025	0.05
beta-BHC (319-85-7)	608	0.025	0.05
gamma-BHC (58-89-9)	608	0.025	0.05
delta-BHC (319-86-8)	608	0.025	0.05
Chlordane (57-74-9) ⁸	608	0.025	0.05
4,4'-DDT (50-29-3)	608	0.025	0.05
4,4'-DDE (72-55-9)	608	0.025	0.05 ¹⁰
4,4' DDD (72-54-8)	608	0.025	0.05
Dieldrin (60-57-1)	608	0.025	0.05
alpha-Endosulfan (959-98-8)	608	0.025	0.05
beta-Endosulfan (33213-65-9)	608	0.025	0.05

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
PESTICIDES/PCBs			
Endosulfan Sulfate (1031-07-8)	608	0.025	0.05
Endrin (72-20-8)	608	0.025	0.05
Endrin Aldehyde (7421-93-4)	608	0.025	0.05
Heptachlor (76-44-8)	608	0.025	0.05
Heptachlor Epoxide (1024-57-3)	608	0.025	0.05
PCB-1242 (53469-21-9) ⁹	608	0.25	0.5
PCB-1254 (11097-69-1)	608	0.25	0.5
PCB-1221 (11104-28-2)	608	0.25	0.5
PCB-1232 (11141-16-5)	608	0.25	0.5
PCB-1248 (12672-29-6)	608	0.25	0.5
PCB-1260 (11096-82-5)	608	0.13	0.5
PCB-1016 (12674-11-2) ⁹	608	0.13	0.5
Toxaphene (8001-35-2)	608	0.24	0.5

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, or 5) x 10ⁿ, where n is an integer. (64 FR 30417).

ALSO GIVEN AS:

The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).

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. NWTPH Dx – Northwest Total Petroleum Hydrocarbons Diesel Extended Range – see <http://www.ecy.wa.gov/biblio/97602.html>
5. NWTPH Gx – Northwest Total Petroleum Hydrocarbons Gasoline Extended Range – see <http://www.ecy.wa.gov/biblio/97602.html>
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 0.025/0.050.
9. PCB 1016 & PCB 1242 – You may report these two PCB compounds as one parameter called PCB 1016/1242.